



eBULLETIN

MISSISSIPPI GEOLOGICAL SOCIETY

Volume 62

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October 2013

STEVE CRAFT - OCTOBER SPEAKER

**UNCONVENTIONALS TO MAKE U.S.
LARGEST PRODUCER**

SMACKOVER STRATIGRAPHY

CAN FRACKING SAVE THE US ECONOMY?



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PRESIDENT'S LETTER

Neil Barnes

Greetings!

Fall weather has finally broken through! While it is not as cool as it will be, it is a delightful relief! I hope this change gets your juices flowing!

Before getting to Society business, let me share some recent, sad news. Many of us in the Jackson area know Ruth Johnson. Ruth has served many of us over the years. Ruth's son, Dustin, was killed this past week in a gun-related accident. Dustin was a geology major at Mississippi State University and was scheduled to graduate this December. Please remember the Johnson family in your prayers. Ruth has asked that memorials be made to the Boland Scholarship Fund with the plan being to create an "Average Joe" Scholarship. This scholarship would be for those who don't qualify for government aid/scholarships and don't have high grades that would earn them academic scholarships. It would be for students with good grades but not at the top of their class and whose family struggles to send them to college. More about this will be forthcoming.

It doesn't seem right to move on to any other topic.

But we must. Continuing from last month's president's letter in which I laid out a challenge to all of us – the Society's current trajectory doesn't lead us to a robust future but that we are well equipped to navigate this transitional period so long as we are creative and all pitch in with ideas, lots of ideas – I would like to offer as a starting point my top 10 ideas. But before I present them here are the Ground Rules: 1) no criticizing ideas – you won't like all the ideas, some will really be stinkers, but no criticism allowed; 2) an idea doesn't count if it's not communicated – tell one of the officers or send me an e-mail; and 3) the more ideas the better – to be creative you have to stretch – by focusing on sheer number of ideas each of us will be stretched to share some half-baked ideas. The first 50 will be easy. But the gems may be in the last 50. So let's get after quantity! Here are my top 10:

1. Develop MGS liaison with universities, non-petroleum geological communities, non-resident companies & governmental agencies
2. Sponsor Imperial Barrel Award competition at universities in the state with Geology departments
3. Update the Redbook
4. Broaden member base by targeting non-petroleum and non-residents geologists
5. Develop a vision for MGS' future
6. Modify luncheon format to provide for "shorts" – 10 minute "memos" about various activities
7. Sponsor DataPages for Geology Departments in the state which want them
8. Arrive at a reasonable and articulate "value proposition" and develop an implementation plan
9. Add content to the Bulletin – such as series on Mississippi Geology, personal experiences in the oil and gas business, etc.
10. Develop new means to communicate with members
11. Be a well-used technical resource for our state policy makers

I know that's eleven but I'm starting to expand the list already! We need everyone to share their ideas. If you're interested in participating in "digesting" the ideas to the workable few please let me know!

On other fronts

I would like to introduce John Ryan to you. John is a geologist with Eco-Systems, Inc. in Jackson. I have known John for years from church. I am delighted that he has agreed to serve the Society by representing the environmental geologists in the state. I look forward to John's insight and leadership. I don't know much about the environmental side of geology but geology is geology, isn't it? It should be quite informative.

The GCAGS was in New Orleans this week. It was good to attend, see folks and listen to some familiar and thought provoking papers. Dr. Brenda Kirkland, Chairman of the Department of Geology at Mississippi State University presented a paper she co-authored with a recently graduated, employed student. While there I attended the GCAGS Board Meeting. The GCAGS, like the MGS, sees the participation declining and is looking at what might be done to reverse this trend. GCAGS sponsors scholarships and has a new, Gulf Coast focused journal. Check out the website - <http://www.gcags.org/.....Enough for now...>

As the Fall weather invigorates us, I hope that some of these thoughts will get your society juices flowing! Happy Fall!

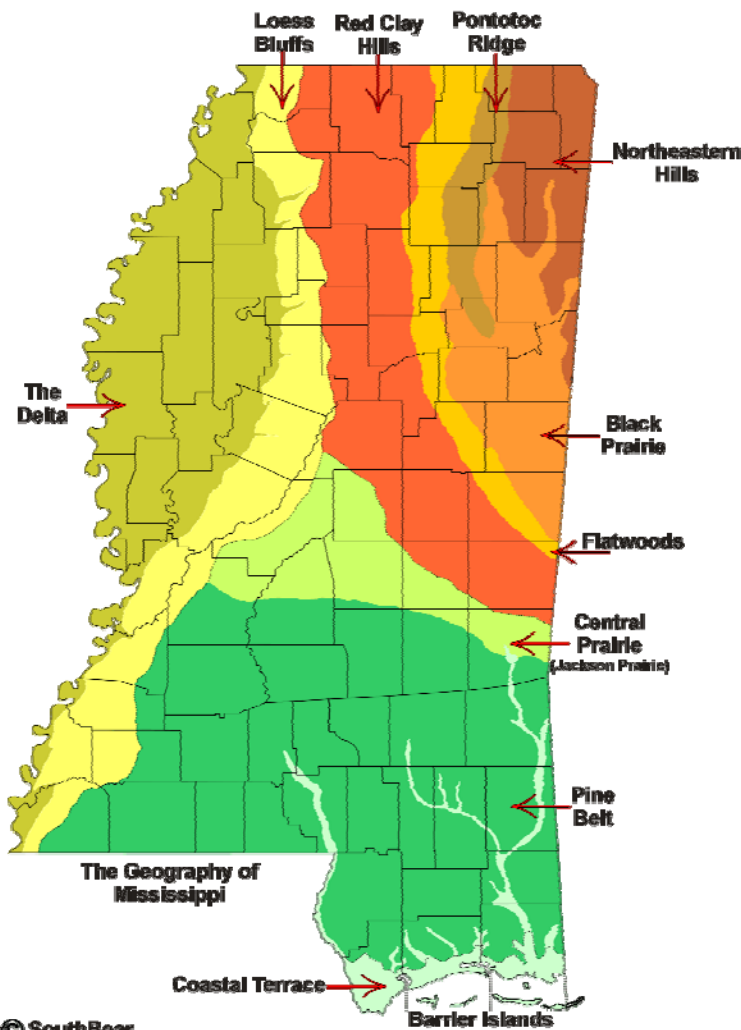
Neil

nbarnes@tellusoperating.com

601-573-6852

2013-2014 MGS MEETING SCHEDULE

| When | What/Who | Where |
|--------------------|---|----------------------------|
| September 12, 2013 | Fall BBQ | Jackson Yacht Club-5:30pm |
| October 10, 2013 | Steve Craft Recent Activity: Smackover South Alabama | River Hills – 11:30am |
| November 22, 2013 | M SOGB | River Hills – 11:30am |
| TBD | Christmas Party and Dance | TBD |
| January 9, 2014 | TBD | River Hills – 11:30am |
| February 13, 2014 | TBD | River Hills – 11:30am |
| March 13, 2014 | TBD | River Hills – 11:30am |
| April 10, 2014 | Boland Scholarship Awards | River Hills – 11:30am |
| May 8, 2014 | Spring Fling | Jackson Yacht Club– 5:30pm |



OFFICERS MEETINGS

August 4, 2013

September 10, 2013

October 8, 2013

November 20, 2013

TBD

January 7, 2014

February 11, 2014

March 11, 2014

April 8, 2014

May 6, 2014

SOUTH ALABAMA OIL AND GAS: 2013

FINDING NEW FIELDS

KEYS TO SUCCESS

Introduction / Transportation / Data / Drilling / Algorithms

THE PLAY

Evolution / What / Where / How / Recent / Imaging / Remaining



resume

The Craft Companies are a collection of companies, now 50 strong. Steven H. Craft manages all of the companies with 30 years of experience in oil and gas exploration and operations. Craft received his BS in Geology from the College of Engineering at The University of Southwestern Louisiana in Lafayette in 1984, followed by graduate studies in carbonates at the University of New Orleans until 1986. He began his career in 1983 with Craft Petroleum Company, Inc., an independent exploration and operating company established in 1967 by his father, Wyatt E. Craft (1930-1998), who founded Craft Petroleum after he graduated in geology from Mississippi State University and after working a couple of years with Amoco. Steven H. Craft's individual expertise is in finding, capturing, and producing new, high grade oil fields, field extensions, and new reservoirs across the Mesozoic Formations of Mississippi and Alabama. Finding techniques are based in seismic supported depositional dynamics of both carbonate and clastic systems, and is currently funded through the various Craft Companies, and numerous partners. During the past 6 years, Craft has completed 72 newly productive oil wells from 20 New Reservoir Discoveries (14 of the 20 generated by Craft), being an average of 1 new oil field per quarter and 1 new oil well completion per month. These 72 wells have an avg. IPF of 309 BOPD and avg. comp. well AFE of \$2.5 Million. Current drilling output includes 15-20 new prospects drilled per year plus development wells, on the back of aggressive 'out of the box' strategies and reinvestments of capital.

TheCraftCompanies

Steven H. Craft, Manager

ph.601.594.4400 email.stevecraft@att.net

TheDensfordCompanies

Tye Densford, Geoscience / Administration

ph.601-454-9373 email.tyedensford@gmail.com

Julie Den-Herder, Accounting / Controller

Greg Ortego, Engineer / Properties Oversight

Andrew Kennedy / Geotechnical Support



FALL BBQ

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**Thanks again to the following sponsors for their generous donations
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NEWS

Unconventionals to Make US Largest Producer



The head of the Energy Information Administration (EIA), the data collection arm of the Energy Department, projects that the U.S. will become the largest producer of crude oil and natural gas in the world this year if it hasn't done so already.

"This is a remarkable turn of events," said Adam Sieminski, the head of the Energy Information Administration. "This is a new era of thinking about market conditions, and opportunities created by these conditions, that you wouldn't in a million years have dreamed about not long ago."

Saudi Arabia remains the world's largest producer of crude oil and related liquids. As of July, Saudi Arabia was producing 11.7 million barrels per day (bpd), according to the International Energy Agency. Russia was second, at 10.8 million bpd, with the US third at 10.3 million bpd.

While oil production in Russia has remained flat the past few years, U.S. oil production has grown and erased a 3 million barrel per day difference. The amount of crude from the Bakken oil field in North Dakota, the Permian Basin in West Texas and the Eagle Ford shale formation in South Texas continues to rise rapidly.

The Russian government predicts oil output will remain flat through 2016, while natural gas is up three percent. If Russia's oil and natural gas wells flowed at the same rates as they did in 2012, total US production would have surpassed them on a daily basis this summer, according to EIA.

In 2012, the U.S. produced more natural gas than Russia for the first time since 1982. The rise in oil and gas production in the U.S. has reduced imports and closed the huge trade deficit. Oil imports are down 32 percent and natural gas imports declined 15 percent. Russia's natural gas exports have declined because of economic conditions in Europe and increased competition.

Increased competition in global crude oil markets have hurt Russia's oil exports, too. Russian energy analysts believe that the increase in U.S. oil and gas production will not last very long. They believe the increased production from shale will run into trouble. The head of OPEC also cast doubt on increased U.S. production recently.

Everyone in the oil and gas industry in the U.S. knows that shale drilling and production is very expensive. If exploration and production cannot be profitable, activity will decline. The industry has witnessed the decline in natural gas activity because natural gas prices have fallen and costs have not followed suit.

Just as important as price is action taken by government regulators that could drive up costs dramatically or prohibit drilling activity altogether.



GEOLOGY POST

Smackover

A Conceptual Model for the Sequence Stratigraphy of the Smackover Formation in North-Central U.S. Gulf Coast

Heydari, Ezat¹ and Baria, Lawrence²

¹Department of Physics, Atmospheric Sciences, and General Science, P.O. Box 17660, Jackson, Mississippi 39217; ezat.heydari@jsums.edu

²Jura-Search Inc., P.O. Box 997, Jackson, Mississippi 39205; bearlear@bellsouth.net

Abstract

Three sequences are recognized in the Smackover Formation in the north-central portion of the U.S. Gulf Coast (Mississippi, Louisiana, and Arkansas). In ascending order, they are here named the Smackover “C”, the Smackover “B”, and the Smackover “A” sequences.

The Norphlet Formation forms the lowstand systems tract of the “C” sequence. A rapid relative sea-level rise initiated the Smackover Formation part of the “C” sequence but left little to no transgressive systems tract deposits. Over 600 ft (183 m) of carbonates of the Smackover “C” sequence were deposited on a ramp and can be interpreted as a beach-to-basin prograding highstand systems tract to possibly a forced regression systems tract. The modern analog for the deposition of “C” sequence is the Persian Gulf.

The “C” sequence ramp was developed into a platform with a well-defined shelf margin. Continued relative sea-level fall exposed the “C” sequence carbonates to meteoric processes. Rivers extended to the shelf margin leading to deposition of sandstone turbidites in the basin forming the lowstand systems tract of the overlying Smackover “B” sequence. Again, the subsequent rapid sea-level rise left little to no transgressive systems tract deposits in the “B” sequence. Up to 600 feet (183 m) of wackestone-to-grainstone of the Smackover “B” sequence formed as prograding marine shoals along the shelf margin as highstand systems tract to forced regression systems tract showing well-developed clinofolds character on some seismic lines. Shoals ranged 20–80 m in height and 1–5 km in length. The modern analog to the “B” sequence is the marine sand belt system of the Bahamas.

The subsequence relative sea-level fall exposed the Smackover “B” sequence to subaerial processes. Adjacent to major rivers, sandstone turbidites were deposited in the basin forming the lowstand systems tract deposits of the overlying Smackover “A” sequence. The 70 foot-thick (21 m) wackestone-to-grainstones of the “A” sequence formed as isolated shoal along the shelf margin.

A relative sea-level fall at the end of the “A” sequence deposition exposed the Smackover platform to meteoric processes. The overlying Buckner sequence deposited as a transgressive systems tract during the subsequent sea-level rise forming a blanket of evaporite covering all three Smackover sequences. The Smackover and Buckner formations do not seem to be time equivalent in this model.



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I would like to add more content from the industry and our schools.

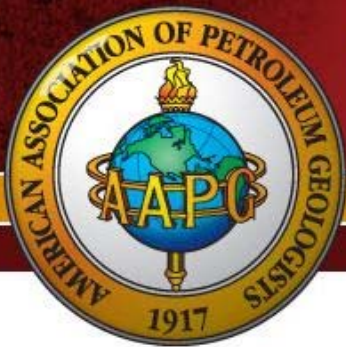
Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

mcaton@tellusoperating.com

Thanks,

Matt Caton
Editor



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October 14-18, 2013 Houston, Texas

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To register for the Fall Education Conference, [use this form](#) or contact the [AAPG Education Department](#).

For information on group registrations, [send email](#) or call 1-888-338-3387 (US) or 1-918-560-2650.

*Your five-day badge can be transferred to a friend or colleague if you can't come all five days.

There will also be an AAPG Bookstore and information on upcoming courses, field seminars, research conferences and meetings.

[Download flyer including registration form and course details.](#)



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IN MEMORIAM

Ernest Russell

Tuesday, October 8, 2013 · Starkville Daily News · Page 5

Obituaries

Ernest Russell

Dr. Ernest Russell died in his home Sunday October 6, 2013 in the company of his oldest son, Rett Russell, and caregiver Louise Cole. Dr. Russell was Geology Professor Emeritus, Mississippi State University, Lieutenant Colonel retired, United States Air Force, and was born on April 16, 1923 in Jackson, MS. He was a decorated fighter pilot from the European Theater in WWII. He follows his beloved Dixie Allison Evans Russell of Sunnyside Plantation whom he will join at rest in OddFellows Cemetery in Starkville.

He was a husband, father, scientist, and friend. He lived a rich life partially recounted in a book "A Mississippi Fighter Pilot in WWII."

He was a man of wisdom, passion, and curiosity and was also an avid horticulturist.

He is survived by his three sons: Ernest Everett Russell, Jr. of Portland, OR, Drs. William Evans and Debbi Russell

of Baton Rouge, LA, and Allison Hardy and Diane Russell of Rock Hill, SC. He also leaves behind ten grandchildren, many family, friends, and professional colleagues.

We will celebrate his life and memories at the Episcopal Church of the Resurrection, Starkville, MS. Visitation will be in the church fellowship hall from 12:00 until 2:00 with the service starting at 2:00. Graveside services will follow.

He would desire that honorarium in his memory be made to Palmer Children's home of Columbus (www.Palmerhome.org). He and Allison believed in the good work done there.

He would also encourage you to hug your family and express your love to them often as he did with us. We will miss him.

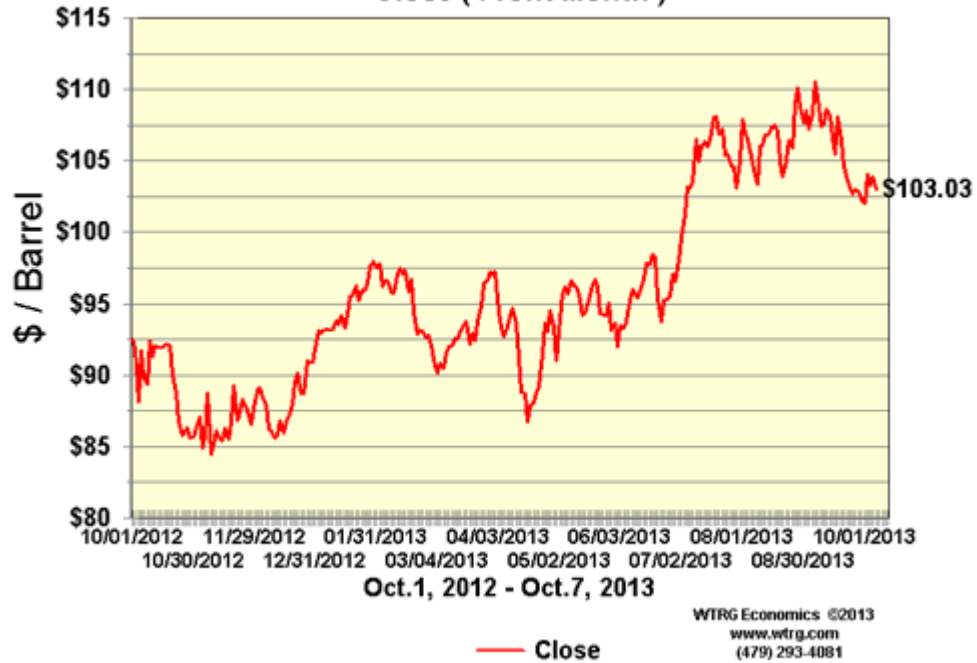
You can go online and sign our guest register at www.welchfuneralhomes.com.



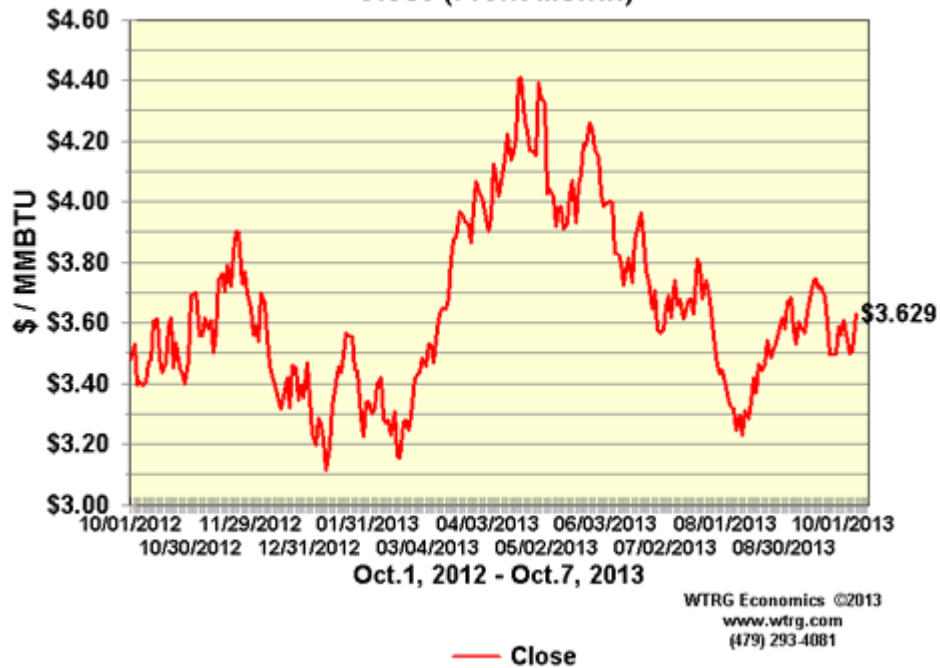


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ARTICLE OF THE MONTH

Can Fracking Save the US Economy?

America's government may be closed, but its energy sector is open for business. We are overtaking Russia as the world's largest oil and gas producer.

Other countries with large reserves of natural resources have governments that are functional, yet their institutions and technology limit their production. Russia's Kremlin is open, Saudi Arabia's King Abdullah reigns supreme, and Chinese president Hu Jintao has his country firmly under control.

But America is [producing more oil](#) because private sector brains trump government bureaucracy — and much of America's oil is on private lands.

Despite delays over permits, the oil and gas industry has been able to outperform its foreign counterparts.

The new oil and gas are being produced through a technique known as hydraulic fracturing, where water and chemicals are injected at high pressure into shale rock. Usually, this method is combined with horizontal drilling, in which the drill turns off the vertical to extend horizontally through the rock formation, allowing more of it to be tapped. Today, many states are bustling with this “unconventional drilling.”

That American oil and gas production are booming is no thanks to Uncle Sam.

Oil and gas production on U.S. federal lands declined during fiscal year 2012, the latest year available, according to the U.S. Energy Information Administration. Only 17.1 quadrillion British thermal units were produced in 2012, down 4% from 2011, and the lowest level in 10 years.

In fiscal year 2012, 4.3 trillion cubic feet of natural gas came from federal lands, almost a third less than in 2008, according to the EIA.

According to data collected by the Institute for Energy Research, federal drilling permits have become more difficult to acquire. Between fiscal years 2006 to 2008 and 2009 to 2011, the number of permits approved fell from 20,479 to 12,821. Moreover, between 2005 and 2011, the time it took to acquire such a permit rose from 154 days to 307 days.

To get a better idea of how the federal government is slowing down the process, an August [study](#) by the U.S. Government Accountability Office found that applications to the Bureau of Land Management for drilling permits declined by 50% between 2007 and 2012. Plus, the Bureau said in an internal memorandum that it has not been able to process applications within a month, as is required to do by law.

Fortunately, state governments are faster. It takes 10 days in North Dakota to acquire a permit to drill on state lands and 14 in Ohio. The shale boom is happening on private lands at the same time as production is declining on federal properties.

In North Dakota, where production is thriving in the Bakken region, only one well has been drilled on federal property. The reason that North Dakota can produce so much oil and gas is that the shale formations are on private property, so permitting is far simpler.



ARTICLE OF THE MONTH

Can Fracking Save the US Economy?

Lynn Helms, Director of North Dakota's Department of Mineral Resources, predicted on September 26th that the State's daily oil production would double by 2017 — to 1.6 million barrels. North Dakota produces 874,460 barrels of oil and over 800 million cubic feet of natural gas daily.

Per capita real GDP grew by 11% in North Dakota between 2011 and 2012, the highest in the nation. The state's unemployment rate is now 3%, the lowest in the nation.

At Eagle Ford, in Texas, oil production is forecast to reach 1 million barrels a day in 2014, peaking at 1.8 million barrels a day in 2022. No need for government help in Eagle Ford.

Texas is also home to the Permian basin, another private sector triumph, which is producing 1.4 million barrels a day, and is forecast to reach 2 million barrels a day in five years.

Pennsylvania, home to the Marcellus Shale, has allowed companies to extract its natural gas. Pennsylvania counties with hydrofractured gas wells have performed better in terms of income growth and employment than those which have no wells. The more wells a county contains, the better it performed. [My study is available here.](#)

Between 2007 and 2011, per capita income rose by 19% in Pennsylvania counties with more than 200 wells, by 14% in counties with between 20 and 200 wells, and by 12% in counties with fewer than 20 wells. In counties without any hydrofracking wells, income went up only by 8%. It is important to note, too, that counties with the lowest per-capita incomes experienced the most rapid growth.

Cheap energy is attracting more manufacturing back to America. Shell is considering building a multibillion dollar petrochemical plant in Pennsylvania.

Since 2009, the German chemical company BASF has invested more than \$5.7 billion into North America, including a formic acid plant under construction in Louisiana. BASF officials say that energy prices in America are lower than in Europe, where fracking is discouraged.

Other European countries planning to invest in America due to low energy prices include Austrian steelmaker Voestalpine (an iron-ore processing plant in Texas), South Africa-based Sasol (a natural gas to diesel conversion plant in Louisiana) and France's Vallourec (steel production in Ohio).

Foreigners are no doubt laughing at America's dysfunctional government. But our private energy sector is unparalleled, and is the key to future economic growth.



BOLAND SCHOLARSHIP WATCH

Faculty & Students,

This is a new year and the Mississippi Geological Society along with the Boland Scholarship Fund would like to remind you that we want to honor the most outstanding overall students for the 2013-2014 year.

Each year, the Boland Scholarship awards 1 student from each institution a check that rewards students for their hard work and dedication to the Geosciences and their community.

We look forward to a great year and hope to see you at our monthly meetings.

Best Regards,

Matt Caton
Editor



THE UNIVERSITY OF
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GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

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<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

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www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terrasrver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



MGS HONORARY MEMBERS

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MEMBERSHIP APPLICATION / RENEWAL FORM

MISSISSIPPI GEOLOGICAL SOCIETY

P.O. BOX 422, JACKSON, MISSISSIPPI 39205-0422

2013-2014

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(Note: Please contact Steve Walkinshaw at (601) 607-3227 or mail@visionexploration.com for details concerning placing your ad on the MGS web site.)

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