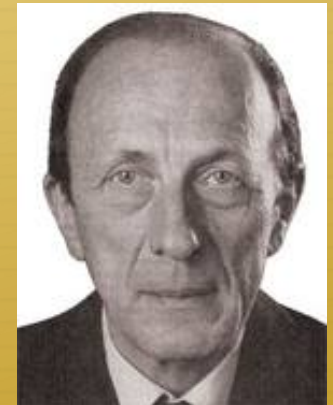




Wolfgang Junge

Wolfgang Junge

(Currently Niedersachsen-Professor für Biophysik, 2009----, formerly Professor of Biophysics, University of Osnabrück Osnabrück , Germany), co-receipient, with Andre Jagendorf, of 2012 Lifetime Achievement Award of The Rebeiz Foundation of Basic Biological Research



Wolfgang's PhD
Advisor: Horst Witt
(of Berlin); he was one
of the top 5
Biophysicists of
Photosynthesis of his
time

A Tribute to
Wolfgang, my younger brother
by
Govindjee
2013

gov@illinois.edu

<http://www.life.illinois.edu/govindjee>

Here is Wolfgang at age 24
with tie, suit, and glasses..
who is still as young as he was then

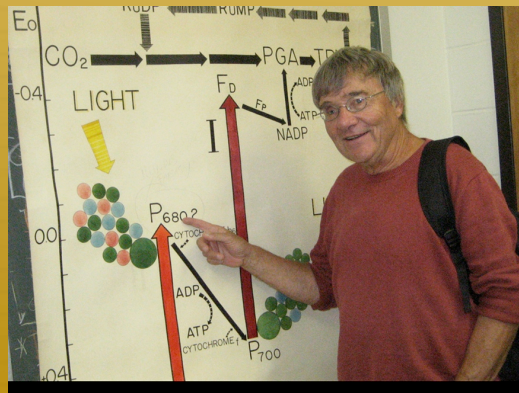
Then



Wolfgang, representing Germany,
in a reunion of students from the top technical
universities of Europe, held in Paris, France in 1964.

The interview was published in the periodical „Les
Réalités“ under the title „7 jeunes scientifiques
européens scrutent le futur“. And, he does speak
French

Here, he is on
Sep 27, 2013
In Govindjee's
Office (669 Morrill
Hall, 505 S.
Goodwin Av.,
Urbana, IL 61801)



By Govindjee

Here, we go back to the wedding of Wolfgang's
parents Karl and Gertrud (born Linke) Junge before
we say anything about him





Some facts about Wolfgang



- ✧ **Born: April 8, 1940, Berlin**
- ✧ **Son of Karl and Gertrud (born Linke);** father was executive of public health insurance; mother was engaged in postwar youth politics; they ran a lively home full of music and books. Fore-fathers were peasants, fishermen, and craftsmen (miller, mechanic, type setter)
- ✧ **Wolfgang enjoyed a great experimental school with plenty of extra activities (free lab access, theater, music); he read a lot, played Bach on the piano and soccer in the street**
- ✧ **First marriage in Berlin on July 7, 1966 to Erneste Frings, dancer and choreographer--performing till today; second marriage to Verena Förster on May 6, 1993 in Osnabrück; he has 4 children: Benjamin and Simon; Leonie and Alwin; and 2 grandchildren**



Some facts about Wolfgang



- ✦ **Diplom Ingenieur in Physics, TU-Berlin, 1965; PhD (with Horst Witt), TU-Berlin, Physical Chemistry, 1968; Habilitation, TU-Berlin, Physical Chemistry, 1971; Associate Prof. Biophysical Chemistry, 1973-1978, TU-Berlin; Visiting Prof. Univ Pennsylvania; UTUC (Biophysics); Prof. & Head, Biophysics, Univ. Osnabruck (1979—till retirement in 2007)**
- ✦ **He has received many prizes including: Röntgen-Prize; Niedersachsen-Prize; Peter-Mitchell-Medal; Boris-Rajewsky-Prize**

Honors (German cross of merit; and first president of ISPR) and friendship

Wolfgang being previously honored
by German Chancellor Schröder



and overwhelmed by the German cross of merit

At the Montpellier (France) Photosynthesis Congress in 1995, International Society of Photosynthesis Research (ISPR) was formed at a Committee meeting, attended by the Congress participants. Here, Wolfgang Junge was elected as the first President of our beloved Society (Govindjee and Yoo (2007) Photosynth Res 91:95-106).



by the Eger Wine Brotherhood (1998, Budapest) with three presidents
of the Int. Soc. Photosynthesis (Paul Matthies and Don Ort)



by three ex-members of his lab (2005)
Gert Althoff, Ulrich Kunze, Roland Schmid



Paul Matthies

Don Ort

Wolfgang certainly has fun both in making major discoveries in the laboratory as well as outdoors

travelling



wind-surfing (1995)



rafting (2000)



mountaineering with Verena (2010)



With common friends in Berlin

Uli Siggel

Gernot Renger



I have interacted with Wolfgang, in Berlin, as well as with Uli Siggel and Gernot Renger, who is no more, while on EMBO and DAAD Fellowships– 1970s; and 1980s

When we worked in Berlin.. 1976



Figure 2. Outside the Volmer Institute, Berlin, with Govindjee (second, right) and his student Rita Khanna (below, right) visiting in 1976, with B. Rumberg (first, right), H. Witt (fourth, right), and the author (second, left, below).

Wolfgang (really a young boy)

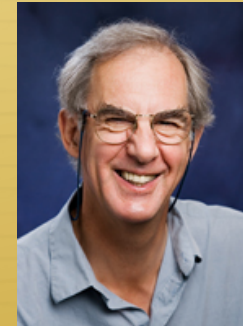
Govindjee

With Colin Wraight and Les Dutton At the Gordon Research Conference, 2012

Colin Wraight

Les Dutton

These three and
Tony
Crofts are the
pillars
of Bioenergetics of
Photosynthesis in
the
World



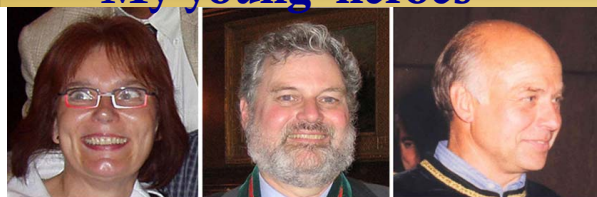
Tony Crofts
(very serious, but
he does smile)

Govindjee

With Sathom
Saphon
And Katie
Patty



My young heroes



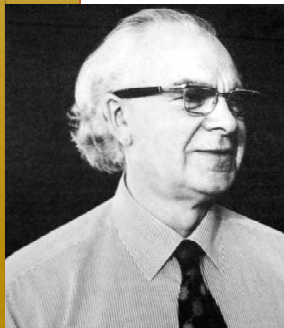
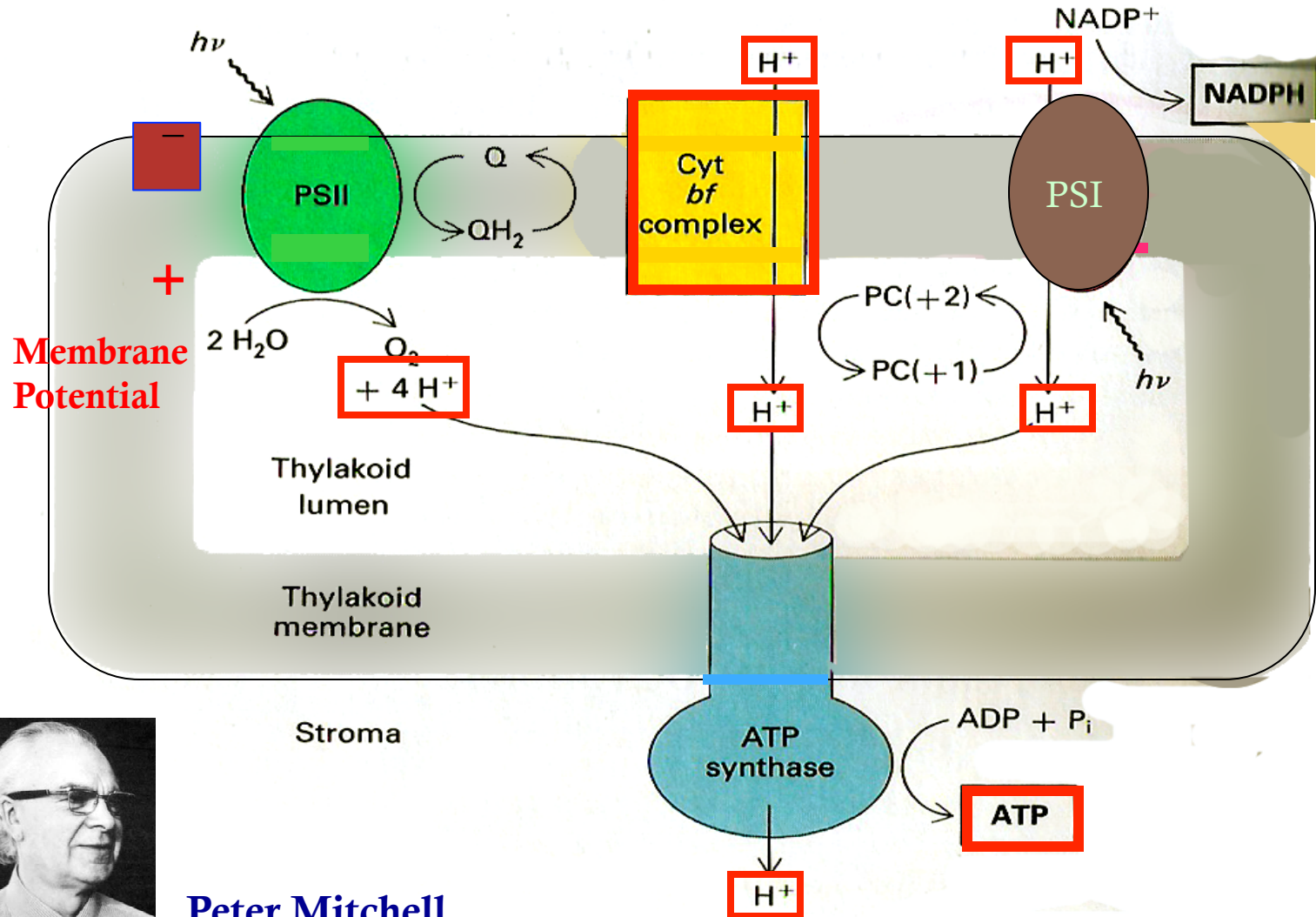
WJ with Claus Rollinger
(President of his
University), Howard Berg
(receiving honorary
degree), and Karlheinz
Altendorf (Dean of
Biology).



At his 65th birthday in
2005 ...ballooning
across lower Saxony
with Ulrich Kunze,
Gaby Hikade, his wife
Verena Förster, who is a
chemist, and
Hella Kenneweg

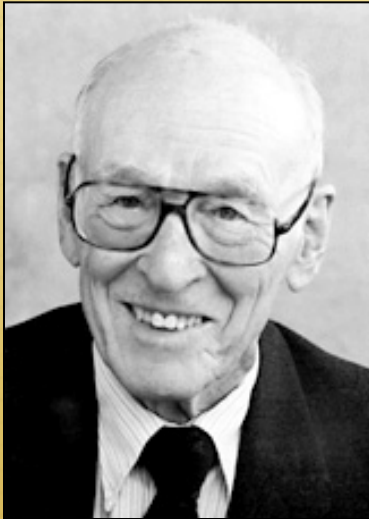
Govindjee

*Together: A Proton Gradient (**Delta pH**) plus Membrane Potential (**Delta Psi**) , i.e., Proton Motive Force (**Delta p**) , is what makes ATP for all of us (Peter Mitchell's Nobel Prize in Chemistry, in 1978)*



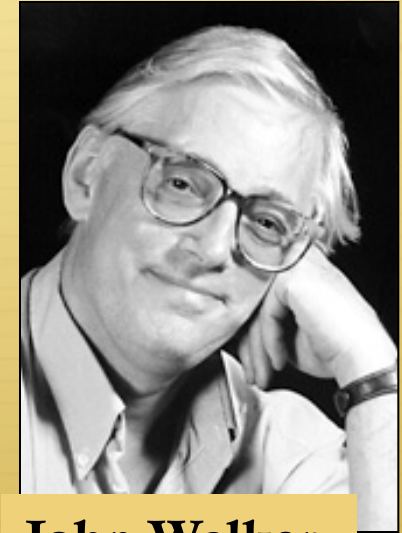
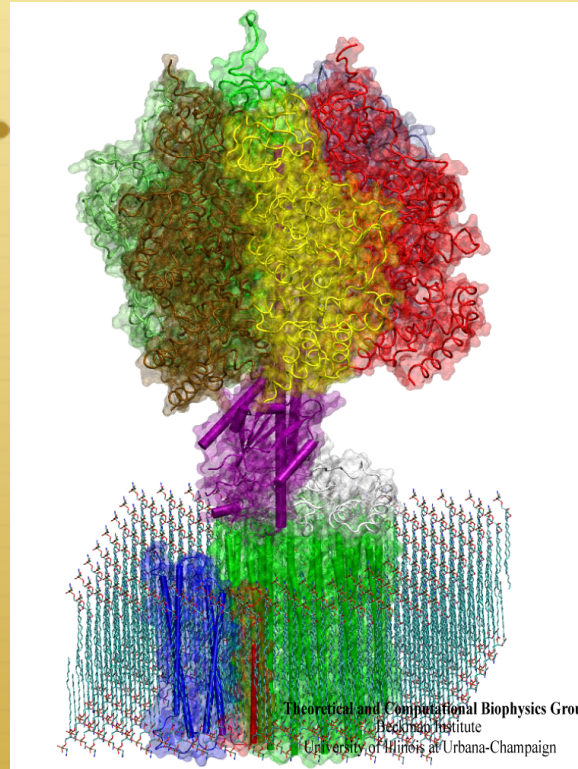
Peter Mitchell

The Nobel Prize in Chemistry 1997



Paul C Boyer

University of California
Los Angeles, CA, USA



John Walker

**MRC Laboratory of
Molecular Biology
Cambridge, UK**

Wolfgang Junge has provided some of the key experiments to prove that ATP synthase makes ATP by converting proton motive force to rotation energy of the molecule. Please ask him how the enzyme does it—may be you can read the review : W. Junge, H. Sielaff, and S. Engelbrecht (2009) Torque generation by rotary FOF1-ATPase Nature 459: 364-370.



-
- The diagram illustrates the structure and function of the Na⁺-K⁺-ATPase pump. The pump is composed of several subunits: α (red), β (pink), γ (yellow), δ (green), and ϵ (light green). The α subunit is the largest and is embedded in the lipid bilayer. The β subunit is attached to the α subunit. The γ subunit is located between the α and β subunits. The δ and ϵ subunits are located on the intracellular side of the pump. The pump is shown moving Na⁺ ions out of the cell and K⁺ ions into the cell, as indicated by the curved arrow. The lipid bilayer is represented by a wavy line with orange circles (polar heads) and grey cylinders (hydrophobic tails).

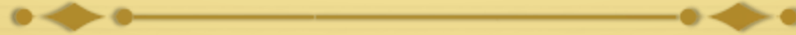
Some quotes from Junge (2005)



- ✦ “The classical Jagendorf experiments had been performed and were in its favor [see (Jagendorf 2002) in this series]. For a newcomer from physics, the hypothesis was easy to grasp. If the hydrolysis of ATP electrifies nerve membranes, then why should electrochemical force not drive the synthesis of ATP?.....,”
- ✦ Then after discussing his experiments and those of others., he wrote:
- ✦ “These findings suggested that the transmembrane voltage alone might present sufficient energy to drive ATP synthesis in terms of Mitchell’s hypothesis.”
- ✦ “Electrochromism as a voltage probe was soon thereafter established in biomimetic model systems (.....and in purple bacteria by Baz Jackson and Tony Crofts (Jackson and Crofts 1969, 1971), see the joint review (Junge and Jackson 1982) and Crofts’ historical perspective of the Q-cycle, (this volume).”



Congratulations, Wolfgang..



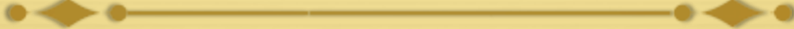
“The firefly seems a fire, the sky looks flat; Yet sky and fly are neither this nor that.”..

The only request to you is that you keep your child-like curiosity for ever. And, I promise to do the same. OK?...

Govindjee



Web sites for Wolfgang are at



✧ For more, on Wolfgang, see

[http://www.biologie.uni-osnabrueck.de/biophysik/
junge/Vita.pdf](http://www.biologie.uni-osnabrueck.de/biophysik/junge/Vita.pdf)

✧ For movies on ATP Synthase, see

[http://www.biologie.uni-osnabrueck.de/biophysik/
junge/Media.html](http://www.biologie.uni-osnabrueck.de/biophysik/junge/Media.html)

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