

Volume 50, July 2016

**Arkansas  
Professional**

**ENGINEER**

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



## Top two

**B&F Engineering won two of the ASPE's major awards at this year's Annual Conference, as founder Don Beavers, P.E., was Engineer of the Year while Dustin Ward, P.E., was Young Engineer of the Year.**

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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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**25** Don Beavers, P.E., is this year’s ASPE Engineer of the Year. He started his own engineering firm in 1970. For the past 20 years, B&F Engineering has employed between 45-50 people, including about 11 engineers.

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# ENGINEERING AMERICA'S BACKBONE

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# Looking ahead to a promising year



**Dee Brown, P.E.**  
ACEC Past President

We have reached the end of our fiscal year. Our annual meeting was July 21-23 at our Deep South Regional Conference in Destin, Florida. The region includes Alabama, Louisiana, Mississippi, and Arkansas. In addition to this being a great location and family-friendly conference, the conference was to feature great technical training sessions where engineers could pick up professional development hours while networking with their peers.

This conference was open to all employees of ACEC/A member firms and was the site of our annual officer rotation. Andy Dibble, P.E., of Mickle-Wagner Coleman is stepping into the president's position. I know from working with Andy that he will do a fantastic job.

Next year is very promising, as we continue enhancing the mission of ACEC/A using several new avenues. The board has worked hard to free up a little bit of our executive director, Angie Cooper's, time so that she can focus on:

- More face-to-face time with member firms, updating them on government affairs and what ACEC does for the community;

- Meeting with firms who are considering joining ACEC/A;
- Meeting with legislators to keep open channels of communication with ACEC.

It seems that new legislation is always popping up. Staying informed on legislative issues is a top issue, and ACEC does a great job of monitoring state and national legislative items that affect all engineering sectors: transportation, water, wastewater, energy, and aviation.

As engineers, we must protect those sectors, not only during design and construction, but also throughout the legislative planning and funding process. Through ACEC, we can help our government leaders wisely allocate resources and funding to operate, maintain and protect our nation's infrastructure.

Speaking of protecting our nation's infrastructure, I'm writing this message from Homeland Security's National Cybersecurity & Communications Integration Center (NCCIC) in sunny Idaho

Falls, where I just completed cybersecurity training for control systems that protect our water and energy utilities.

Our world has changed. After 9/11, we focused on physical security (still impor-

tant!), but now we face the added threat of cyberattacks on our water systems and electric power systems. These threats are documented and very real.

Engineers have fascinating jobs, and I wouldn't trade mine. I invite you to step up and join ACEC/A, or if you're already a member, encourage others to join us in advancing our industry and protecting our nation's infrastructure.



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# Protect the profession

In previous columns I explored the first two steps in the NSPE Strategic Plan's Statement of Principles. The first is DEFINE: providing a clear definition of why licensure is important to the engineering profession. The second is PROMOTE: ensuring our profession is seen as valuable, exciting, and rewarding. This entry addresses the third, and final, step – PROTECT. What actions can we take to protect future and current licensed engineers so we can continue to protect the health, safety, and welfare of the public?

– **PROTECT: through vocal opposition to unlicensed practice.** Just as we have a responsibility to support and encourage those pursuing licensure, we have a duty to seek out and oppose the practice of engineering by unqualified practitioners. In a 2010 survey conducted by NCEES, state licensing boards found that unlicensed practice or offer of practice is among the top two most common violations of state engineering rules and statutes.

As professional engineers, we have an ethical, and in some cases legal, obligation to call attention to potential health and safety threats posed by unlicensed practitioners. The intention is not to remove competition or inflict needless regulations; it is to assert involvement and oversight by licensed professionals in matters of public health, safety, and welfare.

Oftentimes the need for involvement is obvious, such as the operation of a public water system. Other times the need is less evident, such as the development of autonomous vehicles or abandonment of a mining operation.

– **PROTECT: through advocacy for the highest standards.** The Brooks Act, adopted by Congress in 1972, requires a qualifications-based selection process when seeking the services of architects and engineers. The idea is that most people wouldn't hire a surgeon based on the lowest price, so price shouldn't be the main factor when selecting an engineer to design roads and bridges.

Part of ensuring that public safety is not monetized is being honest and accountable whenever dealing with our clients and the public. It is also important to know the registration and licensing requirements in your jurisdiction, and to recognize the potential for increased licensure standards. To effectively raise the issue of adherence to our professional



**Brad Peterson, P.E.**  
ASPE Past President

requirements, we must commit to continued learning and professional development.

– **PROTECT: through legislative action.** Part of protecting our profession's future involves preventing attempts to undermine the engineering process or licensure requirements. One example is bills introduced under the veil of economic stimulus that eliminate occupational licenses, placing engi-

neers in the same licensure category as barbers, cosmetologists, and florists. While those are necessary and respected consumer services, they simply don't require the same amount of training as becoming an engineer. Moreover, public safety and welfare is not in their hands.

Fortunately, there are steps we can take to oppose regulations that could either lessen our status as a licensed profession or expose engineers to excessive responsibility beyond the accepted standard of care. Use the NSPE Daily Design email, Open Forum, and website to stay informed about the latest legislative and regulatory developments. Follow the Legislative Action Center and NSPE-PAC. Work being done on your behalf deserves support.

Professional engineers understand complex problems and, through formal education and extensive training, develop solutions. Each of us has an opportunity to play an important role in policy making and civic leadership.

– **PROTECT: through active membership.** Participation is perhaps the most important step in protecting P.E. licensure. To lead our profession in the right direction, we must take part in developing the Society's position statements and professional policies. We must mentor young engineers and those seeking licensure. Our organization is better when we hear the concerns and challenges faced by fellow engineers. Use your voice to help define where our great profession is headed.

My goal in this series was providing a blueprint for putting our Society's mission into action by highlighting the similarities that bind us as professional engineers. We are tied together as representatives of a profession we chose to make our career. As I've mentioned in previous columns, the NSPE is the only organization that addresses the needs of engineers across all disciplines. This is our organization, and only we can ensure it maintains its status, integrity, and relevance.

## In the News



Source: Arkansas Highway & Transportation Department

### Crafton Tull was consultant for U.S. 67 freeway

Crafton Tull was the prime engineering consultant for a 17-mile stretch of the new U.S. 67 freeway in northeast Arkansas.

When opened to the public, the project will finish the final segment of an interstate quality highway from central Arkansas to the Walnut Ridge/Hoxie area in northeast Arkansas.

The stretch of U.S. 67 from North Little Rock to Walnut Ridge would be designated as "Future I-57" through a provision inserted by U.S. Senator John Boozman into the Senate's fiscal year 2017 Transportation, Housing and Urban Development funding bill. The full Congress has not approved the funding bill.

Crafton Tull said in a press release that, as the prime consultant, it provided surveying, roadway engineering, and bridge engineering services and managed other subconsultant firms. It produced right-of-way plans and documents as well as construction plans for grading and structures, and base and surfacing plans.

Bridge types consist of steel plate girder and wide-flange steel beam superstructures with cast-in-place decks supported on reinforced concrete bents with concrete-filled steel shell piling foundations. The bridge sites are within the Class B seismic zone, and all plans were prepared in metric units.

The Arkansas State Highway and Transportation Department will hold a ribbon cutting ceremony on the finished highway August 11.

### Calendar of events

**October 19-22**  
ACEC Fall Conference  
Colorado Springs, Colorado  
The Broadmoor

**April 23-26, 2017**  
ACEC Annual Legislative Conference  
Washington, D.C.  
Washington Marriott Wardman Park

### Garver rises to 174 on ENR list of top firms

Garver moved up 18 spots on Engineering News-Record's annual list of the Top 500 Design Firms nationwide, from number 192 to 174.

The new ranking is the highest in the firm's history. Companies are ranked according to revenue from design services performed in 2015.

"Our climbing the list directly reflects the steps we've taken to provide our clients with a more specialized collection of service capabilities," said President and CEO Dan Williams in a press release, "and we're doing it from the largest Garver footprint ever with 18 offices in 10 states."

This year ENR named Garver a top 25 firm for airport work, the company's first such recognition in a particular sector.

"I've never worked with a more talented and dedicated staff than our current Aviation Team," said Director of Aviation Mike Griffin in a press release. "They're committed to the quality of their work and they're committed to the vision of our clients. That's never going to change with this crew and I think the industry is starting to recognize that."

### Garver's Gilbreath to head Arkansas Tech advisory board



Gilbreath

Arkansas Tech University's Electrical Engineering Advisory Board recently elected Garver Project Manager Bart Gilbreath to serve as its first president.

The board is composed of industry professionals assisting the Department of Engineering in a self-study review process.

The process will create goals and expectations for the curriculum and program as they relate to the industry's needs from graduates.

"It's an honor to serve on the board," Gilbreath said in a Garver press release. "And I look forward to making sure this program stays on the cutting edge of industry advancements to ensure graduates are ready to have an immediate impact in the field."

Gilbreath's goals for the board include creating its vision, bylaws, and structure, including the length of Gilbreath's term as president.

### Brown's Geraci, others named to Contractors HOF

Rick Geraci, P.E., FACEC was recently inducted into the Associated General Contractors of Arkansas' Construction Hall of Fame.

The Hall was established to recognize those who have made outstanding contributions to the construction industry in Arkansas.

Also inducted were Bruce McFadden, president and CEO of ICM; W. Kent Ingram Jr. of Razorback Concrete Company; and Charley Penix, AIA, of Cromwell Architects Engineers.

The induction ceremony was held April 28 at the Hillary Rodham Clinton Children's Library and Learning Center in Little Rock.

## Coalition forms to support Order of the Engineer



Geraci

Rick Geraci, P.E., FACEC of Brown Engineers and Dennis Ford, P.E., FACEC of FTN Associates recently met with Emily Wood, assistant director of development at the University of Arkansas' College of Engineering to explore initiatives to support chapters (called "links") of the Order of the Engineer in Arkansas. (See story, page 19.)



Ford

commitment to these ideals.

Current links include the University of Arkansas, Arkansas Tech University and the University of Arkansas at Little Rock. Visit [www.order-of-the-engineer.org](http://www.order-of-the-engineer.org) for more information.

## Brown Engineers adds three to staff

Celebrating its 10th year in business, Brown Engineers continues to expand its staff and services.

The Order of the Engineer was created to foster a spirit of pride, excellence and responsibility in the profession. A steel ring worn on the last finger of the dominant hand symbolizes the wearer's com-



Lynch



Speas



Rainwater

Austin Lynch, an experienced BIM designer, has joined the mechanical team after interning with Brown while finishing his BSME at the University of Arkansas.

Gary Speas, P.E., has joined Brown's automation team, bringing more than 40 years of industrial automation expertise. He is the creator

*Continued on next page*

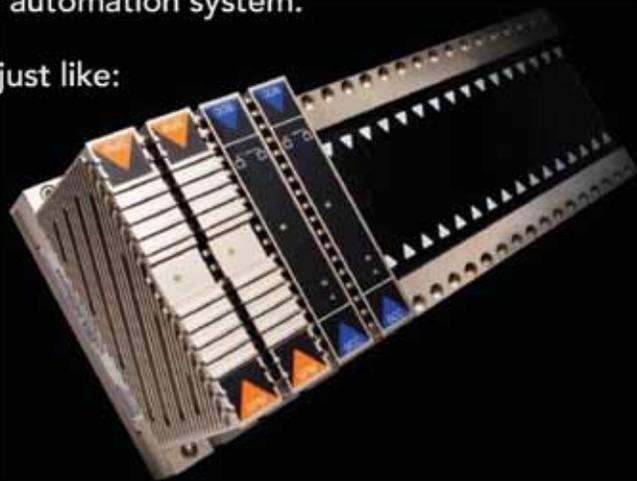
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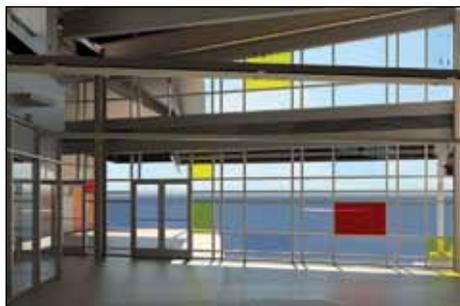
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## In the News (Cont'd)

of the Smart Frame™ automated picking system.

Ben Rainwater, Ph.D. has joined Brown's electrical team. Rainwater brings a solid understanding of both mechanical and electrical systems, with advanced research in emerging energy technologies, including electroceramics for increased battery storage.



The view from the Springhill dining hall to the playground.

### Greenbrier school opens; MEP was designed by Brown

Springhill Elementary School is ready to receive its first students this fall. Brown Engineers designed the mechanical, electrical and plumbing systems for the school, which was designed by Jackson Brown Palculict Architects of Little Rock.

Springhill can serve up to 600 students and features a heavily reinforced gymnasium that can shelter up to 1,100 students and residents through a tornado.

Greenbrier School District is growing steadily. Thanks to consistently balanced budgets and the support of its PTOs, school supplies for all students in grades K-7 will be provided by the district for the upcoming 2016-2017 school year.

### Hawkins-Weir opens office in Fayetteville

Van Buren-based Hawkins-Weir Engineers, Inc. (HW), a full-service professional civil and environmental engineering consulting firm, is opening a new office in Fayetteville.

The office will join HW's offices in Van Buren and Little Rock and will enable the firm to serve clients throughout Northwest Arkansas. The Little Rock office was opened in 2010.

Brett D. Peters, P.E., president and CEO of HW, said in a press release, "The primary focus in opening an office in Northwest Arkansas is to expand our geographic market base and assist those cities and communities in engineering their infrastructure needs. Secondary goals include the recruitment of professional staff and in the retention of our existing talent."

Founded in Van Buren in 1980, HW provides engineering services in water, wastewater, stormwater, streets and roadways, land planning and development, structural, surveying, and construction management. It serves municipal, industrial and private enterprise clients. Seventy-five percent of HW's work involves design and construction management of water and wastewater projects for municipal clients.

"Our business philosophy is simple: to provide the highest level of professional engineering services to meet our clients' individual needs regarding project budget and schedule," Peters said in a press release.

### Hawkins-Weir announces new engineer hires

Hawkins-Weir Engineers has announced the addition of two engineers to its staff.

Amin K. Akhnoukh, Ph.D., P.E., comes to HW after serving as an associate professor of structural engineering at the UALR College of Engineering and Information Technology.

A registered associate constructor by the American Institute of Constructors, he has been involved with the structural design of multiple residential, industrial, and heavy construction projects in Egypt and the Persian Gulf region.

He previously designed military projects in Cairo, Egypt, for the U.S. Army

Corps of Engineers, including residential, medical and recreational facilities and training rooms.

He has more than 30 publications in the area of high strength concrete, self-consolidating concrete, and prestressed concrete and has secured close to \$1 million in funding through research projects sponsored by the Arkansas Highway and Transportation Department, Arkansas Department of Higher Education, and Arkansas Science and Technology Association.

Steven Bishop, P.E., began his civil engineering career working as a field engineer on the Huey P. Long Bridge Widening Project in New Orleans. He designed steel and timber access platforms, developed a truss monitoring system for the bridge superstructure, and constructed work plans for assembling pre-fabricated steel truss members.

After returning home to Arkansas, he began working as a consultant specializing in the water/wastewater industry. With a previous consulting firm, Bishop was the lead engineer for a water treatment facility expansion project that clarified an additional 20 MGD of raw river water. He also worked as the design engineer for a 20-plus mile joint pipeline with multiple users.

A 2009 graduate of the University of Arkansas, he currently works in the Hawkins-Weir Engineers, Inc. Little Rock office.



Akhnoukh



Bishop

## FTN Associates adds three to staff



Witcher

FTN Associates has added three professionals to its staff.

Murray Witcher has joined FTN as a regulatory consultant after retiring from Entergy with more than 30 years

of experience. At Entergy, he guided the regulatory and environmental approval and site selection management for projects in Arkansas, Mississippi, southern Missouri and northern Louisiana.

Witcher also served as president of the Arkansas Municipal League in 2010-11 and has been an alderman in North Little Rock for 26 years. A native of Arkansas, he lives in North Little Rock with his wife, Becky.

Natalie Rogers has joined FTN Associates as a water resources engineer. Most recently, she was a research civil engineer with the U.S. Army Corps of Engineers Research and Development Center in Vicksburg, Mississippi. Rogers worked in the Water Quality and Contaminant Modeling Branch of the Environmental



Rogers



Studebaker

of Environmental Quality.

After earning her degree in Civil Engineering from Arkansas State University, she continued her education, focusing on water resources by earning a master's in Civil Engineering from Mississippi State University.

Rogers is a native of Rector and lives with her husband, Joseph, in Little Rock.

Laboratory, where she focused on sediment and contaminant transport processes and contaminated dredged material. She also gained experience with hydraulic and hydrologic modeling, inundation mapping, and surveying while employed as a civil engineer in the Dam Safety Division of the Mississippi Department

Elizabeth Studebaker is a geologist/hydrogeologist and works out of FTN's Fayetteville office.

She is a graduate of the University of Arkansas, where she received a Bachelor and Master of Science in Geology. She also has an Associate of Arts from Arkansas Northeastern College in Blytheville.

She resides in Fayetteville and enjoys hiking, camping, painting and biking.

## Stephens is named Mid-South Engineering head



Stephens

Mid-South Engineering has announced that Jeff Stephens, P.E., has been selected by the board of directors to assume the role of president.

Stephens recently celebrated his 30th anniversary with Mid-South and has a demonstrated track record of success as a project manager, the company said in a press release.

*Continued on next page*



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## In the News (Cont'd)

Elsewhere in the company, Lee Murphy, P.E., is resigning as president and is transitioning to board chairman, where he will focus his immediate efforts on project execution. Larry Stephens, P.E., will step down as chairman of the board and will continue to serve as a senior management consultant.

Additionally, Mark Culpepper, P.E., has been named executive vice president. In addition to continuing his previous duties, Mark will work with executive leadership to maximize operational performance of the company.

Mid-South Engineering is an Arkansas-based corporation with offices in Hot Springs; Cary, North Carolina; and Mil- linocket, Maine. The full service consulting engineering firm provides a broad range of professional engineering services. Its multi-disciplined staff has served state and local governments as well as industrial and commercial clients with a particular expertise within the forest products industry.



**JULIAN SANTA-RITA** poses with his "Spore" design.

## Santa-Rita with MWY designs Little Free Library

McGoodwin, Williams & Yates systems analyst Julian Santa-Rita recently designed a Little Free Library that will be permanently installed at the front entrance of Washington Elementary School in Fayetteville.

Little Free Libraries are a worldwide movement where free books are housed in small containers for members of the

community to "take a book – return a book." The libraries serve as gathering sites where visitors share their favorite literature and stories. They are meant to strengthen community and foster discovery, curiosity, and a love of reading.

Santa-Rita's design, which he calls "Spore," represents a playful analogy of library books being carried away by patrons like grains of pollen. He spent more than 40 hours on the design and construction of the ceramic and wood piece. The design is powered by a solar cell to provide night access and allow it to double as a campus art fixture.

"Spore" was among more than a dozen submissions to the Ozark Literacy Council's Little Free Library Design Project in collaboration with the University of Arkansas School of Architecture.

## Holmes-Smith added to MWY's engineering team

Jennifer Holmes-Smith, E.I., has joined the staff of McGoodwin, Williams & Yates, Inc. (MWY) of Fayetteville.

Holmes-Smith's area of focus is water resources and sustainability, which will fit with MWY's specialization in water and wastewater systems.

H o l m e s - Smith is a 2014 cum laude graduate of the University of Arkansas with a Bachelor of Science in Civil Engineering. Her study-abroad and international volunteer experience has included environmental engineering and renewable resource technology. While completing her BSCE, she traveled to Spain, Italy, Tanzania, France, Rwanda and Switzerland. She earned an Associate's Degree in General Science in 2011 from Northwest Arkansas Community College and is nearing completion for her Bachelor of Arts Degree in French from the University of Arkansas.



Holmes-Smith

Holmes-Smith was a recipient of the Brandon Burlsworth Memorial Scholarship, the Benjamin Gilman International Scholarship, and the Clara Carter Higgins national Summer Environmental Studies Scholarship.

## AWW&WEA hand out awards at annual conference

The Arkansas Water Works and Water Environment Association recently presented its annual awards at its 2016 Conference in Hot Springs.

Among the award winners were **Lance McAvoy**, deputy director of operations for the Fort Smith Utility Department, who was named Water Works Manager of the Year; and **Stanley Suel**, director of the Environmental Assessment Division for Little Rock Wastewater, who received the Glen T. Kellogg Hall of Fame Award.

Other AWW&WEA award winners were:

– **Coy Cothren**, maintenance supervisor for Jacksonville Water Works, who received the Water Outstanding Achievement Award for cities with populations more than 5,000;

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– **Bobby Parker**, water supervisor for Smackover Municipal Water Works, who received the Water Outstanding Achievement Award for systems serving populations fewer than 5,001;

– **Kevin McGill**, pre-treatment coordinator for Jacksonville Wastewater Utility, who won the Wastewater Outstanding Achievement Award for systems serving populations more than 5,000;

– **Randy Miller**, manager of the Murfreesboro Water and Wastewater System, who won the Wastewater Outstanding Achievement Award for systems serving populations fewer than 5,001;

– **Caraway Water and Sewer**, which won a Special Systems Recognition Award for wastewater systems serving populations fewer than 5,000;

– **The Decatur Wastewater Treatment Plant**, which won a Special Systems Recognition Award for wastewater systems serving populations fewer than 5,000;

– **Shumaker Wastewater**, which won a Special Systems Recognition Award for

wastewater systems serving populations fewer than 5,000;

– The city of **Prescott**, which won a Special Systems Recognition Award for water systems serving populations fewer than 5,000.

Water Environment Federation winners were:

– **Sam Zehtaban**, administrative operations manager at Jacksonville Wastewater Utility, who received the William D. Hatfield Award for outstanding performance as a wastewater treatment plant professional;

– **Thea Hughes**, general manager of Jacksonville Wastewater Utility, who received the Arthur Sidney Bedell Award for Extraordinary Service to the Arkansas Water Environment Federation;

– **Little Rock Wastewater**, which received the George W. Burke Jr. Safety Award for Populations Greater than 20,000;

– **Rhonda Fouts**, Fort Smith Utility water quality analyst, who received the

Laboratory Analyst Award and also was the Arkansas Water Environment Association's Laboratory Analyst of the Year;

The following award winners won Arkansas Water Environment Association awards.

– **Shawn Dorman**, Springdale Utilities distribution director, won the Collection Systems Award.

– **Dorothy Neely**, Beaver Water District education coordinator, won the James Bailey Educator of the Year Award.

– **Larry Oelrich**, Prairie Grove public works director, won the Mike Thomason Wastewater Manager Award.

– **Brad Stewart**, Springdale Utilities pretreatment manager, received the Pretreatment Professional Award.

– **Michael Kline**, Little Rock Wastewater loss and risk control administrator, was the Safety Professional of the Year.

– **Paul Richards**, Jacksonville Wastewater engineering/construction manager, won the Young Professional of the Year Award.



## In the News (Cont'd)

# New officers step in for ACEC/A, ASPE

A new slate of officers have taken office in both the ACEC/A and the ASPE.

New officers in the ACEC/A are: **president**, Andy Dibble, P.E., Mickle Wagner Coleman; **president-elect**, Mike Burns, P.E., Crafton Tull; **secretary**, Byron Hicks, P.E., McClelland Consulting Engineers; **treasurer**, James Montgomery, P.S., B&F Engineering; **state director**, Jerry Holder, P.E., Garver; **state director**, Steven Beam, P.E., Burns & McDonnell; **state director**, Mike Stengel, Michael Baker International; **state director**, Steve Pawlaczkyk, P.E., CEI Engineering Associates; **national director**, Dan Williams, P.E., Garver; **immediate past president**, Dee Brown, P.E., Brown Engineers.

The makeup of the officers has been changed to include four state directors rather than two, with only one that will ascend to treasurer.

New ASPE officers are, **president**, Alan Pugh, P.E., CFM, city of Springdale; **president-elect**, Paul Speers, P.E., Entergy Arkansas; **secretary-treasurer**, Fred Harper, P.E., Michael Baker International; **national delegate**,



Pugh

Clint Bell, P.E., CWB Engineers; **past president**, Brad Peterson, P.E., Crafton Tull.

## Emerging Leaders taking applications for new class

Applications are being taken for the 2016-17 Emerging Leaders class.

Emerging Leaders is an annual class sponsored by ACEC/A and ASPE whose purpose is to train engineers and other

design professionals in leadership, communication, and other so-called "right brain" skills.

The program starts each year with a Challenge Quest course where participants practice teamwork and develop relationships. Other classes include risk reduction, public speaking, a senior leadership roundtable, Business 101, conflict resolution, and state government. Class members earn professional development hours and will graduate at the ASPE State Conference in April 2017.

Anyone interested should contact Angie W. Cooper, executive director, at 501.541.5229, or email her at awcooper@arkansasengineers.org.

## Interested in serving on an ACEC committee?

The start of the new year is a good time for members of ACEC/A firms to volunteer for committees.

Current standing committees are:

- **Nominating and Election**, which is responsible for selecting officers;
- **Finance**, which prepares the budget;
- **Governmental Affairs**, which advises the membership on legislation and government policies;
- **Membership**, which helps recruit new members.

Ad hoc committees are:

- **Bylaws**, which considers changes to the bylaws;
- **Arkansas Highway and Transportation Department Liaison**, which builds the ACEC/A's relationship with that agency;
- **AGC/AIA/ABA Liaison**, which fosters ACEC/A's relationships with the Associated General Contractors, the American Institute of Architects, and the Arkansas Building Authority;
- **Environmental Agencies**, which coordinates with the Department of Health, the Department of Environmental Quality, and the Arkansas Natural Resources Commission;
- **Emerging Leaders Advisory Council**, which assists in developing the

Emerging Leaders program;

- **Education, Programs, and Seminars**, which establishes seminar topics;
- **Engineering Excellence**, which plans and coordinates the Engineering Excellence Awards;
- **Public Relations**, which reviews the ACEC/A's communications program and develops its media efforts;
- **Surveying Liaison**; which coordinates efforts with Arkansas surveyors;
- **Federal Agencies**, which coordinates with federal agencies;
- **ACEC/A State PAC Trustees**, which coordinates contributions to state legislators;
- **ACEC National PAC Champion**, which leads fundraising for the national PAC and coordinates with the national office on contributions to congressional candidates;
- **Energy**, which works with the state Energy Department on developing new energy codes for Arkansas;
- **Fellows**, which maintains a list of qualified candidates to submit to the national organization for consideration into the College of Fellows.

In addition, a **Professional Conduct and Ethical Standards Committee** is specially appointed to review reports of misconduct or other violations of the ACEC Professional and Ethical Conduct Guidelines by Council members.

Anyone who would like to serve on a committee should contact Angie W. Cooper, executive director, at 501.541.5229, or email her at awcooper@arkansasengineers.org.

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# New year, new opportunities

As each January rolls around, many people make well-meant new year's resolutions that, unfortunately, don't usually work out. Within three weeks, the gym membership card is in the back of the wallet, the classical literature books remain unopened by the bedside, and the alarm clock has been reset back to 6:30 a.m.

July begins a new year with ACEC/A and ASPE, which means it's a good time for all of us to renew our commitment to these organizations and to the engineering profession. Let us count the ways to do that.

**1. Become a member.** Arkansas Professional Engineer magazine is distributed to almost every licensed professional engineer who works for an ACEC/A firm. Many are not members of the ASPE. If that's you, I encourage you to join. First, it makes financial sense, because engineers get more out of it than they pay into it, including free online seminars, access to a job board, and discounts provided by a number of member benefit partners. Aside from those raw financial calculations, there's also the fact that ASPE, as part of the NSPE, is the only organization supporting the importance of licensure in the engineering profession.

**2. Join a committee.** Membership in professional organizations is the foundation for involvement in our industry. If you want to deepen your involvement, without necessarily going too deep, there are still many open slots on the various ACEC/A and ASPE committees, and even if they seem full, we'll make room for you.

Committee membership is probably the best way to become more involved, because the demands are reasonable – a few meetings a year – and because fellow members can keep us accountable without making us feel judged. The rewards of going to four meetings a year include a better understanding of the organization, a feeling of greater engagement, and new and improved relationships with fellow engineers. The punishment for missing a meeting? Someone might say they missed you. In other words, committee membership includes a big carrot and a tiny stick.

**3. Emerge as a leader.** Younger engineers who want to be involved have another option: participating in Emerging Leaders. Every year, up to 10 industry professionals improve their creative, managerial and communication skills through the year-long program. The program begins with a Challenge Quest course where participants develop relationships with each other while performing tasks that require creative thinking and communication. From there, they gain knowledge and skills in risk reduction, public speaking, conflict resolution, and other areas.

**4. Get political.** Finally, you may have noticed that we've entered into another election season. ACEC/A is working with the national organization to make sure voters have information about the candidates. While the presidential race will attract most of the attention, we'll be focusing on the races where we can actually make a difference – for U.S. Congress and for the



Angie W. Cooper  
Executive Director

state Legislature. Some races feature candidates who can work with us versus candidates who can't, or won't. As the nation's builders, it's important that engineers know the difference and then participate in the political process.

Remember that after the election comes the actual work of governing. Congress must appropriate money for transportation each year and, as of this writing, has not done so for fiscal year 2017. While the Arkansas Legislature did provide for additional transportation funding in the last special session, it wasn't enough to address the state's long-term funding needs. Legislators are considering what to do next, and you can be certain that stakeholders concerned with other state

needs, including schools and human services, will make their voices heard. The pie is only so big, and engineers must ensure that important transportation and infrastructure needs aren't ignored.

So once again, an old year has ended and a new one is beginning. Let's renew our commitment to make this the best year yet for ACEC/A, ASPE, and the engineering profession.

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**BILL SIGNING.** Gov. Asa Hutchinson signs the highway funding bill into law May 23. Behind him are, from left, the two primary legislative sponsors, Sen. Bart Hester, R-Cave Springs and Rep. Andy Davis, R- Little Rock; Arkansas Highway Commission members Alec Farmer and Robert Moore Jr.; Senate President Pro Tempore Jonathan Dismang, R-Searcy; and Arkansas Highway Commission members Frank Scott Jr. and Tom Schueck.

## Highway bill signed. Now what?

The governor and legislators agreed on a short-term package that does enough to qualify the state for a federal match. But many say more needs to be done.

**By Steve Brawner**  
Editor

Gov. Asa Hutchinson signed a five-year highway bill into law May 23, hours after the bill passed the Senate in a special session, and said any longer term plan should come as a result of a voter-initiated act.

The legislation will raise about \$50 million a year over the next five years in order to make the state eligible for \$200 million a year in federal matching funds available through last year's federal Fixing America's Surface Transportation Act.

Present at the bill signing were most of the members of the Arkansas Highway Commission and Arkansas Highway

and Transportation Department Director Scott Bennett, P.E. They and other advocates have said the state needs more money for highways.

Hutchinson described the five-year mechanism as an intermediate plan, saying, "I do believe that there's a case that can be made for a long-term highway plan. These commissioners make that case every day to me."

However, Hutchinson said that a plan that perhaps would raise taxes for highway funding should be considered through a voter-initiated act.

Hutchinson signed the bill hours after the Senate voted 21-10 to pass HB1009 by Rep. Andy Davis, R-Little Rock. The emergency clause was then passed moments later, 29-3, allowing the bill to go into effect July 1.

The legislation creates the Arkansas Highway Improvement Plan of 2016. For 2017, the state will move \$40 million in

rainy day funds to a newly created Highway Transfer Fund. In the future, that fund partially will be financed by deposits of 25 percent of state surplus funds.

Also, a Securities Reserve Fund will generate \$1.5 million for the Highway Transfer Fund in fiscal year 2017, \$20 million each year from 2017-2020, and \$25 million in 2021. That money is generated through the state's portfolio of investments that is managed by the state treasurer's office.

The legislation dedicates to highways additional money generated by diesel taxes as well as revenues from the half-cent sales tax passed by voters in 2012. Some of those tax dollars have been flowing into general revenues to fund other state needs.

Highways traditionally have been funded through motor fuels taxes and federal funds, not from general revenues, which are used for other needs.

With some general revenues now going to highways, legislators wanted the ability to better review activities of the department, which is constitutionally independent.

Because of that desire, the legislation created a 20-member Highway Commission Review and Advisory Subcommittee of the Arkansas Legislative Council to review Highway Commission rules and “other State Highway Commission matters (the subcommittee) considers necessary to perform its duties under this section.”

Sen. Keith Ingram, D-West Memphis, denounced the bill on the Senate floor. He said it doesn’t offer a long-term solution for the state’s highway funding needs and said the state is putting off expenses that will grow over time. Ingram said the bill doesn’t actually rely on surplus funding because the money inevitably will be carved out beforehand.

“We can spend dimes now that will save dollars in the future,” he said.

In the bill signing ceremony, Hutchinson said the state will not have a problem with surpluses because it passes conservative budgets and has averaged a \$48 million surplus each year over the last 10 years. The state had a budget surplus of \$177 million for fiscal year 2016

The Legislature again meets in regular session in January, where the question of finding more money for highways again will be debated. The money provided by the state legislation and the matching fed-

eral funds can be used only on federally qualified roads – not lesser traveled state roads.

In an interview June 22, Davis said he is hoping to put together a bill raising about \$100 million for state highways focusing on maintaining and improving existing roads. Funding could come through several processes, including transferring from general revenues some of the funds generated by sales taxes from new and used cars. That money currently is used for other state needs.

Also possible is a fuel tax increase offset by income tax reductions – though anything that results in a net tax increase would have to go before the voters, Davis said.

He said there is support in the Legislature for further action. “I think enough people still believe that we need to do

## To sum it up ...

- The Arkansas Highway Improvement Plan of 2016 will raise about \$50 million a year, making the state eligible for \$200 million a year in federal funds over five years.
- Funding sources include state surplus funds and a Securities Reserve Fund generated by state investments.
- This is the first time general revenues have been used to fund highways, so legislators created a subcommittee to pay closer attention to the constitutionally independent Highway Commission.
- Many believe more should be done for highways. Legislators will consider other funding sources in 2017.
- Gov. Hutchinson says a fuel tax increase would have to come through a voter-initiated act.

something for additional highway funding,” he said.

Among those voting for the bill was Sen. Bill Sample, R-Hot Springs, who was one of four senators who had proposed a motor fuels tax that would rise to 8 cents per gallon to fund highways.

Sample said he and other legislators are researching options, but there is not yet an organized movement in support of more highway funding. He said he is “pretty sure” that an effort for more long-term funding will be made. He agreed that any increase in the motor fuels tax will need to go through the voters.

Asked if there is any appetite for increasing that tax, Sample said, “I’ve had some constituents that’s been very vocal with me about that they think that that’s probably the only way that we should be going about it.”

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## ACEC/A Member Spotlight

# Garver: Growing, with deep roots

Founded in 1919 by Neal Garver, it now employs 430, including 218 engineers

Garver is a growing firm with many branches and deep roots.

The firm was founded in 1919 by Neal Garver, who had come to Arkansas from Illinois to help build a plant producing picric acid during World War I and decided to stay. He later was joined by his son, Mark.

Dan Williams, P.E., Garver president and chief executive officer, said the firm spent its first 80 years as a one-office company. That spirit hasn't changed even as the firm has grown to about 430 employees – 218 of them engineers – working in 18 offices located in 10 states from Arizona to Kentucky.

"We have a really kind of one-for-all, all-for-one mentality," he said. "We talk a whole lot about unity and enjoying working with each other, and that's the thing that was there when I came to work back in '82, and the thing that we try to maintain."

The firm is in the midst of a growth spurt. When Williams came to the company in 1982, it had about 100 employees. By 2006, it had grown to 200. Since then it has doubled. Much of that growth can be credited to Brock Johnson, P.E., the firm's previous CEO from 2003 until his death in 2012. Johnson was the driving force behind Garver developing its aviation line – now one of the firm's largest specialties with transportation and water along with others – as well as its becoming the state's first engineering firm to build a LEED-certified headquarters.

Williams said Garver began trying to grow in the early 2000s, believing it would enable the company to compete for larger projects and attract and retain the best talent.

"We don't have any goal that says we're going to be this size in year so-and-so or anything like that," he said. "We just think that provides the most opportunity for our folks."

The firm is committed to being employee-centric and maintaining a work-



**BIG PROJECTS FOR A GROWING FIRM.** Top, Garver performed property acquisition services, surveys, preliminary planning and design, final airfield design, hangar and terminal building design, and construction support services for Conway's new \$30 million airport project. Below, Arkansas Water Team Leader Aaron Stallmann, P.E. performs a chemical study at a Little Rock Wastewater treatment plant.



requiring Garver to manage nine firms. For Garver, even after 97 years in business, it's breaking new ground.

"We haven't done program management on this scale before," Williams said. "So, yeah, I guess the short answer is it has been a new experience, but it's been a fantastic opportunity to serve the people of central Arkansas, and that's something Garver's been doing for a long time."

The most publicized part of the program has been the 30 Crossing project expanding the I-30 bridge across the Arkansas River. The initial plans attracted opposition from stakeholders concerned it would route traffic too quickly through Little Rock, harming the city's redeveloped urban core. In response, Garver has developed an innovative design with six primary lanes and four connector lanes meant to efficiently move traffic in all directions. Williams said the give-and-take has made the firm better and more aware of how engineering solutions impact the public.

After growing from about 100 employees in 1982 to quadruple that amount now, what's next for Garver?

"Really, we want to just keep doing what we're doing," Williams said. "Like I said before, we don't have a plan that says we're going to reach a certain number and stop. We think we have to continue growing. We hope that is steady, managed growth, and then we'll just see where that leads."

life balance. The North Little Rock office was designed so that employees can see outside. Most of the staff works on flex-time and is off work on Friday afternoons. The self-insured firm has a full-time wellness director to help employees maintain a healthy lifestyle.

With almost a century of history, it's hard to narrow the company's portfolio to a few signature projects. Recent big ones include the newest runway at the Bill and Hillary Clinton National Airport in Little Rock; the I-244 Inner Dispersal loop in Tulsa; and a master plan effort for the Trinity River Authority of Texas on the largest wastewater treatment plant west of the Mississippi River. The firm has done work across the country, including in Hawaii, and even has worked in Guantanamo Bay, Cuba.

Perhaps the firm's most important project is serving as program manager for the state of Arkansas' Connecting Arkansas Program, a \$1.8 billion, 10-year effort

# The Order of the Engineer

The Order of the Engineer (OOE) was created to promote a deep sense of pride and responsibility in the profession, and to keep engineers mindful of and dedicated to these basic principles: that the primary purpose of engineering is service to the public; and that all members of the engineering profession share a common bond.

Initiates vow to honor the Obligation of the Engineer (see below) and wear a steel ring on the little finger of their dominant hand as a reminder to themselves and the public of their ethical and professional duty. There are no dues or meetings (other than the Pledge Ceremony). The Order exists solely to foster a sense of honor, unity of purpose and lifelong commitment to one's pledge.

The Obligation of the Order of the Engineer was inspired by Canada's "Ritual of the Calling of an Engineer," which was created in 1926 after poor engineering contributed to devastating collapses of the Pont de Quebec Bridge in 1907 and 1916. Canada began its tradition with an iron ring presented in a private ceremony, following recitation of an oath penned by noted author Rudyard Kipling, a strong advocate of the engineering profession who also created the first induction ceremony.



**By Rick Geraci, P.E.**  
**Brown Engineers**

The first U.S. pledge ceremony of the Order of the Engineer was held on June 4, 1970, at Cleveland State University. Now, ceremonies are conducted by Links (local sections) of the Order, organized by accredited engineering schools and/or ACEC and NSPE chapters across the United States. As an ACEC Fellow and a member of the Order, I'm passionate about increasing awareness of and participation in the Order of the Engineer.

The ACEC College of Fellows will induct interested ACEC members into the Order of the Engineer at the 2016 ACEC Fall Conference in Colorado Springs. For more information, contact Daisy Nappier at [dnappier@acec.org](mailto:dnappier@acec.org) or at 201.347.7474.

## The Obligation of the Engineer

*I am an Engineer. In my profession I take deep pride. To it, I owe solemn obligations.*

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*As an Engineer, I pledge to practice integrity and fair dealing, tolerance and respect, and to uphold devotion to the standards and the dignity of my profession, conscious always that my skill carries with it the obligation to serve humanity by making the best use of Earth's precious wealth.*

*As an Engineer, I shall participate in none but honest enterprises. When needed, my skill and knowledge shall be given without reservation for the public good. In the performance of duty and in fidelity to my profession, I shall give the utmost.*

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# FTN recognized for constructed wetlands

Firm uses low-maintenance, low-cost solution to help clients with wastewater

FTN Associates' use of constructed wetlands for wastewater treatment systems made it a finalist for the Arkansas Department of Environmental Quality's inaugural Technology Award.

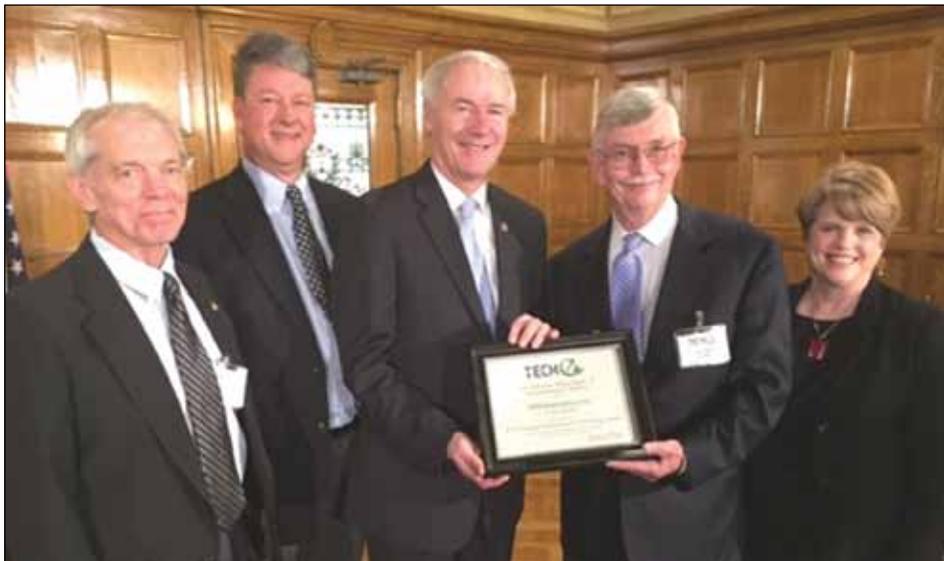
The firm was recognized at a ceremony with Gov. Asa Hutchinson and ADEQ Director Becky Keogh. Aerojet Rocketdyne Solar Farm won the award for having the largest solar power project in the state. Goodwill was the other finalist. FTN's Rex Robbins, P.E.; Roger Dodds, P.E.; and President Dennis Ford, P.E., accepted the award.

FTN was nominated for the award by one of its clients, Sammy Bates of Remington Arms Company. The award stems from FTN's use of constructed wetlands using readily available alternative feedstocks for Remington Arms, Acme Brick Company, and the Entergy Couch Plant. FTN has already won ACEC/A Engineering Excellence Awards for the Remington and Entergy projects.

FTN is working with three other industrial facilities that are pilot-testing such a system – one to remove heavy metals from storm- and groundwater seepage, one to remove selenium, and one to reduce toxicity associated with exposed lignite. It has shared its findings openly without seeking a patent.

In the 1990s, FTN began recognizing that constructed wetlands – used primarily with mining facilities in the past – could help industries reduce discharges of heavy metals, including lead, copper and zinc, in order to protect receiving streams. That realization came at a good time, because by the late-1990s, regulators were enacting stringent limitations on those metals that were difficult to meet with conventional chemical methods. Natural wetlands also can be insufficient because the process is too slow and requires too much land.

FTN's first use of the technology occurred at the Acme Brick plant in Perla. The client wanted a system that would reduce sulfate but not require active mechanical treatment, so FTN created



**AWARD WINNER.** Top, FTN was recognized as a finalist for the Arkansas Department of Environmental Quality's inaugural Technology Award. Pictured from left are Rex Robbins, P.E., FTN senior project manager; Roger Dodds, P.E., FTN vice president and senior project manager; Gov. Asa Hutchinson; Dennis Ford, P.E., FACEC, FTN president; and Becky Keogh, Arkansas Department of Environmental Quality director. Above, FTN's first use of the technology occurred at the Acme Brick plant in Perla. After 22 years, the system has required little attention.

a pilot program where it constructed a completely gravity-driven wetland system that uses no pumps. Rice hulls and chicken litter were chosen among other alternatives as the organic carbon substrate that would create the biochemical reactions. While sulfate reduction was the original reason for the system, it also proved so effective at removing metals such as aluminum, iron and zinc that permit limitations were never established. After 22 years, the system is still

meeting standards with almost no attention required.

So far, there's been no need to replace the chicken litter or the rice hulls, though engineers are starting to study when that might be necessary.

"This system was very specifically designed to pretty much be hands off. ... They literally had to do very little because there's nothing to maintain," said Dodds, P.E., a senior project manager and vice president.



**INNOVATIVE SOLUTIONS.** Top, FTN developed for Entergy a rock-reed constructed wetland using some of the same concepts as used at the Acme Brick plant. Right, a rock-reed constructed wetland has helped Remington Arms meet its NPDES permit.



FTN began working with Entergy in 2003 to develop an alternative for new lead, copper and zinc limitations at a gas-fired electric generating station in south Arkansas. FTN proposed a rock-reed constructed wetland using some of the same concepts as used at the Acme Brick plant. Two ponds grew algae as the organic carbon source that promoted the formation of a metal sulfide that locked up the metals and kept them from flowing into the receiving stream. Nutrients and sulfate were removed by algae and anaerobic processes. The system requires no chemicals and little manpower and continues to be in use even though the plant has been idled.

In 2006, Remington Arms sought help meeting stringent heavy metal limitations for its National Pollutant Discharge Elimination System permit. A rock-reed constructed wetland has successfully helped the company meet requirements

without chemicals and little manpower. FTN found that the water already contained enough sufficient organic material and sulfate to reduce the sulfide, so no additional material was needed.

The method has provided an alternative to reverse osmosis, which requires passing the water through a membrane using electric pumps and requiring

chemicals that clean the membrane. Rejected metals then must be managed using another process.

Dodds said the three sites are the only ones in Arkansas that he's aware of that are using constructed wetlands for wastewater treatment.

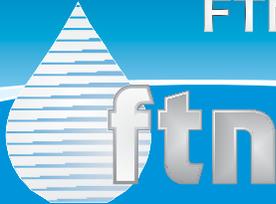
"I think we do look for innovative solutions, something that's maybe outside the box, and we feel confident with our science and with our approach that we're willing to take some of those outside the box alternatives. ... Engineers tend to be a little bit conservative in their approach and rather just buy something off the shelf and apply it to that, and that's not what we did here," he said.

The process has been used in mining. While FTN didn't invent a solution, it did engineer one.

"We didn't come up with anything that nobody had ever done before," said Robbins, also a senior project manager. "It was mainly going into these unique situations, into these individual situations, and figuring out what food source, how could it be configured, and being able to come up with individual solutions for these different things, and applying the technology that was out there."

Dodds said the skills of FTN's staff members help the firm seek new answers. FTN's first project manager with the Acme project was a scientist with a wetlands background.

"Understanding the biology and understanding the natural part of that process isn't something that every engineering firm has in house to be able to look to," he said. "It doesn't have the breadth of experience and expertise to be able necessarily to go, 'Let's march down this road.'"



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## ASPE Annual Conference

# B&F's Beavers named Engineer of Year

At the ASPE's Annual Conference, B&F's Dustin Ward was named Young Engineer of the Year

By Steve Brawner  
Editor

Don Beavers, P.E., founder of B&F Engineering, was named Engineer of the Year at the 2016 ASPE Annual Conference, while Dustin Ward, P.E., also of B&F Engineering, was named Young Engineer of the Year and Lane Crider, P.E., of McGoodwin, Williams & Yates received the Distinguished Service Award.

The conference April 7-8 also included a presentation of new 2015 professional engineers as well as the graduation of the seventh Emerging Leaders class, which is a program that teaches creative, communication and management skills. The current ASPE president, Brad Peterson, P.E., of Crafton Tull, "passed the gavel" to next year's president, Alan Pugh, P.E., a certified floodplain manager with the city of Fayetteville.

Beavers' firm, which he founded in Hot Springs in 1970, has provided municipal, planning, water, wastewater, solid and hazardous waste, and street and damage services for public and private clients.

"In my life, I've been fortunate to have some opportunities, and I just want to say to each of you, when you get those chances like I have, take it and do your best," he said.

Beavers has been active in ASPE and in his community. In 1969, he helped form ASPE's Hot Springs chapter, and he served as ASPE legislative committee chairman for more than a decade. He has testified before House and Senate committees regarding engineering, business, taxes and infrastructure concerns. He has also served as president of the Hot Springs Chamber of Commerce and as a 35-year member of the Garland County Industrial Development Board, and he helped establish softball and basketball associations for senior citizens. He's also served as a Sunday school teacher and superintendent and as a Bible study teacher for more than 25 years.

Ward won the Young Engineer of the Year Award given to an individual under



**AWARD WINNERS.** Top photo, ASPE's president, Crafton Tull's Brad Peterson, P.E., CFM, LEED AP, right, and, left, Michael Aitken, P.E., LEED AP, NSPE's Southwest Region representative, present the ASPE Engineer of the Year Award to Don Beavers, P.E., founder of B&F Engineering. Middle photo, Peterson and Aitken present the Young Engineer of the Year Award to Dustin Ward, P.E., also of B&F Engineering. Bottom photo, Lane Crider, P.E., of McGoodwin, Williams & Yates receives the Distinguished Service Award.

Springs area. His work has included designing and building superstructure systems, equipment platforms and foundation systems. Ward passed his 16-hour NCES structural engineers exam in 2015 and

age 35. He is a civil structural engineer responsible for industrial, commercial and transportation projects in the Hot

earned his master's degree from the University of Arkansas. While pursuing that degree, he researched lightweight, self-



**PASSING OF THE GAVEL.** Crafton Tull's Brad Peterson, P.E., right, congratulates ASPE's incoming president, Alan Pugh, P.E., a certified floodplain manager with the city of Fayetteville.

consolidating concrete and authored and co-authored several technical publications.

Ward, a Benton resident, has served as president and vice president of the ASPE's Hot Springs chapter and has served as treasurer of the Structural Engineers Association of Arkansas. He led a trap shooting contest to benefit the Hot Springs area's FIRST Robotics competition.

Ward said God has blessed him and said he's been blessed with good parents. His father manages a lumber mill in Murfreesboro, where Ward said he learned his work ethic and was introduced to mechanics.

Crider has been an engineer with McGoodwin, Williams & Yates for 26 years, becoming a vice president and partner in 2004. He has been responsible for project planning design and construction of transfer and treatment systems, storm drainage design, and sanitary construction. He has licenses in four states.

Crider has been very active in engineering associations. In 2000, he was named the ASPE's Young Engineer of the Year. He served as president of the Northwest Arkansas chapter in 2007-08, became a state officer in 2010, and was ASPE's president in 2013-14. He was inducted into the Arkansas Academy of Civil Engineers in 2013 and has been active in ACEC/A, the American Waterworks Association, the Water and Environmental Federation, and the Arkansas Waterworks and Water Environmental Association, where he is board chairman. He was Rotarian of the Year at the Fayetteville Northside Rotary Club and was board chairman of the First Christian Church in 2007, where he oversaw a \$1.5 million capital improvement project.

Meanwhile, Secretary of State Mark Martin, a professional engineer, challenged the engineers to ensure their advocacy efforts focus on what's best for society rather than what's best for the profession. Martin said that engineers are a respected profession considered to add significant value to society, but the profession's public standing has been in decline in recent years. He attributed that to the profession's advocacy efforts.



**SECRETARY OF STATE MARK MARTIN, a professional engineer, speaks at the Annual Conference.**

"We have to be careful that in our advocacy and using government, that we're not just being self-serving," he said. "And I

*Continued on next page*

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have observed a very lot of that in engineering circles to where engineers are behaving in a lot of cases a lot less like professionals and more like a trade union.”

Martin said engineers should focus their efforts on educating the public and should be careful about using government to implement unnecessary requirements and standards.

“In other words, we can’t protect everybody by law, and in those cases, we should not be advocating for laws that hinder the process of the free market. ... The more that we become involved in using the force of the political system to bring about the ends that we believe are good, the less our profession will be respected,” he said.

Martin, whose duties include administering state elections, encouraged the engineers to vote. He said that declining voter turnouts lead to oligarchies, where a small group of people hold power, which he said is the most common form of government in human history.

“You’ve got to go vote,” he said. “If you’re not participating in our democratic republic, you’re allowing it to devolve into a form of government that has actually led to oppression across the centuries of mankind.”

Martin said he brought an engineers’ perspective to his office. For example, he created a planned maintenance schedule for the State Capitol, where he said maintenance had been delayed 30-60 years in some cases. Also, because he created a work breakdown structure for elections, it wasn’t a problem when the Legislature moved this year’s primary elections to March. His office just moved the dates up.

Martin said his office is working to coordinate the work of various state agencies so that one day businesses will be able to deal with a single office instead of multiple ones.

“All of those things should be able to be done in one stop without filling out the same address, EIN, this paperwork, that paperwork, the names and everything multiple times,” he said. “One of the things that we found out is that when people go fill paperwork out, an initial may be left out there, or ‘LLC’ left off of the name here, and as far as (the Department of Finance and Administration) is concerned and other state agencies are



**EMERGING LEADERS.** The Emerging Leaders program teaches “right-brain” skills such as communication and management. This year’s graduates were, from left, Corey Lucas, Pack Engineering; Ben Kuddes, P.E. Crafton Tull; Daniel George, P.E., B&F Engineering; Mary Kennedy, E.I., Garver; Scott McReynolds, P.E., Garver; Aaron Smith, P.E., CEI; and Matthew Vinyard, P.E., MCE.



**CONFERENCE SPEAKERS.** Left, Rick Geraci, P.E., FACEC, of Brown Engineers made a presentation about engineering ethics, while Ken Estes of BancorpSouth Insurance Services presented a case study about risk management.

concerned, there’s two and three and four actual businesses on the books that are slightly different, that do not reflect the same business.”

The conference included presentations about various engineering subjects, including a presentation on engineering ethics by Rick Geraci, P.E., FACEC, of Brown Engineers, and a case study about

risk management by Ken Estes of BancorpSouth Insurance Services. Engineers also attended an Arkansas Travelers baseball game.

The Annual Conference’s sponsors were BancorpSouth, the U.S. Green Building Council, Jack Tyler Engineering, McGeorge Contracting, and Shupe and Associates.

# Beavers: Experience offered options

The ASPE Engineer of the Year had plenty of choices early because he developed his skills. His firm, B&F Engineering, had choices because it could do everything under one roof.

By Steve Brawner  
Editor

When Don Beavers, P.E., P.S., enrolled in college, he didn't have much money and didn't necessarily want to start his own firm. Instead, what he really wanted was options.

So he worked for different entities in different fields. As a freshman at Arkansas A&M College, he worked with a surveyor – in fact, briefly entered into a partnership with him. That summer, he did watershed work for the Soil Conservation Service. The next summer, he did crop measurements for the Agricultural Stabilization and Conservation Service. He transferred to the University of Arkansas for his junior and senior years, where he researched the effect of mixing and placement temperature on asphalt pavements. He wrote the first computer program used by the engineering department to teach computer use in structural design. After his first summer at the University of Arkansas, he went to work for Commonwealth Associates, an engineering firm that was designing the nation's first 500,000-volt transmission line. Beavers worked on the section of line running from Mabelvale to Memphis and ended up sitting out a semester so he could continue on that job. The next year, he joined the Fort Smith office of Hot Springs-based Smith Engineering, where he worked on a large sewer system and made improvements to the Fort Smith airport.

When he graduated, he was offered jobs by several companies. He turned down the two highest-paying offers because he wanted to stay in Arkansas.

"It's not just a matter of taking the largest offer or these kind of things. It's a matter of going where you want to be," he said.

Beavers, 73, who had been raised by a farm laborer in England, Ark., completed his requirements during the summer of

*Continued on next page*



**ENGINEER OF THE YEAR.** Don Beavers, P.E., P.S., stands in his office that he built in 1980 after starting the firm in 1970. It has averaged 45-50 employees for the past 20 years and has employed engineers from a variety of disciplines.



**MEN AT WORK.** Beavers, center, reviews plans for a B&F Engineering job. Among his clients have been cities, industry partners, and Oaklawn Park, for whom he designed and supervised construction of the running surface.

1966 and went to work for Smith Engineering. A few years later, he decided to start his own firm, which he wanted to be guided by certain principles. As in college, he wanted options – to be able to do municipal, private and industrial engineering. He wanted a multifaceted company with a variety of engineering disciplines and surveyors working in the same office under the same roof to improve coordination. A registered surveyor himself, he was determined to make sure that area of the business was skilled and professional. He knew he wanted to charge a flat fee or an hourly rate, believing it was fairest to the clients, and wanted to make sure jobs were designed properly, but not overdesigned.

### Open for business

The company opened for business in March 1970 in an office on Airport Road. Beavers began growing the firm immedi-

ately by hiring a three-man survey crew, a secretary and a draftsman.

Beavers didn't waste time making his mark in Arkansas engineering. In 1970, he designed the first tertiary wastewater facility in Arkansas for a subsidiary of Weyerhaeuser after state regulators with the Department of Health and what is now the Department of Environmental Quality had said a tertiary level was necessary for wastewater being discharged into Lake Hamilton or Lake Catherine. The two agencies then adopted Beavers' design as the state's standards.

By the time he incorporated the company in January 1972, the staff had grown to 18. Bill Fletcher, P.E., joined the firm later that year as a stockholder, and the company's name was changed to B&F Engineering in January 1973.

In the early years, people would ask him if he were busy. He would tell them he was always either trying to get work

done or trying to attract work. "There's no non-business area, particularly for the person at the top of it," he said.

The firm continued to grow. In 1980, it began building a new headquarters behind its original building, now a day care. It moved into those new headquarters in January 1981. For the past 20 years, B&F Engineering has employed between 45-50 people, including about 11 engineers. It has typically tried to keep on staff a mechanical and chemical engineer. Surveying is its largest division and has five or six crews working in several states. Structural engineering is the second largest division, with crews working in 10 states. The firm has had projects as far west as California. It does civil engineering for water and wastewater projects and for solid waste collection and disposal projects. It's done water treatment plants for Murfreesboro, Paris and Clinton; water and wastewater projects for Beebe; and

projects for Planters peanuts, Maybelline, and the U.S. Army Corps of Engineers. Beavers in 1983 designed and supervised construction of the running surface at Oaklawn Park and continues to advise track maintenance crews.

Beavers has been active in state engineering activities for many years. He became a member of the National Society of Professional Engineers in 1966, the year he entered the profession, and helped establish the Hot Springs ASPE chapter in 1969. Among that chapter's accomplishments was helping ensure that the Hot Springs city engineer and the water and wastewater manager are registered professional engineers. He served on the ASPE State Board and was chairman of the Society's Legislative Committee for more than 10 years.

He's made his mark in state and national politics. In 1967, he appeared before Arkansas House and Senate committees to help pass the first surveyor's registration law. Two years later, he appeared before legislative committees in support of a law saying candidates for county surveyor must first be registered. He helped pass the state's qualifications-based selection law for engineering and helped pass the National Council of Examiners for Engineering and Surveying model law. He's been on the board of directors of the Arkansas Good Roads/Transportation Council since 1978. Meanwhile, he testified before the U.S. Senate Banking

Committee to oppose the IRS eliminating the tax deduction for industrial revenue bonds. Congress ultimately did prohibit the regulation. He also testified before the U.S. House Ways and Means Committee against an IRS regulation. In 1985, he worked with a House and Senate conference committee to help pass a transportation bill.

He has been active in the Hot Springs community since he arrived in town. He has been involved with the Hot Springs Chamber of Commerce since 1966 and served on the board of directors for 28 years, including serving as president of the Chamber in 1984. He served on the board of directors of the Garland County Industrial Development Corporation during a time when the Mid America Industrial Park was created. He served as an alderman in 1971-72, when the city established its first solid waste collection and disposal system, started its parks program, and began major improvements to its water and wastewater system. Now the entire city and most of the surrounding areas are served by public water and wastewater facilities. He worked with what were then the Garland County Community College and the Quapaw Technical Institute to collaboratively establish training programs for engineering technicians and electronic technicians. Then he served as an instructor until full-time teachers could be hired. He's also been president of the Oaklawn Lions

Club, a Sunday school teacher and director for 20 years, and coached little league football, baseball and softball for more than 20 years. He also chaired a group that established senior softball and basketball leagues.

"Anybody's personal growth depends a little bit on the growth of your community, and you should be a part of that growth of the community," he said.

Beavers stepped away from full-time employment three or four years ago and has been weaning himself from the office every since. Now, the president is James Montgomery, P.S.

Retirement has given Beavers a chance to focus on other things, including his two adult children and two adult grandchildren. He likes to travel with his children, preferring to see new places.

"To me, I want to go to a place I've never been before, and I want to see how the people live," he said. "I want to look at their architecture, the roads, the whole bit. Because I want to know what's going on in other places."

Beavers has been working in engineering for half a century and has seen a lot of changes. What's next?

"I think there will always be a demand for engineers. ... The engineering is always going to be there: civil structural, civil environmental, mechanical, electrical, and so forth," he said. "Those are going to be there as long as there's growth anywhere."



Donald E. Beavers, P.E.  
ASPE Engineer of the Year



**Congratulations, Don and Dustin,  
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Dustin B. Ward, P.E., S.E.  
Young Engineer of the Year

# Ward: B&F a place to learn craft

ASPE Young Engineer of the Year likes to bounce ideas off fellow B&F engineers to solve problems

For Dustin Ward, P.E., working at B&F Engineering has been an opportunity to learn from experienced engineers while also mastering his craft.

“I love ... being able to bounce ideas off other engineers and problem-solving together,” he said. “Trying to solve your own problems, but still having that resource available to bounce ideas off other engineers.”

Ward, 31, is this year’s ASPE Engineer of the Year, which is awarded by the Society to an outstanding engineer under the age of 35.

A structural engineer, his responsibilities include industrial, commercial and transportation projects in the Hot Springs area. He has designed and built superstructure systems, equipment platforms and foundation systems.

Ward came to B&F Engineering after graduating with a master’s degree from the University of Arkansas and has never worked anywhere else except for a couple of summer internships with the Natural Resources Conservation Service. He credits his mentor, Tim Tieaskie, P.E., for helping him gain an understanding of the profession.

Don Beavers, P.E., the company’s founder, said Ward tries to solve problems on his own rather than relying on getting quick answers from more experienced engineers.

“He works, and he’s a bright kid. He likes to keep digging,” he said.

Ward has been spending much of his time as a subconsultant for Mid-South Engineering, which is designing a saw mill and planer mill for Weyerhaeuser at Dierks.

Ward’s father ran a custom lumber mill at Murfreesboro, which is where Ward first was exposed to mechanical and electrical systems. He researched the various types of engineering before choosing a discipline.

“I’ve always liked to solve problems, and I guess seeing structures, bridges and dams and those types of structures just kind of appealed to me,” he said.



**YOUNG ENGINEER.** Dustin, Ward, P.E., was exposed to engineering principles growing up in Murfreesboro, where his father managed a lumber mill.

At the University of Arkansas, he researched lightweight, self-consolidating concrete. He passed his 16-hour NCES structural engineers exam in 2015.

Ward lives in Benton with his wife, Mary, who recently graduated law school and finished first on the bar exam.

Ward has served as president and vice president of the ASPE’s Hot Springs chap-

ter and has been treasurer of the Structural Engineers Association of Arkansas. He also organized a trap shooting contest to benefit the Hot Springs area’s FIRST Robotics Competition.

Outside of engineering, he likes fishing and also has an interest in tractors, including bush-hogging and attending antique tractor shows.

# Crider honored for distinguished service

Former ASPE president says young engineers should make the Society their own

By Steve Brawner  
Editor

Lane Crider, P.E., had provided plenty of distinguished service during the 27 years since he started as an intern at McGoodwin, Williams & Yates. So it's only fitting that, at the ASPE Annual Conference, he received the Distinguished Service Award.

The award recognizes an ASPE member for exceptional contributions to ASPE, the engineering profession and the community. State winners become eligible for a national award.

A vice president and partner since 2004, Crider is responsible for project planning design and construction of transfer and treatment systems, storm drainage design, and sanitary construction.

Among his signature projects was the \$61 million construction of Fayetteville's West Side Wastewater Treatment Plant, which serves about two-thirds of the city's land area and was designed to treat 10 million gallons a day for about 40,000 customers. The project included the construction of the Woolsey Wet Prairie Sanctuary, a 46-acre compensatory mitigation site that was built to increase the number of plant species on what once as a vast prairie stretching into Oklahoma and Kansas.

A Fayetteville native, Crider has never worked for any other firm but his hometown one of McGoodwin, Williams and Yates. After graduating from high school, he enrolled in the University of Arkansas at Fayetteville to earn his civil engineering degree. In 1989, he began working an internship at the firm, which specializes in water and wastewater treatment facilities.

## Active engineer

Crider has been active in engineering associations. He served as the ASPE's president in 2013-14. Prior to that, he was president of the Northwest Arkansas chapter in 2007-08 and became a state officer in 2010, and he was ASPE's presi-



**ONE OF MANY HONORS.** Lane Crider displays the Distinguished Service Award he received at the ASPE Annual Conference April 8.

dent in 2013-14. In 2000, he was named the ASPE's Young Engineer of the Year. He was inducted into the Arkansas Academy of Civil Engineers in 2013.

In addition to ASPE, he has been active in ACEC/A, the American Waterworks Association, the Water and Envi-

*Continued on next page*

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ronmental Federation, and the Arkansas Waterworks and Water Environmental Association.

### Loved 'tinkering'

Crider as a young person had an interest in construction design, but he didn't always want to be an engineer. For a while, he wanted to be an architect, but that changed.

"I love tinkering with things," he said in an Arkansas Professional Engineer

cover story published in October 2013 when he was serving as ASPE president. "I love figuring out how to make things work. I love building things. So I think that comes naturally. I thought I wanted to go into architecture but soon realized I had no interest in spending a good part of four years in a design studio building little cardboard models. I didn't want to do that. I wanted to understand the basis behind how a building stood up or a road was designed or how water was treated."

At the ASPE Annual Conference, he offered a message to future industry leaders.

"I hope that you young engineers, you new P.E.s, would become involved, make this organization your own," Crider said while accepting his Distinguished Service Award. "Take it in a new direction so that it becomes vibrant and is worthwhile to you because you all are the future of this organization and of the engineering profession as a whole."

## Engineering Marketplace

### ICM's McFadden inducted into Hall of Fame

Bruce McFadden, president and CEO of ICM, was recently inducted into the Associated General Contractors of Arkansas' Construction Hall of Fame.

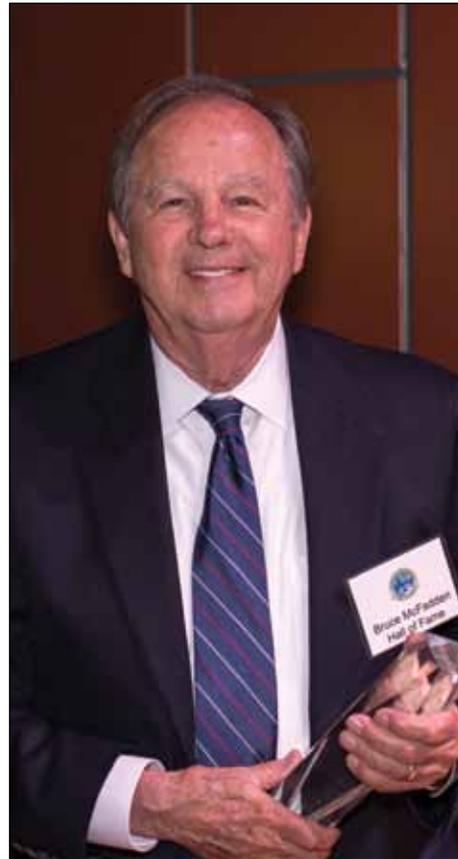
The Hall was established in 1999 to recognize those who have made outstanding contributions to the construction industry in Arkansas.

McFadden has been involved in construction since 1960, when he worked his first job with the U.S. Army Corps of Engineers after graduating with a civil engineering degree from the University of Arkansas. After deciding he wanted to work in the private sector, he graduated from Stanford University's construction management program and went to work for a highway contractor in Pine Bluff, Bituminous, Inc., and then decided he wanted to start his company, Improved Construction Methods, Inc., or ICM.

"I'd been fascinated with the way IBM did business as International Business Machines and had these young salespeople coming around that knew what they were doing, and so my dream was to have a bunch of salesmen in pickup trucks going around showing people what the latest and greatest was in the construction industry," he said in an Associated General Contractors of Arkansas video.

ICM's first product was manhole forms made of ABS plastic. Next came pipe lasers.

After 46 years in business, ICM has developed a regional business in Arkan-



**HALL OF FAMER.** Bruce McFadden, president and CEO of ICM, holds his Arkansas Construction Hall of Fame award.

sas and surrounding and nearby states. Later he discovered round storm sewer inlets that had been built using bricks that had been laid in a round shape, making it easier to keep clean. Eventually, he persuaded Little Rock to allow him to pour round inlets. Later the Arkansas Highway and Transportation Department included it in its specs.

Now, those round inlets are common in West Little Rock and at the Bill and Hillary Clinton National Airport in Little Rock.

"We've just built a pretty nice business calling on the contractors and municipalities," he said.

### Reynolds joins New Water Systems staff as sales rep

Calvin Reynolds has joined the staff of New Water Systems to manage outside sales and marketing in Arkansas.

Reynolds has worked the past six years for Worldwide Express in the transportation industry. Starting as an account executive, he finished his career there as a district sales manager, where he managed all sales and recruiting aspects of the Arkansas-Louisiana-Texas area. He is bringing his experience in business-to-business sales and the relationships he has built in Arkansas.

A native of Little Rock, he attended Ouachita Baptist University in Arkadelphia, where he played football and received a Bachelor's Degree in Business Administration majoring in marketing and management.



**Reynolds**

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*"The MSE program at the University of Arkansas far surpassed my expectations! All of the classes were delivered seamlessly through organized content and an easy to follow structure. The staff and professors were all supportive of my success while challenging me through real life scenarios and graduate level engineering theory. Perhaps the greatest value came from the flexibility of the program to be tailored to a student's specific need - I was able to design a program that fit my goals and touched topics I encounter daily."* - Dan B., MSE 2015

*"The online program at the University of Arkansas offered me the flexibility to pursue a well-respected graduate education while working full-time. The instructors provided a world class educational experience with individual attention. I would highly recommend this program to prospective students."* - Michael R., MSEE 2015

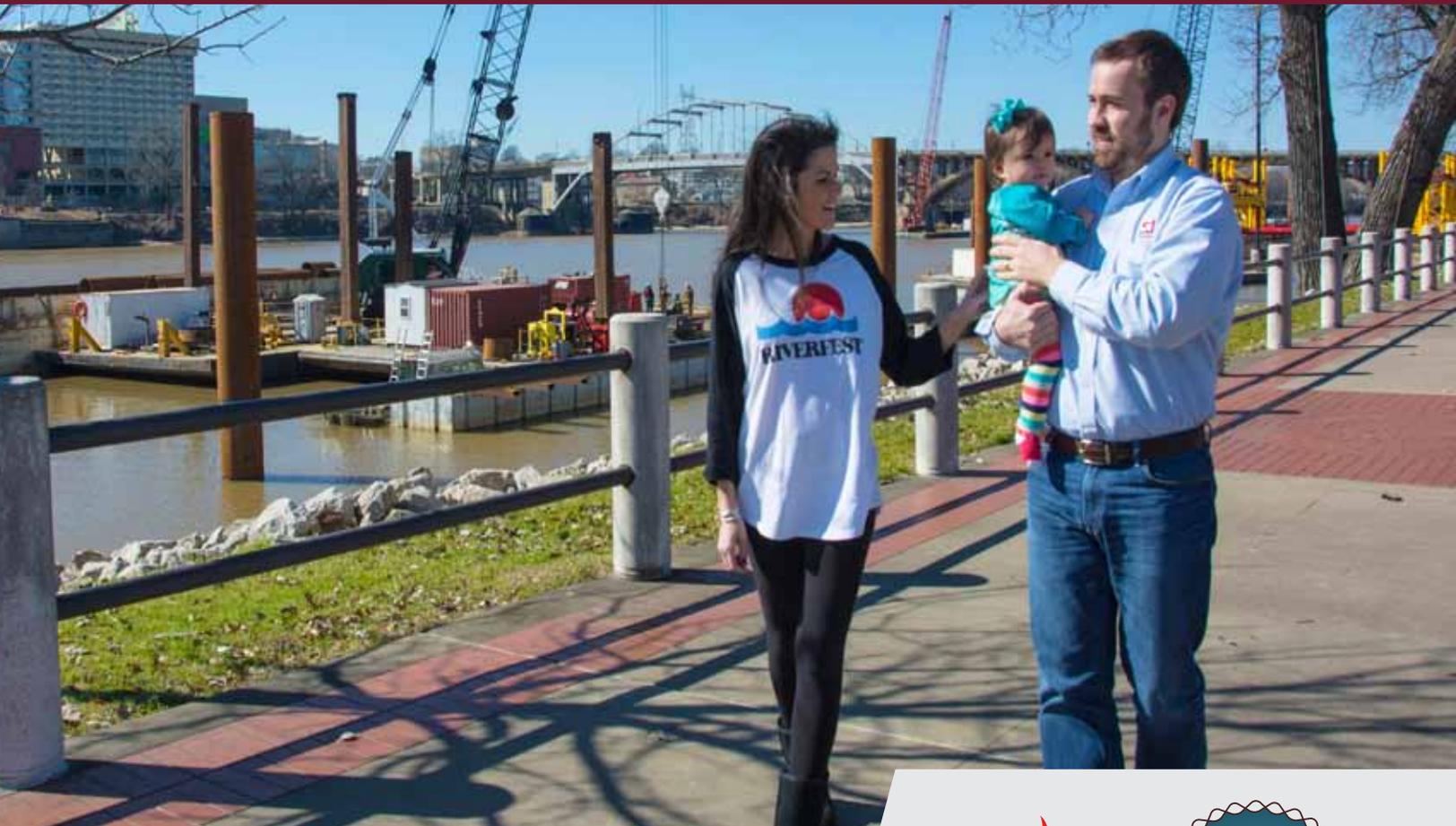
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