

Volume 46, July 2015

Arkansas  
Professional

# ENGINEER

Official Magazine of the American Council of Engineering Companies of Arkansas & the Arkansas Society of Professional Engineers

## Engineer of the Year

Under Larry Stephens' leadership, Mid-South Engineering has had no need for salesmen. The firm, which specializes in wood products, lets its work sell itself.

### Also inside:

- Gregory Sorenson is Young Engineer of the Year
- UALR hires new engineering dean
- Rep. Bruce Westerman, an engineer in Washington
- ASPE Annual Conference



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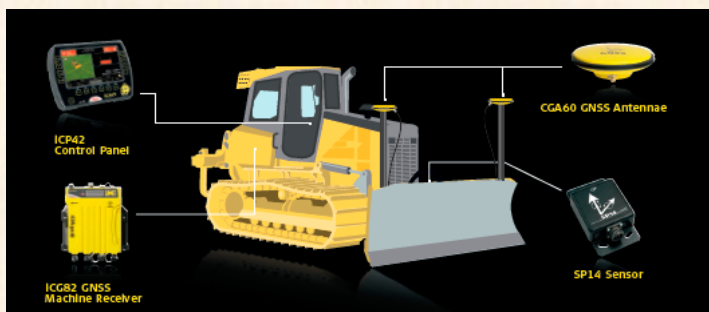


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# Arkansas Professional / ENGINEER

Official Magazine of the American Council of Engineering Companies of Arkansas & the Arkansas Society of Professional Engineers



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# Amazing, and bittersweet



**Brad Hammond**  
ACEC Immediate Past President

Some words are used too often. For example, “amazing” often describe something that’s only remotely positive, while by definition it should describe only the extraordinary. And when people talk about something ending, such as a term of service, they often use the word “bittersweet” regardless of its appropriateness. My term is ending, and I must actually describe the experience as bittersweet. Of course, as an engineer I will provide adequate justification regarding what was bitter and what was sweet.

Since I thoroughly enjoyed my service, ending it is somewhat bitter. There is so much more that I would like to accomplish for the organization. Writing these articles even awakened the right side of my brain, and I will miss this particular excuse to keep that side awake. Plus I will miss my frequent correspondence with our amazing executive director, Angie Cooper. I and the rest of the board will also miss Bert Parker, P.E., whose time on the board is ending. Bert provided a wealth of wisdom and amazing guidance during his term, and I consider him a friend as well as a colleague.

But the end of my term is also somewhat sweet. Being president is a huge responsibility that requires much time and effort, and a respite is welcome. Plus I can remain on the board for one more year as past president, which means I can still contribute and watch as my successor, Dee Brown, P.E., helps ACEC/A achieve even higher success. I know Dee will do an amazing job – certainly better than yours truly. In addition, we also have an amazing board in place for next year.

Now let’s talk about ACEC/A’s year. The only bitter aspect is that there’s so much more to accomplish. But it was a sweet year – in fact, amazingly sweet.

We had an amazing experience in Washington, D.C., during the ACEC Annual Conference in April. We met with each member of Arkansas’ congressional delegation and received warm welcomes and positive assurances regarding industry issues such as transportation funding, energy policy, and potential future tax reform measures that help instead of hurt engineering businesses. Our experience in D.C. and reputation with ACEC/PAC was enhanced by the fact that Arkansas has met its PAC goal for eight consecutive years thanks to our amazing National PAC champions, including our current champion, Jeff Geurian, P.E.

In state politics, we had a successful legislative session due to our amazing Government Affairs Committee, including Chair Dennis Ford, P.E., and our amazing lobbyist (a.k.a our executive director). We coordinated with the architects to include engineers in Act 534, which provides architects and engineers with immunity from damages for personal injury, death, property damage or other losses related to errors or omissions when performing a voluntary professional service. ACEC/A also took appropriate action to address other bills that were defeated, including one that could have caused confusion regarding professional licensing requirements and one that could have restricted an engineer’s ability to specify certain types of piping.

In other sweet news, we finished our sixth Emerging Leaders program, which has gotten such amazing reviews that we will add sessions next year. It is also worth mentioning that our board went paperless, and we are sharing files through Dropbox, all of which have increased efficiency and reduced operating costs. In fact, our association is in strong fiscal health, with a proposed budget for next year that projects a surplus and a transfer to reserve.

I would like to take this opportunity to thank all of our member firms for allowing me to serve as your ACEC/A board president. For me, the end of my term is indeed both bitter and sweet, and I am looking forward to amazing years to come for ACEC/A. Did I say the word “amazing” too often? Well, at least I meant the true meaning of the word.

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# Words matter



**Rob Bullen**  
**ASPE Past President**

Everyone knows that engineers deal with numbers and are supposed to be good with them. We should be, as numbers are the basis for a lot of our work, regardless of discipline. Load-bearing capacity, stress, expected life, cost, return on investment – all are things that we calculate. But what about our words? We are not considered to be the eloquent speakers that some are, such as politicians or salesmen. We are more factual and cut and dry. “Yes” means yes, and “no” means no. However, I believe that there is a whole lot more to it.

We all know the importance of wording in contract language (or at least we think we do), but what about the rest of our words? Let’s look at a few of the facts.

We are the engineers, and as such are the professionals in our field.

Our clients or customers come to us because we have knowledge and expertise that they need.

We have spent years learning the details of our work.

We know the assumptions (yes, I know the danger of this word, but it is a reality) that we make in completing our work.

We know the factors of safety, the margins of error, and the precision of the information that we are basing our work on.

And most importantly, our clients rely on us and trust our answers ... literally with their lives.

It is our duty and our responsibility to ensure that they know what they are rely-

ing on and trusting in. We have an obligation to clearly communicate a whole lot more than just a number or say, “This is what it takes.” In doing so, we have to remember that our clients do not have the benefit of knowing our thoughts, or of our years of education and experience.

I was once told and still believe that, “The most dangerous thing is not knowing what you don’t know.” Part of our responsibility is to ensure that, to the greatest degree practical, our clients are informed and don’t face this dilemma. In our contracts, this means clearly stating which considerations are included, and which are not. In our designs and reports, it means clearly stating what assumptions have been made, where our data comes from, and how exact our answer is.

My point is that sometimes how we communicate this is just as important as what our design, solution or answer is. Let’s remember, our clients haven’t necessarily earned a degree in engineering. They may not know what a modified proctor test is, or why they need a stress analysis on a structure, or what these ground and arc fault breakers are for. What they do know is they trust us and our judgment and that we are the professionals. We don’t need to give each of them a crash course engineering degree. We need to give them what they came to us for: professional engineering services. A very important part of being professional is respecting who our clients are, what they do know, and what they don’t know.

In closing, let’s keep this in mind:

When our job is done, we provide a good and trustworthy design, solution or answer for our clients. When our job is done well, we not only provide that design, solution or answer, but we also provide the communication and information that adds a degree of trust and security in that design ... and in us.

## In the News

### ACEC/A, ASPE name new officers for 2015-16 year



Brown

Dee Brown, P.E., an electrical engineer and principal of Brown Engineers, is ACEC/A president for 2015-16. Brad Peterson, P.E., CFM, LEED AP, of Crafton Tull is ASPE's 2015-16 president. The two began their terms July 1.



Peterson

Other ACEC/A officers are: **president-elect**, Andy Dibble, P.E., Mickel, Wagner, Coleman; **secretary**, Mike Burns, P.E.,

Crafton Tull; **treasurer**, Byron Hicks, P.E., McClelland Consulting Engineers; **state director**, James Montgomery, P.S., B&F Engineering; **state director**, Stephen Beam, P.E.; Burns & McDonnell; **national director**, Dan Williams, P.E., Garver; **immediate past president**, Brad Hammond, P.E., McGoodwin, Williams and Yates.

Other ASPE officers are: **president-elect**, Alan Pugh, P.E., CFM, city of Springdale; **secretary-treasurer**, Paul Speers, P.E., Entergy Arkansas; **state director**, Fred Harper, P.E., Michael Baker International; **national director**, Clint Bell, P.E., CWB Engineers; and **past president**, Rob Bullen, P.E., Mid-South Engineering Company.



### Former Garver president Hannah dies at age 80

Former Garver President Ted Hannah, P.E., 80, of Little Rock, died May 9.

Hannah joined the company in 1963 and served as president from 1993-98. He designed and managed I-440 over the Arkansas River; I-49 in Washington County; various projects in Arkansas, Oklahoma, Mississippi, and Tennessee; and projects for several districts of the Army Corps of Engineers and the Indiana Port Commission. The Arkansas Society of Professional Engineers named him Engineer of the Year in 1994.

He retired from Garver in 2001 after spending nearly four decades serving as an engineer, leader and mentor.

"Even though he was no longer working with us, his spirit has stayed with Garver since his retirement, and it will continue to do so after his death," President and CEO Dan Williams said in a news release.

Born April 29, 1935, Hannah was an Eagle Scout who received his Bachelor of Science in Civil Engineering in 1957 from the University of Mississippi and his Master of Science in Engineering from the University of Arkansas in 1967. He was commissioned by the Navy in June 1957 and attended flight school in Pensacola, Florida. After six years of active duty, Hannah joined the Naval Reserve, retiring at the rank of captain after completing 300 carrier landings in the A-4. One of the jets he flew is on display at the Arkansas Air & Military Museum at Drake Field in Fayetteville.

He enjoyed golfing, flying, fishing, bird hunting, water and snow skiing, traveling with his wife, Lorraine, and especially hosting his five daughters on an annual trip to Lake Tahoe, California, and other locations.

### Garver's White in NWA Business Journal's top list



White

Northwest Arkansas Business Journal recently named Garver's Fayetteville Aviation Team Leader Adam White, P.E., to its Fast 15 list. The list recognizes the best and brightest up-and-comers in the region, regardless of industry.

White began an internship with Garver in 2006 and joined the firm full-time after finishing his degree at the University of Arkansas. According to a Garver press release, he has been instrumental in the recent success of the Fayetteville Aviation Team.

"Adam exemplifies what we look for in an employee at Garver – he's knowledgeable, he works hard, he's got character, and he values the friendships he inevitably develops with his clients and his coworkers," said Director of Aviation Mike Griffin.





Triche



Vinyard



Lesso



Osweiler



Anderson



McGraw

## MCE announces staff changes, achievements

McClelland Consulting Engineers has announced a number of staff changes and promotions.

• Adam Triche, P.E., was named an MCE partner. Triche has worked in MCE's Little Rock office for seven years and holds a bachelor's degree from Louisiana State University.

• Matthew Vinyard, P.E., was named a senior associate. Vinyard also has worked in MCE's Little Rock office for seven years and holds a bachelor's degree from the University of Arkansas.

• Matt Bienvenu has been promoted to laboratory manager of the Little Rock environmental lab.

• MCE's Fayetteville office has hired Adam Lesso, P.E., who is working with the development group; and William Fellows, PLS, who is working in the Survey Department.

• Adam Osweiler, P.E., recently passed his P.E. exam. Osweiler, who has been with MCE more than three years, received his Bachelor's and Master's degrees in Civil Engineering from the University of Arkansas.

• Eric Anderson, P.E., passed his P.E. exam in the state of Oklahoma. He has been with MCE for 11 years and works in the Fayetteville office. Anderson received a bachelor's degree in both geology and civil engineering and also a master's

*Continued on next page*



CONGRATULATIONS,

**SCOTT  
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## In the News (Cont'd)

degree in geology from the University of Arkansas.

• Rick McGraw, RLA, has passed all four sections of the LARE exam and is now a registered landscape architect. McGraw has been with MCE's Fayetteville group more than three years and received his bachelor's degree in landscape architecture from the University of Arkansas in 2006.



### MCE completes Crossett port project

McClelland Consulting Engineers, (MCE) recently completed the Crossett Port Dolphin project in Crossett on the Ouachita River in the Felsenthal National Wildlife Refuge area.

The design required a reinforced concrete abutment structure at the Crossett Port to allow barges to safely enter and load and unload material without damaging the existing structure.

The city-owned project is being overseen and maintained by the Crossett Economic Development Foundation (CEDF). It was funded through the Southeast Arkansas Economic Development District (SEAEDD), along with the Delta Regional Authority (DRA). MCE coordinated with Mayor Scott McCormick and representatives from SEAEDD and CEDF. The contractor, Ideal Construction, completed the project well within the allotted 120 days.

The port was allowed to accept material from barges during construction, so MCE's coordination between the port officials, the contractor, and the barge's schedules was critical.

### Crafton Tull's Kelso enters academy

Crafton Tull's Little Rock office manager, Jerry Kelso, P.E., was inducted into the Arkansas Academy of Civil Engineering at a dinner held in Springdale April 24.

The AACE serves in an advisory capacity to the University of Arkansas Department of Civil Engineering, helps raise funds for civil engineering student scholarships, and recognizes the achievements of civil engineers around the state. Jerry joins a group of former and current Crafton Tull inductees, including: Bob Crafton, P.E.; Lem Tull, P.E.; Gene Reese, P.E.; Everett Balk, P.E.; Tom Hopper, P.E.; Dan Brown, P.E.; Matt Crafton, P.E.; Mike Burns, P.E.; and Chuck Mitchell, P.E..



Kelso

### FTN Associates adds engineer, geologist to staff

FTN Associates has hired Jeremy Brooks, P.E., as a civil engineer.

Brooks is a graduate of the University of Arkansas with a B.S. in Civil Engineering and an M.S. in Civil Engineering (Geotechnical Focus).

Brooks has more than 10 years of professional experience as a consulting engineer in the areas of airfield engineering; municipal roadways and stormwater drainage; large-scale municipal and commercial land development design



Brooks

and feasibility studies; geotechnical site investigation and geotechnical design for airports, roadways, levees, and commercial, industrial and governmental developments and construction inspection services.

He most recently worked with Grubbs, Hoskyn, Barton & Wyatt as a project engineer and prior to that was a project manager for Garver.

FTN also has hired Alex Hamlin as a geologist/hydrogeologist. Hamlin is working out of FTN's Fayetteville office and will be assisting with field investigations and sampling. He is a recent graduate of the University of Arkansas at Fayetteville with an M.S. in Geology.

Hamlin resides in Fayetteville and enjoys hiking, camping, taking his dog to the park, and reading. He is a North Little Rock native.

FTN is a water resource and environmental consulting and engineering firm that is headquartered in Little Rock and has branch offices in Fayetteville, Baton Rouge, and Jackson, Mississippi.



Hamlin

### Hawkins-Weir's Benzing named to health committee



Benzing

Aaron Benzing, P.E., a principal of Hawkins-Weir Engineers, has been appointed to the Arkansas Drinking Water Advisory and Operator Licensing Committee by the Arkansas Board of Health. The seven-member committee meets quarterly to review the water



operator licensing program and advise ADH's engineering department on other drinking water issues of concern to the state.

His term will be for six years beginning July 1, 2015 and ending June 30, 2021.

## ACEC/A ASSOCIATE/ AFFILIATE MEMBERS

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ACEC Health Life Trust

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BancorpSouth Insurance Services

BT Environmental, Inc.

Environmental Technical Sales, Inc.

Greyling Insurance Brokerage

Hanson Pipe & Precast

Jack Tyler Engineering of Arkansas

McGeorge Contracting

Snyder Environmental & Construction

## Brown's Geurin a P.E.; Moorehead earns certification



Geurin

Brown Engineers electrical engineer Scott Geurin, P.E., passed the eight-hour NCEES PE exam in April.

He had earned his LEED AP BD+C credential

for sustainable building design and construction from the U.S. Green Building Council in 2014.

Mitchell Moorehead, a computer engineer at Brown, was recently trained, tested and certified by Inductive Automation™ for Ignition™ system design and implementation. Moorehead joins Chris Gelé, CAP, and Sam Vandiver, P.E., as one of three Certified Ignition™ Integrators



Moorehead

on staff at Brown Engineers, which maintains Certified Premier Integrator status, the highest expertise rating available for Ignition™ software.

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Wastewater Systems



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## ACEC/A Member Spotlight

# PMI helps clients clean, stay clean

## Remediation, reclamation among the firm's specialties

If a company or municipality wants to clean up a mess, or keep one from happening, it can call PMI (Pollution Management, Inc.).

The consulting firm offers a range of services. Those include environmental remediation, wastewater treatment design, regulated storage tank design and closure, and phase 1 and phase 2 environmental assistance, where it assesses property for a potential buyer to see if issues exist.

"We do design on the front end, not just on the back end," said Doug Ford, P.E., vice president and principal engineer.

PMI was started in 1988 by attorney Tom Jones and geologist Chuck Richesin, P.G. It has grown to employ 27 in its Little Rock office and four in its Springdale office. Its four engineers work in Little Rock.

The firm's remediation clients usually ask it to work below ground where problems can't be seen. That means the firm must assess problems thoroughly and, Ford said, "get into all the pieces of dirt, as many pieces of the puzzle as you can to try to determine the best method to attack the problem."

Once that's done, the firm then has to work with the client. Often, it has to be the bearer of bad news. Sometimes the first solution isn't practical.

"Sometimes you do have to look for alternatives because money is always a part of the equation," he said, "and sometimes you have to look for alternatives that will work and fit within the pocketbook, and then sometimes the alternatives are still costly, and that presents a challenge to the client. But the regulations kind of drive that, what you can and can't do."

On the front end, Brad Wingfield, P.E., a principal at PMI, leads design on wastewater treatment facilities for municipalities including the cities of Perryville and Brinkley, and for industries including Entergy and natural gas exploration company Southwestern Energy. On the back



**PMI PROJECTS.** Founded in 1988, PMI employs 31 people, including four engineers, at offices in Little Rock and Springdale. It provides a variety of services. Top photo, a hazardous waste closure completed by PMI in compliance with the federal Resource Conservation Recovery Act. Middle photo, another PMI project, the primary clarifier at the Perryville Wastewater Treatment Facility. Bottom photo, an aeration basin at Perryville.

"We have a really good relationship with ADEQ and EPA," Ford said. "We trust those guys, and I think they trust us. We know that they're trying to do their best to keep the environment as clean as possible, and we respect that. Most all of our clients do the same. I don't know that I've ever had a client say, 'No, I'd rather just contaminate, take the chances.' People just don't

do that anymore."

Ford said his clients try to be responsible, keep the state clean, and meet regulatory requirements.

"I just think the industry and the folks in Arkansas really respect the state, want to do the right thing in keeping the environment clean," he said.

end, among its recent reclamation projects was the \$3.2 million closure of a Lion Oil refinery landfill and the design of a \$2.5 million Lion Oil hazardous waste landfill. Both of those jobs were required by the federal Resource Conservation Recovery Act.

The firm works in close concert with state and federal regulators.



## Engineering Marketplace

### ICM touts trenchless pipe renewal method

A new trenchless method of renewing culverts and storm sewers without costly pipe replacement is gaining momentum, said Bruce McFadden of Improved Construction Methods.

McFadden said the method addresses prob-



lems that occur when metal pipes rust and concrete pipes weaken. As a result, the soil above them leaches into the space, causing the highway above to settle.

In the past, the solution has usually been to replace the pipe, but a new method involves shooting an expansion grout into the area where problems are occurring to prevent soil leakage and then spraying a coating inside the culvert to give it a new surface.

McFadden said ICM has already completed one such project in Tennessee where multiple repairs had been required on a highway above the culvert.

### BancorpSouth growing engineering services team

BancorpSouth has added two new members to its Professional Liability team that provides risk mitigation to engineers, architects and others.

Tiffany McCormick of Little Rock previously worked with general business clients along with aviation clients and banks. Prior to that, she was an account manager for mortgage brokers and municipal bond clients.

"I enjoy the stability of it," she said. "I can kind of know what to expect out of my day most of the time."

Brendan Monaghan has written professional liability insurance with other



Monaghan



McCormick

BancorpSouth teams for three-and-a-half years. A former practicing attorney, his original focus was working with attorneys and law firms. He'll continue working with them while working with engineers and architects. "I think it's phenomenal," he said. "It's always a pleasure to work with other professionals who have a passion for their work. My brother-in-law is an engineer."

The Chicago native attended Hendrix College, "fell in love with Arkansas," and has lived in Little Rock more than a decade.

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**TOMMY BOND, P.E.**, of Bond Engineers testifies before legislators about the need to provide more authority and funding to levee boards. Below, Randy Young with the Arkansas Natural Resources Commission testifies.

# Who's in charge of levees? Nobody

Spring flooding reveals lack of oversight, accountability as boards, memories fade

By **Steve Brawner**  
Editor

Many of Arkansas' levees are not being maintained. Taxes are being collected but not being spent for that purpose. No one is overseeing the situation because of state law and federal practices. A legislative audit report said as much in 2009, but little was done afterwards.

Those are some of the takeaways from testimony heard June 24 by the Senate and House Committees on Insurance and Commerce and the Senate and House Committees on Agriculture, Forestry, and Economic Development.

Randy Young, executive director of the Arkansas Natural Resources Commission, said that many of the levees are



whose members have died or grown old, leaving no one responsible for maintaining them. It's unknown how many levees exist and how many are governed by functioning districts.

His agency, and all others, are prohibited by state law from having oversight over the districts. The Federal Emergency Management Agency has a program for certification and accreditation, but in-

no longer managed by anyone. They were built many years ago under the management of independent boards, some of

volvement in the program is voluntary and expensive.

The Bureau of Legislative Audit completed a performance audit in 2009 that came to many of the same conclusions expressed by Young and others at the committee meeting, but little was done then in response.

"We don't know the number of those (not reporting), or where they are," Young said.

Young said taxes are being collected in some nonfunctioning levee districts. In response to questions from Rep. Stephen Meeks, R-Greenbrier, he said he doesn't know how the money is being used.

"I've heard that numerous times during my career is that there are actually taxes being collected, and the only person that knows they're being collected is the attorney who was at one point employed by this group," Jones said.



Young told legislators a process needs to be created to identify nonfunctioning districts, probably at the county level. He said the lack of oversight should be addressed.

Miller County Judge Larry Burgess said that county officials likewise have no authority over the levee boards, which can raise and lower their own assessments. He said an examination of boards' finances in his county revealed financial records with no receipts and a check that a board secretary wrote to himself because he is also an engineer.

"It's almost like a homeowners' association. There's nothing I can do. I mean, I'm not in the loop," he said.

Burgess said he received a call one night that one of the levees might be lost because someone had dug a pit too close to the base.

Tommy Bond, P.E., of Bond Engineers, told legislators he has faced the same issue during his 50 years of working with the Plum Bayou levee board, which cov-

ers Pulaski, Lonoke and Jefferson counties. Unfortunately, neither he nor anyone else had the authority to address the issue with the landowner. With no legal standing, he's been forced to write letters he knew he couldn't back up. He asked legislators to pass laws that would give levee boards some authority over landowners who endanger the levee. He also asked legislators to create an emergency fund from which levees could draw, explaining, "Nearly all the levee boards are strapped for money."

The issue came to light during this spring's flooding events. One of those unmaintained levees failed, leaving land owned by Sen. Jason Rapert, R-Conway, beneath five or six feet of water, ruining about 100 bales of hay.

Rapert, the chairman of the Senate Insurance and Commerce Committee, said he learned that part of the levee had been sandbagged about 25 years prior – his information source being the National Guard members who did the sandbag-

ging. The levee has not been maintained since.

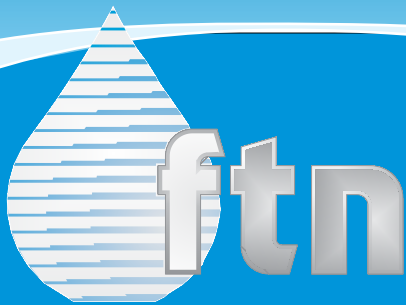
That was the only known instance of an outright failure, said Tony Batey, chief of the Engineering and Construction Division of the U.S. Army Corps of Engineers' Little Rock division. In fact, he said most levees "performed quite well." But the flooding shined a light on the state's unmaintained levee situation.

Batey said that states surrounding Arkansas have the same issues with "losing the thread of responsibility."

Walter Delp, the Natural Resources Conservation Service's Arkansas state conservation engineer, said the situation is similar with some of the state's dams. Of the 208 dams his agency oversees, 138 will reach 50 years of age by 2020, and at that point, his agency will no longer have any legal ability to maintain them. Thirty dams were low-risk when they were constructed, but structures have since been built in the path of potential floodwaters. As with levees, many boards are inactive.

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# Treading Water?



**R**ecord setting May 2015 rainfall (as shown in Table 1) has wastewater collection systems and treatment plants in a stressed condition, beyond their design conditions, across the State of Arkansas. Although these collection and treatment systems are as different and unique as the towns and cities they serve, there is one thing that all collection systems have in common – they all leak. The primary concern with leaking collection systems is they allow stormwater to enter during rainfall events, and can surcharge. This surcharging can result in wastewater overflowing from manholes located at low points in the collection system (referred to as a Sanitary Sewer Overflow, or SSO), and can overwhelm wastewater treatment plants (WWTPs).



*Surcharging can result in sanitary sewer overflows*

In recent years, regulatory agencies have increased reporting requirements and begun strict enforcement of municipalities' National Pollutant Discharge Elimination System (NPDES) Permits for the elimination of SSOs regardless of their cause – capacity or maintenance related. This regulatory requirement typically results in the need for a capacity expansion of the wastewater collection system infrastructure, along with its corresponding expensive price tag.

Historically, strategies to eliminate SSOs were limited to capacity improvements within the wastewater collection system. However, it has been our experience that if these improvements are not expanded to include the private sanitary sewer services, significant inflow/infiltration reductions aren't always realized. Another historical strategy is the construction of an equalization basin at the WWTP site to store the dilute wastewater until the rainfall event subsides, then return these wastewater flows to the plant for treatment. Although this is a proven approach, the treatment of dilute wastewater can cause issues in the operation of the

WWTP and lengthen the impacts of the storm event at the plant.

Newer strategies for dealing with peak flows and the elimination of SSOs include considering equalization storage in the wastewater collection system. This equalization storage can be in the form of open top basins (earthen or concrete-lined), open or enclosed tanks, or in-line storage. State-of-the-art strategies for dealing with peak flows at the plant include offline storage to accommodate biomass transfer during a storm event or various forms of auxiliary treatment. Auxiliary treatment alternatives include both high-rate treatment (HRT) and enhanced high-rate treatment (EHRT). A few examples of EHRT include ballasted flocculation through the use of either

**Table 1**  
Arkansas Rainfall Data (Inches)

	Average May	May 2015
El Dorado	5.05	10.99
Fayetteville	6.04	13.01
Fort Smith	5.47	19.85
Harrison	4.69	10.71
Hot Springs	6.15	12.13
Jonesboro	4.61	7.81
Little Rock	4.87	9.45
Russellville	4.73	10.73
Texarkana	5.09	8.69

\*Surpassed previous rainfall record of 13.67 inches





microsand or magnetite, and filtration including compressible media filtration. An advantage of EHRT is that they require relatively small plan footprints on the plant site, while treating large wet weather related peak flows.

Hawkins-Weir Engineers, Inc. is the engineering industry leader in the State of Arkansas with respect to the design and implementation of peak flow strategies for municipal wastewater collections systems. We have designed \$39.8 million in wet weather projects for wastewater collection systems across the state over the past four years, and have another \$22.3 million presently in design. Some of these projects are briefly described as follows. The Sunnymede project located in Fort Smith, Arkansas incorporated ballasted flocculation treatment with an ACTIFLO process prior to earthen equalization storage in the collection system, and represented the first such application in Arkan-

sas. The Zero Street project located in Fort Smith, Arkansas incorporated the construction of two 5.0 MG equalization tanks in the collection system. Both of these projects also incorporated a peak flow pump station. The Scott Hamilton project located in Little Rock, Arkansas, presently in design, will incorporate a 31 MG concrete-lined equalization storage basin expansion of existing collection system storage.

A favorable 2013 ruling by the United States Court of Appeals for the Eighth Circuit regarding the Iowa League of Cities suit against the Environmental Protection Agency (EPA) has, on its surface, the potential to fundamentally change the way peak flows are treated across the United States. The Iowa League of Cities contended that the EPA's internal wet weather policy was more stringent than required by the Clean Water Act. At the heart of the issue was the EPA's perceived prohibition

on blending. The group contended that EPA limited municipalities' options in dealing with peak wet weather flow and often required that more costly and generally less desirable options be implemented. The Court's ruling in the favor of the plaintiff sought to vacate the EPA's apparent ban on blending, and also asserted that the EPA's attempt to regulate blending or other treatment practices within a WWTP were beyond that Agency's authority. Hawkins-Weir Engineers is working with several of our Arkansas clients to take advantage of this new blending opportunity, presently pursuing permitting through the Arkansas Department of Environmental Quality.

So if your municipality has found itself treading water regarding peak flow issues, please contact Hawkins-Weir Engineers, Inc. at [www.hawkins-weir.com](http://www.hawkins-weir.com) so we can collaboratively determine which strategy is best for you. **HW**



*Sunnymede Wet Weather Flow Management*



*Scott Hamilton Peak Flow Attenuation Facility*



*Zero Street Pump Station*





# An engineer in Washington

Bruce Westerman takes the problem-solving skills he's learned as a P.E. to Congress

By **Steve Brawner**  
Editor

The United States government has a problem: The fuel tax is raising less money for highways at the same time that highway construction costs are rising.

So Rep. Bruce Westerman, R-Arkansas, has proposed a possible solution. Currently, Uncle Sam provides more funding per beneficiary for states to expand their Medicaid populations by adding able-bodied adults than it does for traditional beneficiaries – the disabled and the aged. Westerman says funding for that new population should be reduced to traditional levels. Half of the resulting \$30 billion surplus would be spent on highways and the other half dedicated to reducing the federal budget deficit.

Westerman's bill would mean less money for Arkansas' private option, which he opposed when he was majority leader in the Arkansas House of Representatives, and he's been criticized for his proposal. But according to Westerman, it's all about setting priorities the way he did as an engineer at Hot Springs-based Mid-South Engineering.

Elected in 2014, Westerman is one of only a handful of engineers in Congress, just as he was one of only a handful of engineers in the state Legislature. He recently recorded a video for the National Society of Professional Engineers discussing his political involvement. His service required him to leave a fulfilling career at Mid-South. However, he says he uses some of the same skills in Washington that he learned at the University of Arkansas and in his engineering career. It's all about solving problems.

Arkansas Professional Engineer spoke with Westerman June 3 between votes on the House floor.

**How are you taking your engineering background into Congress?**

"Well, it's kind of one of those things that sticks with you wherever you go,



Photo courtesy of Rep. Bruce Westerman's office

and then I do the work of researching, of writing bills, of sharing ideas with others. And then trying to get something passed is kind of the 'present the answer' part of it."

**When you do this when you're working with Mid-South Engineering, you're mostly dealing with people who think logically and rationally and try to deal with facts. And in Congress, you don't always deal with people who are thinking that way.**

"(Laughs.) Yeah, but that doesn't change the fact that there's logic and reason out there, so I want to always be

and I'm finding that the same benefits of being an engineer that I had serving in the Legislature or on the school board are here serving in Congress. And it gets back to the problem-solving ability that engineers learn, that they're taught in college and practice every day in the real world."

**How would you apply your problem-solving ability to a public policy issue?**

"Well, the problem-solving method, you define the problem; you come up with a plan. In engineering, we say you do the math and then you present the answer. That's how I kind of approach things here in Congress is I look at what the issues are and try to make sure I define the problem correctly, and then I use the creative process to come up with potential ways to solve that particular issue,

consistent in doing a logical analysis of presenting the facts and trying to come up with a rational answer. And as you said, when you're doing that as an engineer, you're generally doing it for someone that's looking for a logical, rational answer. And that's not to say that you never have to go back and modify things, but usually once you come up with a good plan and present it, it gets accepted and implemented."

**In the engineering world.**

"In the engineering world. And I'm working hard to see that happen in the political world. It takes time."

**So are the people illogical, or is the process illogical, or why don't we have logic ruling the day up there? Or am I wrong about that premise entirely?**



**“ I still get to do problem-solving, and really that’s what engineering is: problem solving. I’ve heard more than one engineer describe themselves as ‘glorified problem solvers,’ that engineering school taught you the problem-solving method and it gave you the tools to solve complex problems, and the experience that you get after you get out of school is where you really learn what engineering’s about. ”**

**- Rep. Bruce Westerman**

“I think it’s just the fact that you’ve got so many different perspectives and world views represented in Congress. I mean, it truly is a slice or a cross-section of the country that you see here, and the 435 people in the House and the 100 members in the Senate, and then of course you’ve got the president, so you’ve got people that approach issues with a different world view. Some things that may be an issue to one person may not be an issue to another one. So I look for those things that I believe are common issues among everyone, like highway and transportation funding that affects everyone, and I look for creative ways to solve those problems.”

**So do you treat this diversity and these difficulties as another engineering problem? I mean, people in some ways are just an engineering problem, too, to be solved, to be worked around, like you would anything else.**

“Yeah, I guess if you looked at it like a computer program, the program just gets more complex. (There are) so many more constraints on a program, and so many more variables and inputs on it.

“But that’s part of what makes our country great is the variety of ideas that come together. I like to have the intellectual debate and talk about ideas and really have an honest intellectual discussion on things, and I believe that the best answers and the truth usually rise to the top. And I can respect someone when they disagree, but I have a problem when people just ignore the facts when it’s things that you probably just shouldn’t disagree on because it’s not really subjective. It’s really more objective data.”

**Do you think that most people in Congress at least try to look at objective data and make decisions based on**


**that, and they just have different world views? Or are there a lot of members of Congress who aren’t objective?**

“I think most members of Congress would like to be objective, but you’re representing 700,000-800,000 people, and you get input from all different groups of people and they’ve all got different ideas, and sometimes I think that clouds the objectiveness of the process. Or it’s where politics comes in where you may be trying to achieve a long-term goal and not necessarily concerned with some of the short-term effects on it. And that can be frustrating, but it’s still all something that I think you can, if you evaluate enough, that you can see it for what it is and figure out how to navigate through all of that.”

**Are you the only engineer in Congress, the only P.E.?**

“No, there are a few more, and I am the only forester in Congress, which is kind of unique from my professional training. I’m in two areas where there’s just not a whole lot of representation to share in Congress, and that’s good in a way, and it’s bad in a way. It’s bad in a sense that I think we need more engineers in Congress. I think we need more people that are purely problem solvers. But from a selfish personal perspective, it’s good because if there’s not many people that have a certain expertise, then more people come to you to ask questions when an issue comes up, and especially on the forestry side of things. I’m kind of the only forester in Congress. I’m going to be running the forestry bill this year as a freshman, which is a big honor for me to be able to do that. ... It’s the bill that establishes the policy for the Forest Service. It’s more than just the Forest Service; it’s the policy for the management of timber on public lands.”

*Continued on next page*











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Photo courtesy of Rep.  
Bruce Westerman's office

### **Are you going to change anything?**

"Yeah. I just got out of a hearing this afternoon where we did the initial review of the bill. I'm going to file the bill tomorrow, and we're really looking at it, again using science and forestry management and trying to take the political part out of it so that the employees of the Forest Service who are trained, educated people who just want to do their job, we're

trying to make it where they can do their job and help make our forests more resilient and healthy. We've got a huge problem with wildfire in our country, and a big part of that is because of the lack of management on the forests that's being created because of litigation and political agendas that have learned how to manipulate the system so that the Forest Service employees can't do their job."

### **Do you hang out with the other engineers?**

"Not so much. I've met a couple of them. But I tell you, you get on your committees, and those are kind of the people you see, and the freshmen I came in with, those are the ones that I've kind of made personal friendships with along with others. But I haven't just had a chance to sit down in a group with the other engineers."

### **Why aren't there more engineers in Congress?**

"I think part of that's because engineering from a personal perspective is a very fulfilling career. You invest a lot of time and effort into becoming an engineer, and, you know, when you're doing engineering work you get to see your ideas come into reality. So I think engineers just get too busy with their careers and being good citizens and raising families and building businesses that not enough of them get involved in politics, whether



that's local level or federal level. Any time I talk to engineering groups, I try to encourage them to get involved, even if it's on a volunteer level, to get involved and share some of their talents back with society. Some of the things I've done are even from my church on building committees and things like that. There's always an opportunity for engineers to share their expertise on certain things. When I was on the school board, we did a lot of building projects, and having an engineering background helped out with that."

### **How is Congress different than the Legislature?**

"Well, it's obviously much larger. It's 435 of us versus 100 in the Legislature. Congress is pretty much full-time, year-round, so there's not the mad rush to get bills done in a certain time frame, so you get a chance to slow down and kind of understand the legislation a little better up here. You know, there's more zeros before the decimal point up here."

### **Your bill that you've filed to transfer money from Medicaid to the highways, is that an example of an engineering solution?**

"Yeah, and I think that's more of a business approach, of prioritizing. We're spending out of control on our mandatory side of spending. And this is a frustrating thing of engineering in Congress. I can sit down and explain that to any-

one, and I believe a rational person would understand where I'm coming from, that I'm just trying to make it on the Medicaid side where we're not paying more for able-bodied working age adults than we are for elderly people and disabled people. I'm trying to level the playing field there because I think it's an injustice when you're paying a 43 percent premium for able-bodied working age adults, and I say we should prioritize that money and put it into highways and transportation. Well, you know, people take that and they write things and say things like I'm going to take money away from poor people to build roads. And things can be twisted, and there can be a spin put on anything. So you've got to stick to your messaging and stick to the truth in what you're doing, and that's one where that to me it's about priorities and removing the injustice in the funding system on that mandatory spending program."

### **Do you miss engineering?**

"Yeah, I do. ... But I still get to do problem-solving, and really that's what engineering is: problem solving. I've heard more than one engineer describe themselves as 'glorified problem solvers,' that engineering school taught you the problem-solving method and it gave you the tools to solve complex problems, and the experience that you get after you get out of school is where you really learn what engineering's about."



# Road group begins search for solutions

With gas tax receipts insufficient and Congress offering few answers, appointees look for highway money.

By **Steve Brawner**  
Editor

When the Working Group for Highway Funding met for the first time June 24 to begin considering how to fund the state's roads, Gov. Asa Hutchinson told its members to be creative.

They'll have to be. Congress has been unable to find an adequate funding source in an era of inadequate gas tax receipts, and money does not yet grow on trees.

Hutchinson appointed the 20-member group following the legislative session. In a brief address at the start of its first meeting, he suggested the state change its funding formula so that it produces more revenues in the future, rather than just worry about current needs. He said working group members should be creative while also "balancing of political reality."

Hutchinson asked for a show of hands from members who believed more funding is needed for highways. Virtually all, if not all, did.

What does that mean?

"I was encouraged that everybody recognizes that we need additional revenue for highways," said state Rep. Andy Da-



**STATE REP. ANDY DAVIS**, R-Little Rock, is a member of the working group.

Earlier that day, the Highway Department announced it was withdrawing six construction projects worth \$55 million in its July bid opening. That brings the total for the year to 75 projects with an estimated value of \$335 million.

The projects were pulled because of concerns over future federal funding. The motor fuels tax has not been raised at the federal level since 1993 and at the state level since 2001, and it no longer produces enough money to fund highways without extra money being pulled from the rest of the federal budget. About 70 percent of Arkansas' highway construction costs are

reimbursed by the Federal Highway Administration's Highway Trust Fund. That fund is projected to be insolvent by August, and the law that authorizes highway funding, MAP-21, has been temporarily extended by Congress only until July 31. The U.S. Senate Environment and Public Works Committee on June 24 passed

reimbursed by the Federal Highway Administration's Highway Trust Fund. That fund is projected to be insolvent by August, and the law that authorizes highway funding, MAP-21, has been temporarily extended by Congress only until July 31. The U.S. Senate Environment and Public Works Committee on June 24 passed

*Continued on page 23*



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the DRIVE Act, which would be the federal government's first six-year transportation plan since 1991. However, any transportation bill would have to be funded and would have to pass through other Senate committees, plus make its way through the House and be signed by the president.

The Highway Department's normal construction program is \$400-\$450 million a year. During construction season, the department typically pays contractors \$70 million monthly and then quickly is reimbursed \$50 million. According to Director Scott Bennett, if the Federal Highway Administration goes into cash management mode, those \$50 million monthly payments would be reduced to \$30 million a month. If nothing were done, the department's cash balance, currently about \$200 million, would fall to zero by the end of the year.

### Jobs at stake

In an interview, Bennett pointed to a 2014 Duke University study that found that \$1 billion invested by the federal government in transportation infrastructure creates 21,671 jobs.

The Arkansas Good Roads Foundation, composed of transportation infrastructure supporters, has been asking its associations to survey their members on the impact of the funding impasse. Executive Director Craig Douglass said, "Contractors are either reducing crews, they're cutting hours, they're doing hiring freezes, or they're looking at laying off workers beginning in July, and they are making no new capital investments in equipment. All of that's on hold."

Bennett told his fellow working group members June 24 that between 1993-2014, revenues have increased 63 percent but expenses have increased 83 percent, with the construction cost index rising 181 percent. The system faces a \$16.8 billion shortfall over the next 10 years, with \$20.4 billion in highway needs but only \$3.6 billion in projected revenues. Those needs include \$6.25 billion that could be spent on I-49, I-69 and I-55. He said \$8 billion is needed for simple system preservation that would give major interstates a "B" grade and less major routes a "C."

Bennett said the average Arkansas household pays \$40.71 in federal and state gas taxes per month. A 10-cent gas tax increase would add \$1.15 more per week to those taxes and add \$200 million for road funding.

As working group members consider their options, they will draw on the experiences of the Blue Ribbon Committee on Highway Finance, which met in 2009-10. For 18 months, the committee considered a variety of options. Public meetings were held in five cities. Douglass, who worked with the committee as a consultant and is now a member of the working group, said the general consensus among citizens attending those meetings was that highway funding should be increased. Attendees supported a bond issue that voters later would pass in 2011 as the Interstate Rehabilitation Program. They also agreed with dedicating a sales tax to highways because it's broad-based and was perceived to be equitable and fair. Voters passed such a tax in 2012 to fund the Connecting Arkansas Program to relieve congestion.

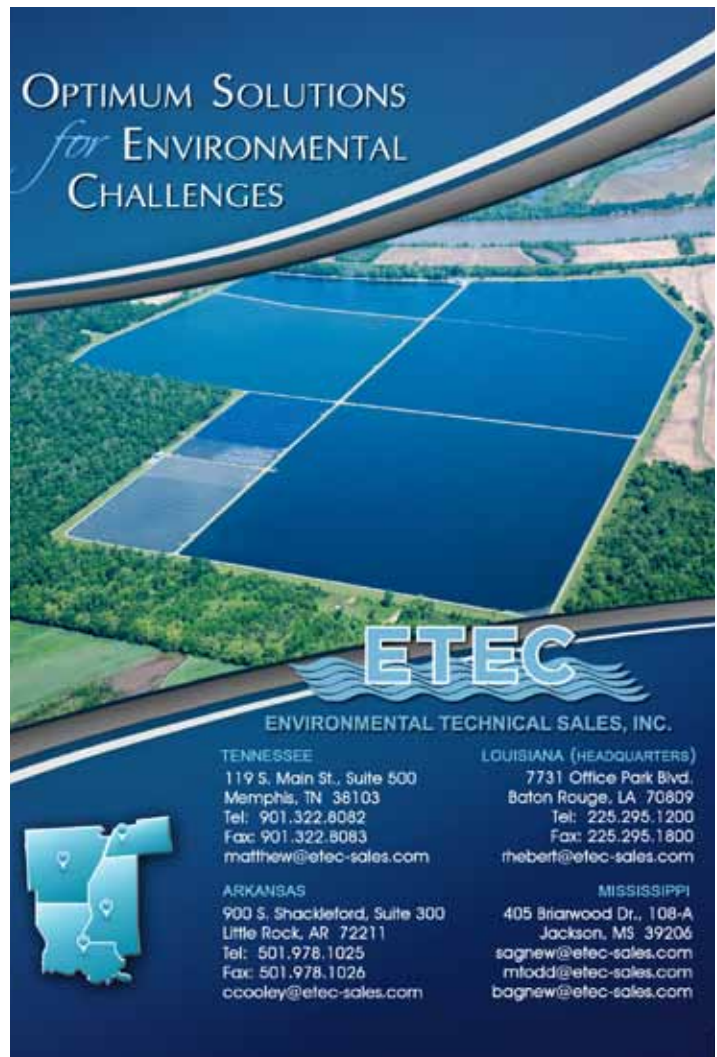
The final report was presented to Gov. Mike Beebe and the Legislature on Dec. 1, 2010. In addition to the bond issue and half-cent sales tax, another recommendation, a State Aid for

Cities Program, also became a reality. The Legislature dedicated one cent per motor fuels gallon to cities, contingent upon voter passage of the Connecting Arkansas Program. That provision raises \$20 million a year for city streets. The downside for the Highway Department is that it's permanent, while the half-cent sales tax funding the Connecting Arkansas Program ends after 10 years.

Another of the Blue Ribbon Committee's recommendations attracted a lot of support but hasn't passed: a 10-year phased-in transfer of sales taxes from vehicle parts and services to highways from the general fund. Other recommendations that have failed to gain traction include indexing the current per-gallon tax on motor fuels to the state's highway construction cost index, implementing a new excise tax on the wholesale price of fuel, a constitutional amendment allowing counties to levy more than the current 3 mill county road tax, and reducing the size of the state's highway network, the nation's 12th largest.

If the solutions were easy, there would be no need for a working group. Unfortunately, the solutions are hard. Highways must be funded, but money doesn't grow on trees. That means the working group has a lot of work to do.

"There's no answer that's going to make everybody happy," said Davis, "so everybody's going to spend some political capital here, but I think everybody recognizes we've got to have some sort of answer."



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**CONFERENCE SPEAKERS.** Top left, Rick Geraci, P.E., vice president and senior project manager of Brown Engineers, discusses issues related to nondisclosure agreements. Top right, Nicole Mangino, regional manager with XL Insurance's Design Professional group, discusses a case study about a design firm that didn't settle and won its case. Bottom left, Evan Teague, Arkansas Farm Bureau's director of environmental and regulatory affairs, discusses C&H Hog Farm, a large operation near the Buffalo River watershed. Bottom middle, Trevor Timberlake, P.E., CFM, with the Arkansas Natural Resources Commission discusses dam regulation. Bottom right, Bruce Lazarus, director of Arkansas Tech University's STEM Institute, describes Project Lead the Way, an engineering and science curriculum for all grade levels.

## Engineers shown how to Lead the Way

Larry Stephens, P.E., of Mid-South Engineering was named ASPE Engineer of the Year, while Gregory Sorenson, P.E., a senior engineer with the Southwest Pow-

er Pool, was named Young Engineer of the Year at the ASPE Annual Conference, held this year at the Arlington Hotel in Hot Springs March 26-27.

Crafton Tull's Brad Peterson, P.E., the ASPE's incoming president, accepted the gavel from Lane Crider, P.E., the society's past president, as a symbol of his upcom-



ing leadership of the society for the 2015-16 year.

Engineers heard a presentation by Bruce Lazarus, director of Arkansas Tech University's STEM Institute, which manages the 18,000-student Arkansas branch of Project Lead the Way. That's a national science, engineering and math curriculum where students learn critical thinking skills through hands-on activities, often using technology. Teachers act as facilitators, and the method allows for students to take different paths to produce the right answers. Last year, 139 Arkansas teachers, all of them having a math or science certification, spent two weeks prior to the school year training to do every project their students would do that year – an intense process the teachers call “boot camp.”

From the youngest grades, students learn basic engineering and physical science principles. For example, kindergarten students in one activity are asked to design a house that could sustain the

blowing efforts of the “Big Bad Wolf.” When teachers collapse the designs using hair dryers, students determine why the structure failed and then redesign it. “We’re trying to teach students it’s OK to fail,” Lazarus said. “Everything in this room was designed by someone, and do you think it actually worked the first time they designed it? Most likely not.”

Students learn more about engineering and math as they advance through school. In the fifth grade, they start learning coding and robotics. In the sixth grade, they enter the curriculum’s Gateway program, where one course, design and modeling, teaches basics about the engineering design process. Students keep an engineering notebook where they record the sequence of events in their project designs. Another course, automation and robotics, deepens their knowledge of those subjects. Forty-six teams competed in Project Lead the Way’s March state robotics contest, with four advancing to the world competition in Louisville. Schools

can choose between other courses teaching subjects ranging from crime scene investigations to green architecture. That leads to high school, with more advanced classes, including computer science/engineering and biomedical sciences.

Lazarus said Project Lead the Way students are engaged and college-oriented, with 92 percent knowing what they want to do as a career when they graduate high school.

“We’re trying to train kids to think for jobs that haven’t been created yet,” he said. “We’re always trying to think and push them in that direction.”

Lazarus asked engineers to volunteer at robotics competitions, to contact their local school superintendents and school boards about starting a Project Lead the Way program, and to serve on an advisory board to find money for school districts that can’t afford to participate.

Nicole Mangino, regional manager with XL Insurance’s Design Professional

*Continued on next page*

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group, led attendees in a case study involving a design firm that had been involved in an \$80 million production of a county courthouse. The project manager seemed to have taken care of all the details, but the structure still collapsed, killing one person and injuring four people. It turned out that the problem was a failed clip angle whose drawings had been approved by the design firm. The firm decided to stay out of the \$20 million settlement because settlements involve the expectation of paying something – in this case, a lot of money because of the deep pockets involved – and XL didn't think the design firm had technical liability. Afterwards, the firm was sued by the contractor. It cost \$600,000 to go to trial, but the design firm won and owed nothing.

"I can't stop people from suing you," she said. "I just can't. You guys understand that. But at the end of the day, sometimes we have to win it. ... And this is one of those cases."

Mangino told engineers that the first thing firms should do in the event of a potential claim is call their insurance carrier, which immediately can provide the right legal and professional help. The carrier has an incentive to do this because it wants to reduce its own payout. She warned engineering firms to avoid admitting blame for mistakes or to avoid pointing fingers when something goes wrong – particularly on large public projects that attract a lot of attention. Be careful to avoid rubber-stamping documents, even if an important client asks for it, she said. A jury is not composed of engineers and only must be made to believe that a design professional was negligent, regardless of whether or not he or she actually was. In situations like the above case study, jurors tend to want someone to pay for the death and injuries caused by the collapse.

Rick Geraci, P.E., vice president and senior project manager of Brown Engineers, discussed issues associated with confidentiality and nondisclosure agreements. Among those are intellectual property, trade secrets, financial information, facility security, union agreements and safety. External issues include emails and even email addresses, media inquiries, and legal inquiries, which trump nondisclosure agreements. Ger-



**NEW PRESIDENT.** Crafton Tull's Brad Peterson, P.E., now will lead the ASPE.

aci warned engineers about disclosing even basic health information so as not to violate HIPPA privacy laws. Other issues include security of information and documents within the office; internet and computer security; and integrity of the information sent to a client. Geraci suggested firms meet once a year with employees to ensure they understand the firm's nondisclosure agreements.

Geraci said engineers face numerous ethical situations, including how much information from one client's drawings and calculations can be used for other clients. He said engineers can face a gray area when it comes to using one client's confidential design as a basis for other designs. At what point does a design, modified over time and then reused, become an engineer's basic knowledge and no longer subject to the agreement?

"You have to decide, where do you draw that line to say that that's still proprietary information, or it's something that you've learned how to do and becomes a part of your basic toolbox," he said.

Verbal agreements can be especially challenging, he said. "My feeling is that any information that's short of talk-

ing about baseball scores or deer camp ... is probably going to be confidential. ... You have to consider most everything you talk about to be under an agreement unless you're told otherwise," he said. "One little simple slip, and your client comes back and says, 'Why, I told you that in confidence. How come so-and-so knows about it?' Or, 'How come I got a call from this vendor asking me about a project that's coming up? How did he find out about it?' And it can be just that simple."

Geraci said non-disclosure agreements with public project clients should specify

who is privy to the information. Otherwise, the mayor might approach asking for information that might violate an agreement with one of the city's departments. When that happens, as politically difficult as it might be, the engineer should refer the mayor to the department.

What about when calling attention to a safety concern could violate a confidentiality agreement? Geraci suggested approaching the client first, but if the right person is not available and the danger is imminent, then alert the highest and best authority figure, informing him or her that the problem could be related to the agreement.

In other presentations, Trevor Timberlake, P.E., CFM, with the Arkansas Natural Resources Commission told attendees that his agency regulates 409 of the state's 1,251 dams. Evan Teague, P.E., Arkansas Farm Bureau's director of environmental and regulatory affairs, said the controversial C&H Farms, a large hog farm operating along the Buffalo River watershed, will be using new, green technology to ensure the watershed is protected. Opponents of the farm have worried that waste from the farm could pollute the watershed.



# New year a time of renewal

New officers, new opportunities mark beginning of 2015-16

Happy new year – for ACEC/A and ASPE!

July may be the time of year when most Arkansans are taking a few days off to go to the lake or spend some time in the backyard. For ACEC/A and ASPE, it's a time of change and renewal.

For example, this is when we thank our previous year's officers for their volunteer work and welcome a new slate. Thank you, Brad Hammond, former president of ACEC/A, and Rob Bullen, former president of ASPE. You now have every organization's most coveted title: past president. You've earned it by giving of your time this past year, and I know you will continue to be involved.

The new presidents, ACEC/A's Dee Brown of Brown Engineers and ASPE's Brad Peterson of Crafton Tull, have demonstrated their commitment to their associations by serving in the various officer positions through the years. I'm confident they will lead as ably as Brad and Rob did.

As presidents, Dee and Brad will be asked to do a lot, but what about the rest of you? The new year gives our organizations' members an opportunity to get involved in a variety of ways. Volunteers are needed for committees serving a va-



**Angie W. Cooper**  
Executive Director

riety of purposes, from energy to education to public relations. Contact me at the ACEC/A-ASPE offices to find out more.

This also will be an important year for engineers in Arkansas politics. As you probably know, legislators have moved Arkansas' primary elections to March to coincide with other Southern states in an "SEC primary." That means that potential candidates must seriously consider now if they want to file. Want to throw your hat in the ring? We could use more engineers in the Capitol.

Meanwhile, Gov. Asa Hutchinson's Working Group on Highway Funding has begun meeting to try to create a viable long-term funding mechanism for highways. State Rep. Andy Davis, a P.E. and owner of New Water Systems, is on

the committee. Be watching for what the working group recommends, and don't hesitate to offer your own ideas.

There's something new happening with the Emerging Leaders program as well. The program, managed jointly by ACEC/A and ASPE, brings engineers and other design professionals together for a series of sessions designed to improve so-called "right-brain" people and creative skills. Each year's sessions begin with a Challenge Quest team-building challenge. Other sessions cover business, public speaking, government, conflict resolution, contracts and risk reduction, Business 101, and a roundtable featuring some of Arkansas' leading engineers. This year we're adding an additional session, and we're asking for your input on what that should be. What skills would you like your design professionals to learn? We can help teach them. Deadline to sign up is the first part of September.

Finally, plans are being made for an ACEC Project Management Bootcamp in the fall after last year's spring event was such a big success. The program brings engineers together for a two-day seminar where participants learn successful management techniques and gain 12 hours of continuing professional development. Discounts will be offered for firms that sign up multiple project attendees, so make a New Year's resolution to attend.

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## ASPE Engineer of the Year

# Always serving the client

Mid-South Engineering's Larry Stephens is still active 46 years after company's founding

By **Steve Brawner**  
Editor

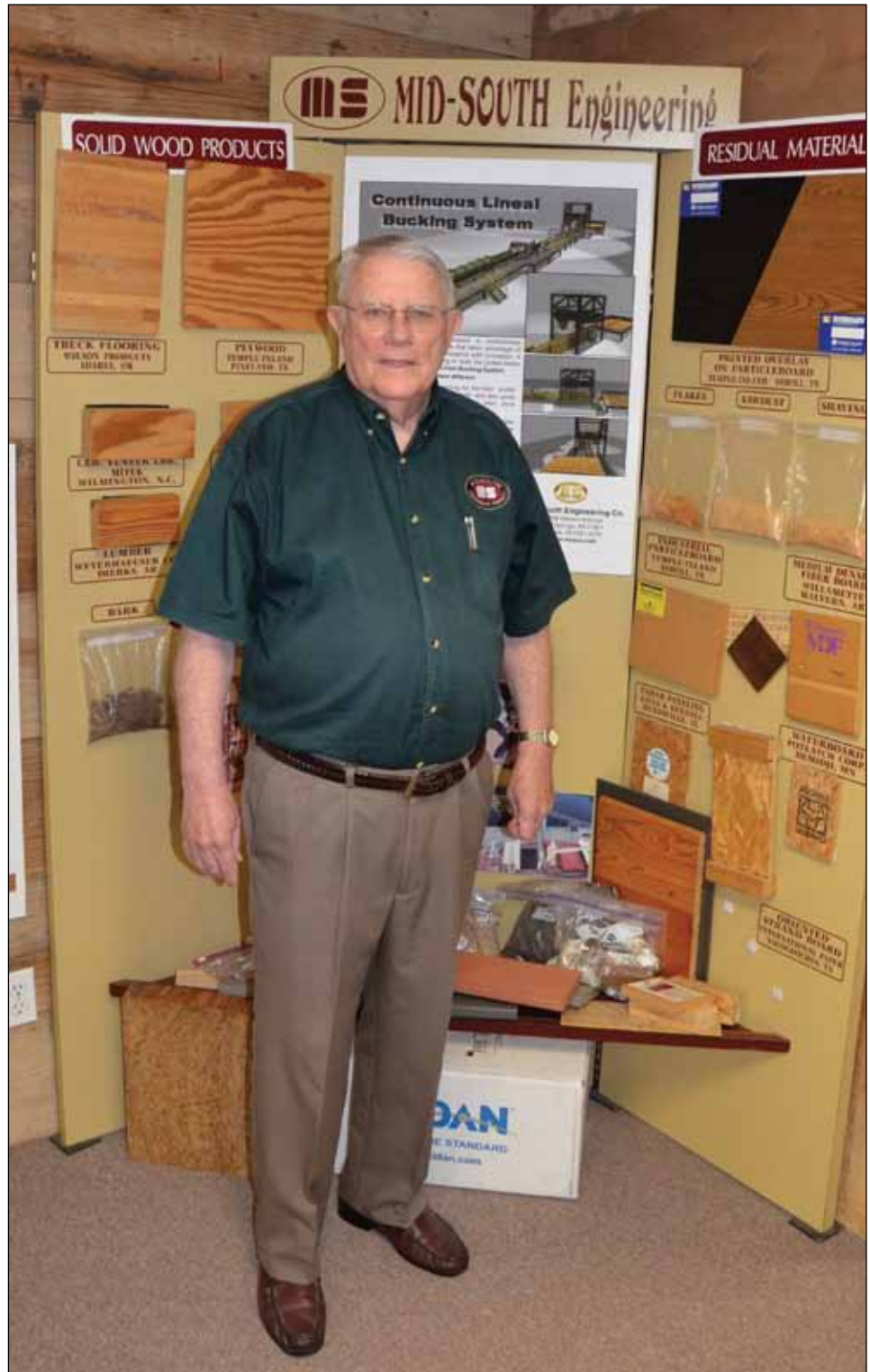
In 1969, Roy Murphy and Larry Stephens, both engineers, were faced with an uncertain future. Their employer, Dierks Forest Company, had been bought by Weyerhaeuser, and it wasn't clear what would be done with Dierks' Hot Springs engineering staff. Instead of waiting to find out, they decided to start Mid-South Engineering Company, now 120 employees strong.

Murphy has passed away, but Stephens, 79, is still the company's chairman, and because of his lifetime of engineering accomplishments he is also the ASPE Engineer of the Year.

"I think our key is the fact that our mission statement says that we serve the client and always work for the client's best interests," Stephens said. "And as long as we do that, and the client recognizes it, then we have a large following of repeated business from repeated clients."

Born and raised in Hot Springs, Stephens considered attending Texas A&M out of high school to study industrial management. Instead, not wanting to leave Arkansas, he chose the closest thing – an industrial engineering degree from the University of Arkansas, from which he graduated in 1958.

He then began working for Dierks, which sent him to Pine Bluff to work as a project engineer at a paper mill. After taking a six-month break to serve in the Army as a second lieutenant to fulfill an ROTC commitment, he then was assigned by Dierks to Hot Springs to work as a project engineer on a wood products facility the company was building in Broken Bow, Oklahoma. Once that project was completed, the company sent him to Broken Bow to serve as the on-site plant engineer for a year and a half. Then he was transferred back to Hot Springs as a senior project engineer.



**ENGINEER OF THE YEAR.** Larry Stephens, P.E., stands in front of a display featuring some of the products Mid-South Engineering's designs make possible.

He would never have to leave his hometown again. In 1969, Stephens and Murphy started Mid-South along with two other engineers, Jack Copeman, P.E.,

and L.C. Gaither, P.E. Murphy became president and Stephens became vice president and treasurer. Sensing a unique opportunity in a wide-open market with



few competitors, the partners decided to specialize in designing sawmills. The firm soon expanded from the Arkansas-Louisiana-Texas area across the South, up and down the East Coast and into the Great Lakes – “any place that there were trees,” Stephens said. It expanded into board plants, including those producing plywood, hard board and soft board products.

Today the company has about 120 employees, including roughly 35 engineers, with its corporate office in Hot Springs and satellite offices in Cary, North Carolina, and Millinocket, Maine. Project sizes range from \$1.5 million to \$120 million.

Sawmills are still a part of the company’s business, as clients must modernize to keep up with new technology. The company also has expanded into gypsum plants, and then, in recent years, bioenergy and mining. It has a steady stream of European clients setting up wood pellet plants in the United States and then shipping the product home to be used as fuel to produce electricity or steam. Scrub trees that won’t produce plywood are ground into chips and then sawdust, and then bound with adhesive into a small pellet. The fuel is especially popular in the United Kingdom. American firms also are producing the pellets for use in wood-fired home heaters.

Stephens said the wood products industry, which depends on construction and new home sales, is a barometer of the economy. Mid-South has weathered several recessions, so he’s learned that an economy is about to improve when clients start hiring the firm for early planning and feasibility studies. He said his firm has now seen part of that cycle and is in a period of stability.

to turn it into an asphalt jungle.” The partners saw its potential – the wooden barn fit perfectly with their company’s mission – and promised the owner they would use it for their offices.

“We were growing at that time, and we needed more space, and we thought it looked like a unique operation,” he said. “It was all wood. We were dealing with wood products clients, and they all appreciated it too when they came here.”

The company went to work re-engineering the barn, which at the time featured dirt floors covered with manure. Engineers cleaned and wiped down everything, turning stalls into offices. A back area where the horses once fed was enclosed and transformed into a conference room. The upstairs loft area is now a drafting and design area. The area where Kulp once showed his ponies to the public is now a reception area. Later office expansions kept the horse barn motif. Two-thirds of the acreage has been sold, and a house that was part of the complex has been leased to a doctor.

After 46 years in business, Mid-South Engineering knows how to serve its clients. It performs feasibility work and detailed cost estimates, then engineering design, and then project management assistance with supervisors on site. Once the work is done, Mid-South’s engineers go on site to help the client start up.

“And then we turn the keys over to the client,” Stephens said.

The firm’s success is a direct outgrowth of Stephens’ leadership. U.S. Rep. Bruce Westerman, a former Mid-South engineer who now represents Arkansas’ 4th District, described Stephens and Murphy as mentors. He said Murphy would tell the engineers to follow what he called the

“Golden Rule”: to treat the clients with respect and never forget that “the clients have the gold, so they were going to rule.”

“We never had a salesman in our engineering firm because our philosophy was that we were the salesman, and how we did on one project was the advertisement for the next project,” Westerman said.

Now 79, Stephens takes a less active role in the company. It’s now in its second generation of management, with Lee Murphy, P.E., Roy’s son, serving as president while Stephens’ son, Jeff Stephens, P.E., is an industrial engineer and company vice president. (Stephens’ daughter, Kerry Johnson, is married to a civil engineer and lives in Memphis.) While still the company’s chairman, Stephens now is focused on public relations and community activities. He has served on a number of boards and commissions in the past and is currently on the board of the Levi Hospital, the Oaklawn Foundation, and the Hot Springs Area Community Foundation. He also serves on the Dean’s Advisory Council for the University of Arkansas College of Engineering and is participating in the college’s new fundraising campaign. He also chairs a newly organized committee that is tasked with resolving Hot Springs’ ongoing water capacity issues. City Manager David Watkins said, “I’m a relative newcomer, but if you go to any type of event, Larry’s always kind of got a crowd around him, so I would definitely name him one of the leaders of this community.”

Even with all that, Stephens still makes time for his four grandchildren along with tennis and golf.

“I am not retired today, but I’m retreating,” he said. “I’m retreating toward retirement.”

## Re-engineering a horse barn

Mid-South Engineering’s Hot Springs offices originally were a hand-hewn horse barn built in the 1920s by Benjamin Kulp, the inventor of the three-ring notebook binder. Kulp would bring his executives to Hot Springs to make them work with his Shetland ponies as a team-building exercise. In 1975, Mid-South had an opportunity to buy the buildings and 33 acres at an affordable price from a member of the Dierks family who was moving and, Stephens said, “didn’t want anybody



Larry G. Stephens, P.E.  
ASPE Engineer of the Year



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## ASPE Young Engineer of the Year

# Young, but not inexperienced

Southwest Power Pool's Sorenson has advised utilities and the Afghan government

By **Steve Brawner**  
Editor

Gregory Sorenson, P.E., may be the ASPE's Young Engineer of the Year, but he's already used his engineering skills in a wide variety of experiences.

For about the past five years, the electrical engineer for the Southwest Power Pool has worked with electric transmission and generation companies in an eight-state area on improving operations and engineering practices to comply with reliability standards. He works with companies on redundancy, disaster planning, maintenance, engineering and operations.

Among the questions he helps them answer is, "When the automatic processes stop working, what actions need to be taken to continue, because obviously power is still going to flow whether you're controlling it or not," he said.

He sees part of his job as helping people understand theirs.

"Usually what you find is one person in the company is the expert on it, but the people actually doing the job day to day haven't necessarily had as solid of an understanding of those theoretical reasons why we do certain rules," he said.

Sorenson received his Young Engineer of the Year award at the ASPE's Annual Conference March 27.

Originally from Illinois, Sorenson served four-and-a-half years in the Navy as an engineer and surface water officer. His duties included serving on a destroyer hunting submarines and on a large deck amphibious assault ship keeping boilers and water systems operational.

"We did find some submarines, yes," when asked about the destroyer's success. "Mostly ours, but we did find some."

Sorenson was mobilized in 2012 to serve in Afghanistan for nine months supporting Operation Enduring Freedom. There he put his engineering skills to work in areas that, at first glance,



**YOUNG ENGINEER.** Gregory Sorenson, P.E., an electrical engineer with the Southwest Power Pool, is this year's ASPE Young Engineer of the Year.

would not seem to have much to do with engineering or the Navy. Stationed in Kabul, which he said is "not anywhere near the coast," he worked three months as an aide to a State Department official crafting policies to ease the transition from American to Afghan control. He also spent six months in a planning command lending operational expertise in areas as varied as contract dispute issues and power problems. During his time in Ka-

bul, he helped the Afghan justice system improve its processes, which included teaching about docketing and planning so that output increased from one case a day to about six.

He now serves as a lieutenant commander in the U.S. Navy Reserves, where he commands a unit supporting naval shipyards. He lives with wife Bronwyn MacFarlane in Little Rock and enjoys running and hiking.



# New dean sees opportunity at UALR

## Likes how college, city, industry work together

By **Steve Brawner**  
Editor

Dr. Lawrence Whitman, P.E., says there's a reason he's leaving his position as engineering dean at Wichita State University to be dean of the UALR Donaghey College of Engineering and Information Technology: "Opportunity knocks."

Coming here is a professional opportunity, of course, but Whitman sees an opportunity to expand the college's multi-disciplinary collaboration with the community and the private sector.

"Some places have industry wanting it to happen, some places have the educational establishment wanting it to happen, and some people have it where the city wants it to happen," he said. "I believe here has all three different components really primed and motivated to make it happen."

An Oklahoma native, Whitman earned a Ph.D. in industrial engineering from The University of Texas at Arlington and both his M.S. and B.S. degrees from Oklahoma State University. He has published 13 articles and nearly 100 conference publications regarding production systems, enterprise engineering, and engineering education. According to a UALR press release, undergraduate student enrollment at Wichita State increased more than 36 percent and graduation rates by 20 percent while he was engineering associate dean and director of engineering education.

Whitman had 10 years of industry experience before moving to Wichita State 16 years ago, including working with General Dynamics and Lockheed Martin producing F-16 and F-22 fighter planes. At Wichita State, he's worked with large aerospace companies and their suppliers.

One of the things that drew him to UALR and to central Arkansas was the college's effort to help researchers and entrepreneurs commercialize their ideas through UALR's Tech Launch and its community-based nonprofit partner, the Innovation Hub. He wants UALR engineering graduates to be entrepreneurial.



**NEW UALR DEAN. Dr. Lawrence Whitman, P.E., comes to Little Rock from Wichita State University.**

"Engineering can be a boring, 'we're going to do this next thing' kind of thing, or it can be a creative, innovative venture," he said. "And that's really what we want our students to be is to see it as a creative event. ... And when you can get them thinking about innovation rather than just doing the next simple thing, then that's really what revolutionizes our community as well as our country."

Whitman, the college's third dean since its founding in 1999, said UALR has a good mix of disciplines: civil engineering, construction, computer science, etc., that work well with employers. He's excited about UALR's proximity to the University of Arkansas for Medical Sciences.

"Back when I first became an engineer, it was very cool to be an engineer in your field and go real deep in your field and kind of hide in your hole, and now it's more cross-disciplinary," he said. "So you've got a lot of the computer science people at UALR that are involved in the health care community. And so we're what, 15, 10, 15 minutes apart? How beautiful of an arrangement is that? And then when you have the Innovation Hub to try to bring those things to market so that the research really takes bearing on what the public sees, that's just a great situation to be in."

"Engineering can be a boring, 'we're going to do this next thing' kind of thing, or it can be a creative, innovative venture," he said. "And that's really what we want our students to be is to see it as a creative event. ... And when you can get them

Whitman said encouraging licensure is important. Shortly before starting in Little Rock July 6, he spoke about licensure and career preparation before young engineers at the Kansas Society of Professional Engineers. UALR's civil engineering faculty excel at educating their students about licensure, he said, and he sees it as important in other disciplines.

"I really think that should be a push," he said. "I really need to talk to the faculty and see how we can integrate that more into other curricula as well. ... We want our students to be set apart from other students, and the P.E. license or the track to the P.E. license really is a big distinguishing mark of a future engineer."

While in Kansas, he was state director for Project Lead the Way, the public school movement that emphasizes engineering, science, technology and math. In Arkansas, Project Lead the Way is administered at Arkansas Tech University, but he intends to look for other ways to encourage and inspire future engineers.

"I observed a fourth grade class doing some kinematics, and so there were fourth-graders explaining to me kinematic principles using terminology that sounds like a college student," he said. "When you have things going like that, that's when your state and your region is really going to improve to where you can really provide the engineering base."

"You know, there's the attitude of, we need more engineers. Well, we don't need universities fighting over the students that want to be engineers, that are prepared to be engineers. We really want to grow the population so that our own local Arkansas students can fill those roles."

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