

Kentucky Cross Section

Earth Resources—Our Common Wealth

Summer 2014

KGS Director and State Geologist Jim Cobb retires in July

After 34 years with KGS, 14 of them as state geologist, Jim Cobb retired in early July. Cobb, a native of Illinois, earned his master's degree in geology at Eastern Kentucky University, where he met Don Haney, who headed the Geology Department there. Haney, who died in early June (see story below), later became state geologist and

contacted Cobb about working for the Survey.

After finishing his doctoral degree in coal geology at the University of Illinois, Cobb joined the Survey's Coal Section in 1980, focusing on Kentucky's coal resources at a time when coal's importance was growing because of the energy crisis of the late 1970's.

"We wanted to know how much coal was really out there that could be used for con-

version to liquid and gas fuels," Cobb says. "Eventually, Kentucky became the pilot for a national coal availability study that I worked on." He had the opportunity to speak before a Congressional committee on the topic.

In 1990, Cobb was promoted to assistant state geologist for research, writing proposals for grants. "Every day, Don Haney and I went jogging," Cobb remembered with a chuckle.

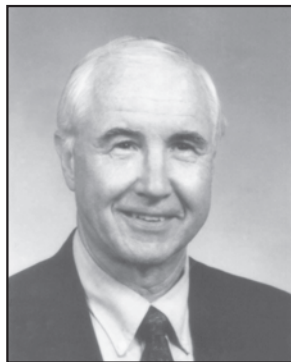
"We ran 4 miles a day for 15 years, and we would discuss all the things that needed to be done at the Survey while jogging at about 4 miles an hour."

Haney retired in 1999 after serving the longest stint as Kentucky state geologist—21 years. Cobb was selected state geologist, and the Twelfth Survey began on October 1 of that year.

He says development of the Survey's Web services and data distri-

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Former State Geologist Don Haney dies at 79



Former KGS Director and State Geologist Donald Haney, considered a mentor and friend to many at the Survey, died on June 8 at the University of Kentucky Hospital. A Pulaski County, Ky., native, Haney is survived by his wife,

Shirley, a daughter, and a granddaughter.

He served as state geologist from 1978 to 1999, overseeing major growth in the Survey and participating in state and national legislative efforts. Haney was one of the principal authors of the 1992 National Geologic Mapping Act, and he proposed legislation passed by Kentucky's General Assembly to create the state's Groundwater Monitoring Network and the Groundwater Data Repository. He was instrumental in the pas-

sage of a law establishing the Kentucky Board of Registration for Professional Geologists and served as a board member for 7 years. He worked with UK, industry, and public officials to develop plans and help coordinate construction of the Mining and Mineral Resources Building at UK, where KGS is located, as well as a new Well Sample and Core Library.

Haney's tenure at the Kentucky Geological Survey was marked by great progress in coal as-

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Director's Desk

I have had the privilege of being Kentucky state geologist for 14¾ years, and my tenure will end July 8. I came to KGS in 1980 when energy was foremost in the minds of many policy-makers and Kentucky needed more information about its coal resources. The energy crisis of the mid '70's left a big impression, and it looked as though energy was America's big weakness. I had just completed my Ph.D. in coal geology, and Don Haney had been state geologist for 2 years. My first work at the Survey was on the coal availability program, which was supported by Congress and continued at the USGS for more than 20 years.

As director of the Kentucky Geological Survey, I have worked with a tremendous staff of geologists who are committed to the best understanding of Kentucky's geology for the benefit of the commonwealth. During my tenure, KGS has worked on many aspects of geology and mapping. More than 400 new titles have been added to the KGS list of publications. The digital geologic map series at 1:100,000 scale was completed, the Kentucky Seismic and Strong-

Motion Network was expanded, the deep subsurface was investigated for CO₂ sequestration, and the online geology GIS and data distribution system was created. KGS began a scientific exchange with Gansu Province in China concerning seismic hazards. Although parts of Kentucky have a relatively high earthquake hazard, few earthquakes occur here; but China has had large and devastating earthquakes during this time, which have made possible scientific investigations not possible in Kentucky.

Just in the last month, KGS hosted the 106th annual meeting of the Association of American State Geologists. Thirty-six states were represented, plus officials of federal agencies, including the U.S. Geological Survey. Twenty-six years ago, then-State Geologist Don Haney hosted this same meeting in Lexington. This time, word of Don's death came just as the first activities for the meeting were getting under way. It was a shock to all, and many of the participants knew Don well. Don served AASG in many capacities and was responsible for so many advancements in KGS programs and facilities. He was a real force for research and public service on



Jim Cobb

Kentucky's minerals, fuels, maps, hazards, and all aspects of geology.

I want to thank everyone at KGS for the tremendous support and cooperation I have experienced during my tenure. All of the advancements made by KGS have been made by staff members, and I have been their biggest supporter. I wish the next state geologist and director all the best, and am confident he or she will bring new ideas and programs that will benefit Kentucky and will find a very willing, knowledgeable, and cooperative staff. Until the permanent position is filled, Jerry Weisenfluh has been appointed by UK to be the interim state geologist and director of KGS. Best wishes to Jerry and all. ❖

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assessments, groundwater research, mine subsidence programs, earthquake monitoring, and the construction of computer databases to benefit industry and the public. He served as president of the Association of American State Geologists and president of the American Geological Institute. After retiring from KGS, he was appointed by

Gov. Paul Patton to the Kentucky River Authority.

Earlier in his career, Haney founded the Geology Department at Eastern Kentucky University and served as its first chairman. Students mentored by Haney went on to become state geologists in seven states. He earned bachelor's and master's degrees in geology at UK, and a Ph.D. at the University

of Tennessee. The UT Geology Department recognized him as an outstanding alumnus, and KGS held the Donald C. Haney Distinguished Lecture Series after his retirement.

"All the honors, awards, and accomplishments that Don Haney achieved hint at but do not fully address his warm, friendly, out-

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AASG annual meeting hosted by KGS in June

The 106th annual meeting of the Association of American State Geologists was held in Lexington and hosted by KGS, June 8–11. More than 120 people attended business and plenary sessions, topical breakout sessions, field trips, and other activities. They represented 36 state geological surveys, federal agency partners, and others. Many of the session topics reflected issues in the news recently, including landslides and other geologic hazards, energy and mineral exploration, sustaining geological surveys, and communicating science to the public.

KGS and the UK Office for Informational Services and Technical Liaison worked for months in advance on a website for registration and scheduling meeting rooms at a Lexington hotel and convention center.



John Hickman, of the KGS Energy and Minerals Section, answers questions during a field trip to Cumberland Gap.

KGS staff organized field trips to Cumberland Gap National Historic Park, Camp Nelson Civil War Heritage Park, and the Eastern Kentucky Coal Field.

During the closing banquet, outgoing AASG President and California State Geologist John Parrish turned the gavel over to the new president, Jonathan Arthur, Florida's state geologist. Simon Winchester, author of "The Map That Changed the World" and "The Men Who United the States," among other books, was the featured speaker at the banquet. ❖



David Russ, of the U.S. Geological Survey, presents retiring KGS Director Jim Cobb with a plaque recognizing his outstanding contribution to science and his career of service to Kentucky.

KGS participation in geothermal data project wrapping up

The KGS Geoscience Information Management Section is nearing the end of its successful participation in the National Geothermal Data Project, administered by the Association of American State Geologists with funding from the U.S. Department of Energy. Project participants collected and digitized scientific data on geothermal exploration and development across the country, providing the data freely to the public through an online system.

DOE formally launched the National Geothermal Data System on April 30. Populated with geothermal-relevant data from all 50 states, the NGDS has the

potential to fundamentally change America's energy portfolio by driving efficient exploration for clean, renewable energy from Earth's interior, DOE says.

The project resulted in a unique distributed data system in which state geological surveys host and update their own data, which can then be accessed through a common portal. The system is now online, and data can be accessed through the National Geothermal Data System at geothermaldata.org.

KGS received a 3-year, \$586,000 subcontract in July 2010. Through 2013, KGS contributed more than 1.6 million

records to the system, including oil, gas, and water borehole records; bottom-hole temperature measurements; geologic map and fault data; rock chemistry data; and geologic publications. More than 7 million data points from throughout the nation have been entered into the NGDS.

KGS was also selected as one of four regional technical hubs, primarily responsible for the southeastern states. KGS serves as the distribution hub for states that lack the technical infrastructure or ability to serve their own data into the national data system. This activity is still ongoing, and KGS serves as the hub for 13 states. ❖

KGS hosts Utica Shale consortium workshop and field trip

The KGS Energy and Minerals Section hosted an end-of-project workshop for the Utica Shale Appalachian Basin Exploration Consortium, May 21–22. The consortium was formed in 2012 to conduct research to better understand the Upper Ordovician Utica Shale and equivalent units, and to help reduce risks in its exploration for resources. Oil and gas production from organic-rich shale units, including the Utica, has become important for onshore energy exploration in the United States. The Utica Shale and its equivalents extend from the southern Appalachian area north to Quebec.

During a core workshop at the KGS Well Sample and Core Library on May 21, about 600 feet of annotated core was on display, including parts of two northern

Kentucky cores and one southern Ohio core. The next day, KGS researchers led an all-day field trip to northern Kentucky, along the AA Highway between Maysville and Covington. The 23 participants visited eight outcrops of the Kope and Point Pleasant Formations.

The KGS portion of the project was conducted by John Hickman, Cortland Eble, and Jason Backus. They analyzed 1,094 samples from project wells for total organic carbon, organic petrology, and thermal maturity. The consortium includes the 15 oil and gas exploration companies



Utica Shale Consortium participants explore an outcrop in northern Kentucky during a May 22 field trip.

that funded the project, along with researchers from the Kentucky, Ohio, West Virginia, New York, and Pennsylvania geological surveys and the National Energy Technology Laboratory of the U.S. Department of Energy. ❖

Jim Cobb retires—continued from p. 1

bution is one of the major accomplishments of the time he has been at KGS. The recognition that Kentucky’s geologic mapping needed to include surficial maps led to the creation of the Geologic Mapping Section, and the need to understand the earthquake and landslide threat brought the creation of the Geologic Hazards Section and a cooperative agreement with China to exchange research and staff.

Energy-related issues and groundwater, he adds, will always be important, and KGS has stayed busy in those areas, especially with carbon storage research. “We were funded by the State and several private partners to take samples and run tests—the kind of research people dream about—and drill a mile-and-a-half-deep well

in western Kentucky and another nearly a mile deep in eastern Kentucky. Those projects were huge.”

Cobb remembers that KGS had been located in what was known as “the old quadrangle” on the University of Kentucky campus when he came to the Survey (one staffer claimed to be working in what had been his dormitory room in the 1940’s). But Don Haney’s efforts resulted in the new Mining and Mineral Resources Building, and new facilities have made a major difference for KGS.

One measure of the Twelfth Survey’s work, Cobb says, is that more than 400 new publications were produced during that time. “When you look at the variety and the numbers, I hope people will look back and say, ‘Those guys

were busy. They did what they should have done.’”

He hopes his successors will build on the existing databases. “I think the Surveys of the future need to go back into the field in mapping and water monitoring and collecting new data to ensure that we’re up to date with the best possible data.”

He adds that geological surveys must work to make themselves relevant to the people they serve. Many people may not know about KGS services, he says, “but there is a large engineering and consulting community in Kentucky that certainly does know; they virtually live on our website. So I think our relevance is proven by the amount of data we distrib-

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2014 KGS annual seminar draws professionals and academics

A large crowd of at least 145 private-practice and State agency professionals, college professors and students, and KGS staff participated in the 54th annual KGS seminar on May 16 at the KGS Well Sample and Core Library. Ten speakers addressed aspects of the seminar's theme, "Monitoring Kentucky: LiDAR and Other Technologies."

Topics included the use of LiDAR (light detection and ranging) technology for discovering landforms, detecting sinkholes, and mapping floodplains. Archaeologist Carl Shields, of the Kentucky Transportation Cabinet, entertained the audience with a presentation on finding ancient earthworks using LiDAR data that show elevation changes of only a few inches. After the lunch break, presentations were made on technologies for monitoring seismic activity, water levels, and algae in Kentucky streams.

The Kentucky Section of the American Institute of Professional Geologists and the Geological Society of Kentucky also presented their annual awards at the event. Retiring State Geologist Jim Cobb was presented with the Distinguished Service Award from the Geological Society of Kentucky, as well as a Lifetime Achievement Award from KY-AIPG. ❖



Jim Currens, of the KGS Water Resources Section, received the Outstanding Kentucky Geologist Award from AIPG Kentucky Section President Bill Brab during the annual seminar.

KGS to co-sponsor unconventional oil and gas symposium in November

KGS and the UK Center for Applied Energy Research will hold the first Eastern Unconventional Oil and Gas Symposium, November 5–7 in Lexington. The gathering will address a broad range of issues related to energy production from emerging resources. Unconventional energy resource refers to the use of nontraditional methods of oil and gas extraction, or production from rocks not previously thought to have hydrocarbon potential, such as shale and low-permeability sandstone. The boom in unconventional production has been driven in recent years by new technology, such as horizontal drilling and hydraulic fracturing.

"The symposium was conceived to provide an unbiased regional forum for both scientific

and policy discussions related to unconventional energy in Kentucky, and other parts of the eastern United States," says KGS Energy and Minerals Section Head Dave Harris. "Development of unconventional energy resources is controversial, and this symposium will provide facts on issues and best practices."

The symposium will open with a plenary session on November 5, followed by technical sessions the next day and a half. Topics relating to resource extraction will include horizontal drilling, fracture stimulation, regulations, water issues, pipelines, induced seismicity, and geology. Impacts on regulated utilities, development of natural gas vehicles, sustainability, and environmental impacts will also be discussed.

KGS and CAER hope to attract oil and gas operators, regulators, and other stakeholders from producing areas of the Midwest and northeastern United States, including the Appalachian, Illinois, and Michigan Basins. A call for papers has been released, and abstracts for talks at the event are due August 15. More information is available at the symposium's website, www.euogs.org. ❖

Jim Cobb retires—continued from p. 4

ute. They live and breathe with our information, especially those consultants and engineers who work in a variety of states. They always say that the Kentucky Geological Survey has absolutely the best website, maps, and data they've seen. I'm proud of that." ❖

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going personality and his love of people and politics," says his successor at KGS, Jim Cobb. "Don never met a stranger. He spoke to everyone and loved to tell stories and joke with people." Friends knew him affectionately as "DC." At meetings, conferences, and gatherings of all types, Cobb adds, Haney would make a point of greeting everyone. He was a follower of politics and personally knew Kentucky's political leadership in Frankfort and Washington, spanning six decades; they knew and respected him, as well. ❖



Mary Ann Russell, of Goshen, Ky., talks with KGS student worker Bailee Hodelka and Warren Anderson of the Energy and Minerals Section about her husband William's collection of dozens of meteorites, which the couple donated to KGS recently. The last part of the collection was donated in early June. William Russell is a retired civil engineer, amateur astronomer, and meteorite collector. For 25 years, he collected specimens that hit many locations around the world, including some found in Kentucky.