

*Professor Douglas Williams*

## INTERVIEW WITH DOUGLAS WILLIAMS

**Professor of Agricultural Engineering**

*LS: What is your background in methane recovery systems?*

*DW:* I've been working alternate energy forms for thirty years. In 1974 I was at Cornell, around the time of the first energy crisis. There was a war in the Middle East and a shortage of oil. I was starting my academic career at this time and became interested in other forms of energy. I ended up doing a one-year post-doctoral study at Cornell studying how much energy could be extracted from animal waste. I became interested in methane recovery then.

*LS: What is methane?*

*DW:* Methane comes from animal waste. The waste is put into a sealed container. There are special bacteria present in the manure that are encouraged to break down the organic matter in the absence of oxygen to produce methane and carbon dioxide.

*LS: How does the methane recovery program work here on Cal Poly campus?*

*DW:* The manure from the cows is washed down into a covered lagoon. The lagoon is essentially a pond covered with fabric to keep out oxygen. The methane is captured and piped to an electric generator, which burns the methane as fuel to make electricity. This electricity is fed into the Cal Poly grid. The program has generated 15,000 kilowatt-hours over the last two years, saving the school about \$15,000.

*LS: Are there any problems with Cal Poly's system?*


*DW:* The generator needs a lot of maintenance. It could also be producing more electricity, but due to the experimental nature of the project it is running at about ten to fifteen percent of its capacity.

*LS: Do you see methane recovery as a long-term solution to fossil fuel depletion?*

*DW:* I see it as part of the solution. There is not enough manure to replace all fossil fuels. If we could use all the animal waste, we could generate about one percent of the electricity. Methane recovery does allow operations that work with animals such as

dairies and meat producers to be self-sufficient in regards to energy. If all possible forms of biomass were used, such as garbage from landfills, sewage waste, and industrial food processing waste, we could generate up to ten percent of everyone's energy needs.

*LS: How can people get involved with Cal Poly's methane recovery program?*

*DW:* They can call me to find out more information. If they want to be involved from a technical standpoint, they need an agriculture or engineering background. I am happy to give anyone a tour anytime though. 

*Interview conducted by Lauren Shute, a graphic communication major.*