

# GEOLOGY *at SMU*

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Working in the SMU geothermal lab is a hot shot in the geothermal energy field. He is David Blackwell, holder of the Hamilton chair. He has been researching and teaching geothermal energy and the Earth's surface heat flow with much enthusiasm since the 1960s.

Being one of the world authorities on the subject, he has worked on various projects helping companies and governments to better utilize this natural resource, from North and Central America to Italy and Indonesia. With Ken Wisian, Jason McKenna, Maria Richards, Mark Leidig, Steven Burns and Tosan Ogharaerumi, research is flowing out rapidly with expanding applications.

Some of the SMU Geology alumni, such as John Steele, Jim Williams, Will Gosnold and John Ziagos, and others will remember vividly all the temperature-depth logging of wells in the western states that took place in the 1970 – 80's. It's still going on each summer although with a narrower focus. Summer 2001's focus was in Idaho at the Idaho National Engineering & Environmental (INEEL) site studying groundwater flow to predict the movement of contamination plumes. Geothermal sites and oil and gas fields in Nevada, Colorado and Kansas were also visited by Ken Wisian (Ph.D. 1999) and Jason McKenna (Ph.D. student). All of the past work is now part of an online database of geothermal sites that contains almost 6000 individual wells. As part of a Department of Energy contract, the Geothermal Lab has scoured the old files, and Dave has collected information from warehouses to contractors' basements to make as complete a database as possible (some interesting comments have been found on some of the old field log sheets). If you have any well information sitting in a box in storage and want to get rid of it, please send it our way.

For almost 35 years Hamilton Professor David Blackwell has had a long and fruitful association with SMU. Blackwell is a native of Dallas, and has studied geothermal energy all over the world. One of his recent grant requests proposes to measure underground temperatures in Costa Rica.

## **GEOPOWERING THE WEST**

*Is a new initiative by the Department of Energy  
to capitalize on the Earth's abundant geothermal resources*

**Goals of GeoPowering the West:**







**By Naresh Kumar  
Contributing Writer**

Since production from the North Slope of Alaska from the Prudhoe Bay Field began in 1977, it has contributed approximately 20 to 25% of the nation's daily oil production. Prudhoe Bay and some of the nearby fields are maturing and their contribution to the nation's supply will continue to decline.

It is certainly possible that production from ANWR could maintain North Slope's contribution to the nation's supply at current levels. While other parts of the North Slope (such as the National Petroleum Reserve Alaska) might provide additional reserves, ANWR coastal plain is one of the most prospective areas in the nation.

The Arctic National Wildlife Refuge was created by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980, which set aside more than 100 million acres in Alaska as national parks, preserves, wildlife refuges, and wilderness areas. The refuge consists of 19 million acres, of which only 1.5 million acres in the coastal plain *can even be* considered for possible oil and gas exploration. This 1.5 million acre area is commonly referred to as the 1002 area.

Congress left the management of the 1002 area open because of its potential for oil and gas resources. In 1987, the Secretary of the Interior issued a report that concluded that the "area has a very

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*How about sharing some*



## GEOLOGICAL SCIENCES FACULTY, SOUTHERN METHODIST UNIVERSITY

**David D. Blackwell**, Hamilton Professor, Ph.D., Harvard. Geothermal studies and their application to plate tectonics, especially of the western United States; energy resource estimates and geothermal exploration.

**John W. Goodge**, Associate Professor, Ph.D., UCLA. Continental tectonics, as approached by petrology, structural geology and thermo-chronology. Petrologic and tectonic evolution of North American Cordillera and Ross Orogen region of Antarctica.

**Robert T. Gregory**, Professor and Chair, Ph.D., California Institute of Technology. Stable isotope geology and geochemistry, evolution of earth's fluid envelope and lithosphere.

**Vicki L. Hansen**, Professor, Ph.D., UCLA. Structure, tectonics, geomorphology, earth systems, and terrestrial planet evolution.

**Eugene T. Herrin**, Shuler-Foscue Professor, Ph.D., Harvard. Theoretical and applied seismology, solid earth properties, computer analysis of geophysical data.

**Louis L. Jacobs**, Professor, Ph.D., University of Arizona. Director of Shuler Museum of Paleontology, and President of the Institute for the Study of Earth and Man. Vertebrate paleontology, evolution.

**A. Lee McAlester**, Professor, Ph.D., Yale University. Marine ecology-paleoecology, evolutionary theory, Paleozoic geology, petroleum geology.

**Brian W. Stump**, Albritton Professor, Ph.D., University of California, Berkeley. Seismology, earthquake and explosion source theory, regional wave propagation, seismic and infrasonic instrumentation and data acquisition, and mine related seismicity.

**John V. Walther**, Matthews Professor, Ph.D., University of California, Berkeley. Experimental and theoretical aqueous geochemistry, fluid-mineral surface interactions, kinetics of dissolution, and mineral solubilities as a function of temperature, pressure and solution composition.

**Crayton J. Yapp**, Professor, Ph.D., California Institute of Technology. Stable isotope geochemistry applied to the study of paleoclimates, paleoatmospheres, and the hydrologic cycle.

### ADJUNCT FACULTY

**Steve Bergman**, Adjunct Assistant Professor, Ph.D., Princeton University. Tectonics of sedimentary basins, surface processes, volcanology, geochronology and hard rock petrology.

**Anthony Fiorillo**, Research Associate Professor, Ph.D., Pennsylvania. Curator of Paleontology, Dallas Museum of Natural History.

**Bonnie F. Jacobs**, Adjunct Assistant Professor and Chairman of the Environmental Science Program, Dedman College. Ph.D., University of Arizona. Paleobotany of Tertiary deposits of Africa, application of pollen analysis to Cenozoic geological and environmental Problems.

**Douglas H. Oliver**, Research Assistant Professor, Ph.D., Southern