In honor of
Bob B. Buchanan

Govindjee
(gov@illinois.edu)
September 9, 2012
Rebeiz Foundation for Basic Research
(http://www.vlpbp.org/)
Champaign--Urbana, Illinois

Professor Bob B. Buchanan

Executive Associate Dean, College of Natural Resources,
University of California Berkeley

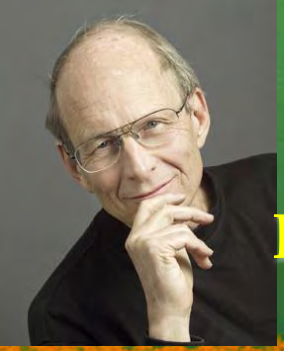
- Member – US National Academy of Sciences - 1995
- Fellow - American Academy of Arts and Sciences – 1997
- Fellow - American Association for the Advancement of Science – 1997
- Charles F. Kettering Award for Excellence in Photosynthesis - American Society of Plant Biologists – 1998
- Stephen Hales Prize - American Society of Plant Biologists – 2005
- Fellow - American Society of Plant Biologists (2007); and of American Academy of Microbiology (2006)

1940

- Who is this child?
- What is he doing?
- Entering the dairy industry?

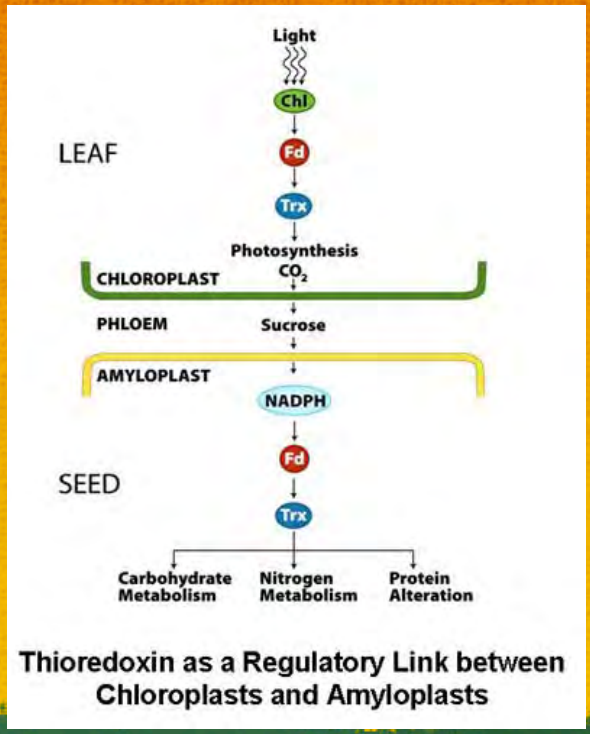
1980

Well, it took 40 years before the young boy, now a young man, was able to turn milk into ice cream, using Thomas Jefferson's recipe



Today, on September 9, 2012, we are honoring this distinguished young man, Professor Bob Buchanan, from Berkeley, California (that was also the home of Melvin Calvin, Andy Benson and Dan Arnon: basically "dark reaction" folks). And, importantly, we are honoring him in Champaign-Urbana, Illinois (that was the home of Robert Emerson and Eugene Rabinowitch, the "light reaction" folks) with the 2011 Lifetime Achievement Award of the Rebeiz Foundation, and that too at the beautiful home of Carole and Tino Rebeiz.

I will show you some slides to celebrate this wonderful event for Bob, sometimes referred to as BBB

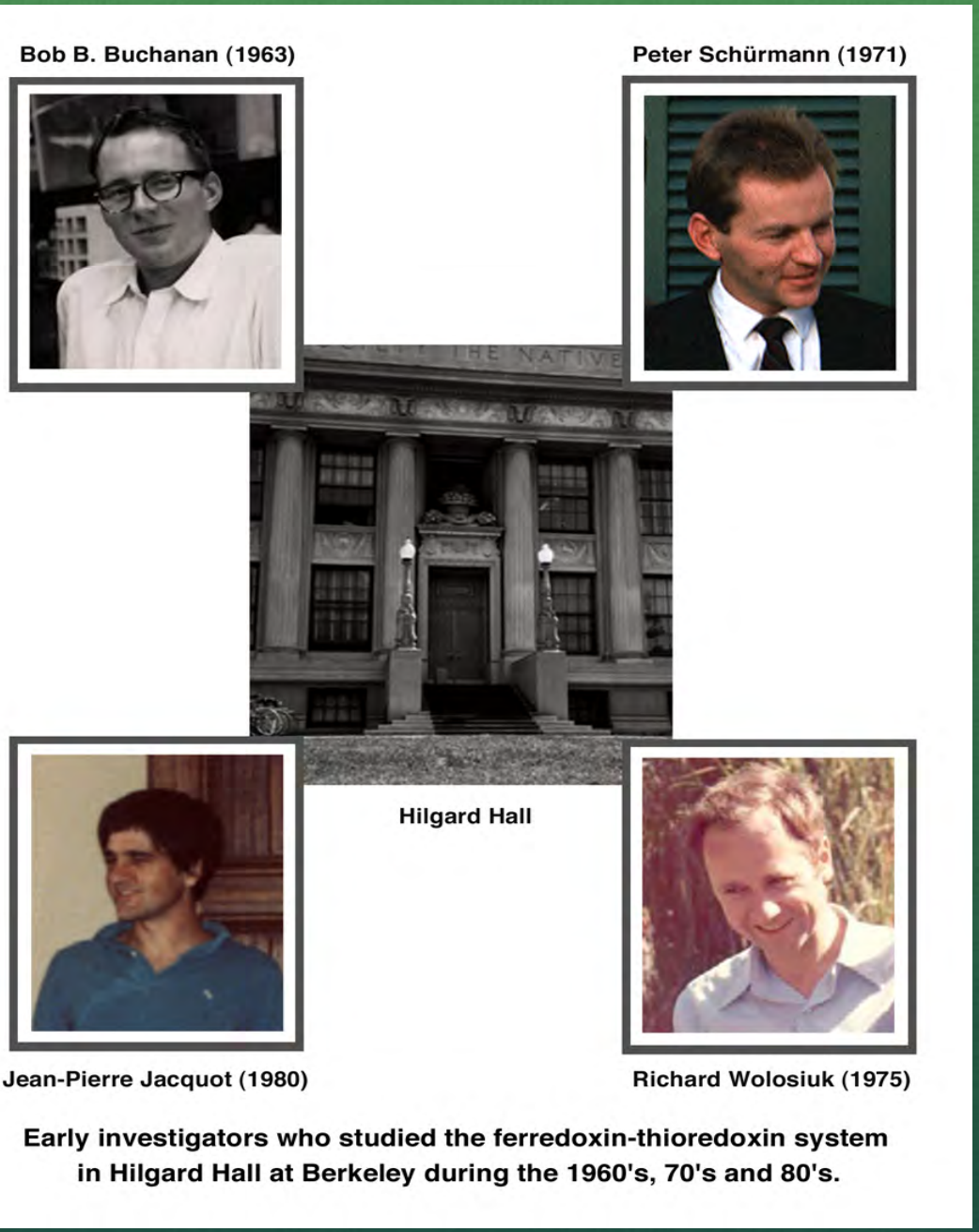


Thioredoxin as a Regulatory Link between Chloroplasts and Amyloplasts

Source of figures: http://pmb.berkeley.edu/profile/bbuchanan

Research in Bob's Laboratory focuses on a very important regulatory protein, called thioredoxin, found in plants.

He is THE authority on this protein..a major discoverer of everything about it—Please ask him and see his eyes shine!



Early investigators who studied the ferredoxin-thioredoxin system in Hilgard Hall at Berkeley during the 1960's, 70's and 80's.

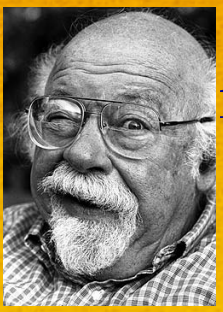
Who is Who of the Ferredoxin/ Thioredoxin System, Berkeley: 1960s, 1970s and 1980s

Question: Who was the first?

Answer: Bob Buchanan

Source: BBB

Who were Bob's mentors?



[1] Jesse C. Rabinowitz (1925—2003; a distinguished molecular and cell biologist), world authority on basic biology of folic acid; he was a true devotee of culture science, art, music, literature; above all, he was a great photographer

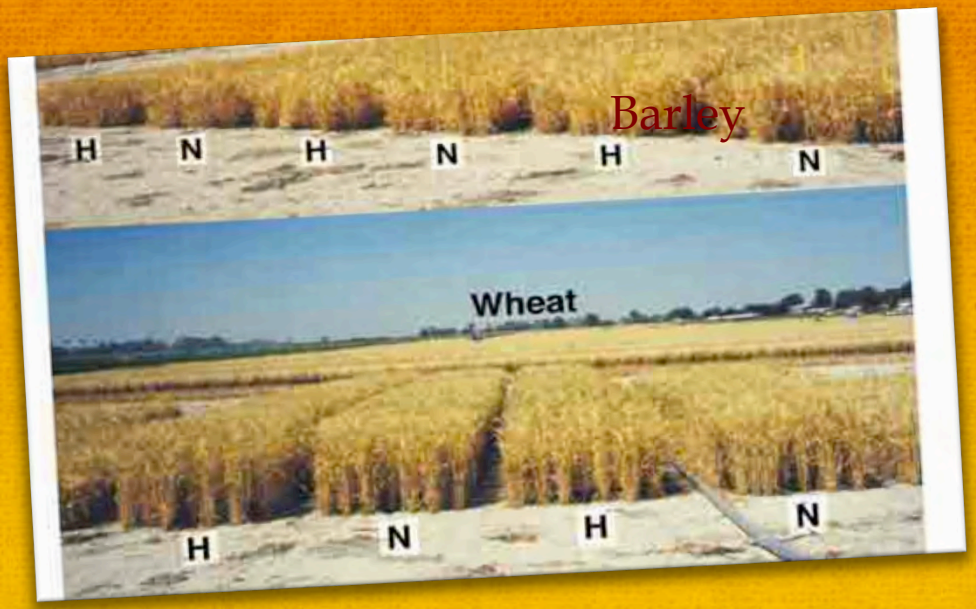
[2] Daniel I. Arnon (1910-1994; a distinguished plant biochemist), discoverer of photoposphorylation in chloroplasts; and one of the most colorful personalities in the field of photosynthesis (once in Germany, I had to share the same bed as him since the organizers only gave us a room with one big bed)

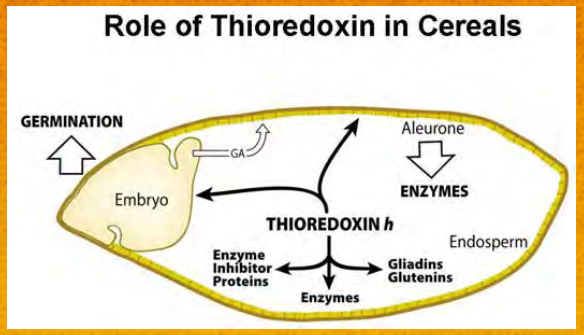
As a postdoc with Jesse C. Rabinowitz (1925—2003)
UC Berkeley – 1963

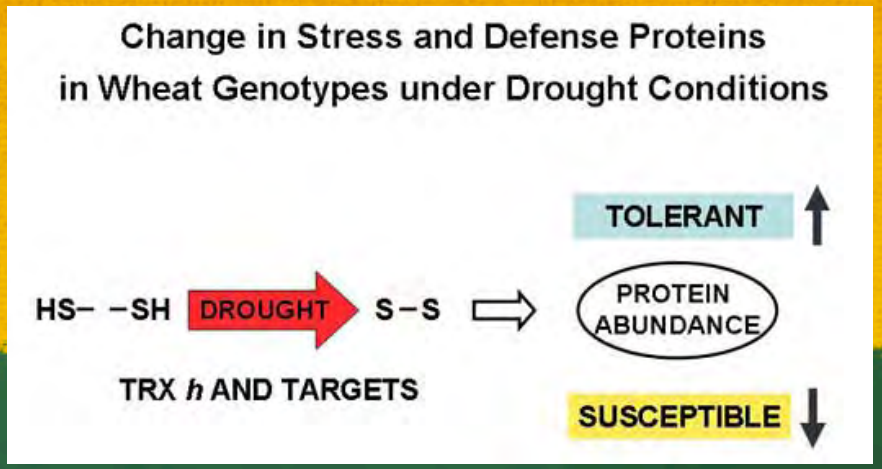
Discovery of Ferredoxin-linked CO_2 fixation in Photosynthetic Bacteria
With Daniel Arnon at the Zeiss Spectrophotometer
UC Berkeley, 1964

With Daniel Arnon – UC Berkeley, 1968

Discussing the Reverse Citric Acid Cycle in Bacterial Photosynthesis







Improving plants through photosynthesis—by overexpressing thioredoxin

Studies together with many including **Ghasem Hosseini Salekdeh** and his collaborators (in Iran) have uncovered a role for thioredoxin enabling wheat to survive drought conditions.

Family Gathering at Virginia Farm – 1991
Great, great grandfather and son in the background

I end this short tribute to Bob by showing a photo I took of him with Dan Arnon's daughters, Ruth and Ann, ~ 2005.. Congratulations and Enjoy the party