

The Research Scholars in Residence Program at Cal Poly
is pleased to present a lecture for the University and Local Community

How to

SAVE THE WORLD

or
Carbon Capture
by Temperature Swing Adsorption

Dr. John S. Dunning
Cal Poly Research Scholar in Residence

Monday, November 27, 4:10pm ~ Kennedy Library, Room 35-209

Temperature swing adsorption is a new, developing technology that can capture carbon dioxide at a combustion source and compress, reuse, or sequester the gas so that it cannot contribute to global warming. This technology promises to lower costs so that it might be widely used in energy systems of the future.

The talk will review very briefly the concept of the greenhouse gas effect, starting with methods to estimate planetary surface temperatures, and illustrating the effect of atmosphere on the difference between calculated and observed temperatures. Information on historical greenhouse gas build-up and the corresponding temperature increase on earth will be provided.

Carbon capture and sequestration, or CCS, is a new process that has been implemented on a very small scale at a heavy oil field in Alberta, Canada. This talk will provide information, including economics, on a pilot plant with a capacity of 30 tons of carbon dioxide per day that is being developed and will be demonstrated in the coming year. Directions for future research aimed at lowering both capital and operating costs will be discussed.

The talk will not focus on policy, politics, or controversy as the Earth has demonstrated serious indifference to such matters. However, discussion of various points of view is welcome as policy will ultimately determine economic viability of this technology.

Dr. Dunning, formerly a research scientist and executive with General Motors Research Laboratories, worked on developing batteries and fuel cells for transportation applications, electrochemical processes such as plating and chemical processes such as magnetic material production. He has a Ph.D. in electrochemical engineering from UCLA.