

Dr. Robert L. Burnap

Department of Microbiology & Molecular Genetics

Dr. Robert L. Burnap received his bachelor's degree at the University of Michigan. He went on to the University of California at Los Angeles for a master's in biology and then to University of California at Santa Barbara, where he developed a doctoral thesis on the evolution of the oxygenic photosynthetic mechanism. His postdoctoral training was in the genetic manipulation and biophysical analysis of photosynthetic proteins at Purdue University under the direction of Professor Louis Sherman.

Research in the Burnap lab focuses on photosynthesis, the conversion of light (solar) energy to chemical energy that can be utilized to drive the metabolism of living cells. It involves the genetic engineering of the photosynthetic molecules in algae and the use of various biochemical and biophysical techniques to evaluate the function of photosynthetic mechanism. This is leading to a better understanding of photosynthesis and a better ability to harness its power. There are two major on-going projects: The first, supported by the National Science Foundation, investigates the metal-containing enzyme that utilizes light energy to split water – a process that yields energy-rich, bound hydrogen and releases oxygen. The second, funded by the Department of Energy, studies the metabolic signals that control the expression and activity of the carbon dioxide-concentrating mechanism, which supports the assimilation of atmospheric carbon dioxide in support of plant and algal growth.

Burnap teaches several courses at OSU, including cell & molecular biology, bioenergetics and bioinformatics.

Burnap has recently returned from an appointment as a rotating program director in the Division of Cellular and Molecular Biochemistry at the National Science Foundation.



Room 230D, HBRC
Oklahoma State University
Stillwater, OK 74078
405.744.7445 (p)
rob.burnap@okstate.edu