

WEST VIRGINIA

ISSUE 3 - 2013

EDGE

SPECIAL REPORT

BOY SCOUT BOOM:
SUMMIT BECHTEL RESERVE MEANS
MILLIONS FOR STATE ECONOMY



BUILDING

TOMORROW'S LEADERS TODAY

YOUTH LEARN SKILLS IN WEST VIRGINIA



“The **National Youth Science Foundation** camp staff fostered an environment of learning and sharing. That LESSON has stayed with me throughout my career, and remains one of the **KEY LEADERSHIP** values I use to this day.”

WES BUSH
CHAIRMAN, CHIEF EXECUTIVE OFFICER AND PRESIDENT
NORTHROP GRUMMAN CORP.

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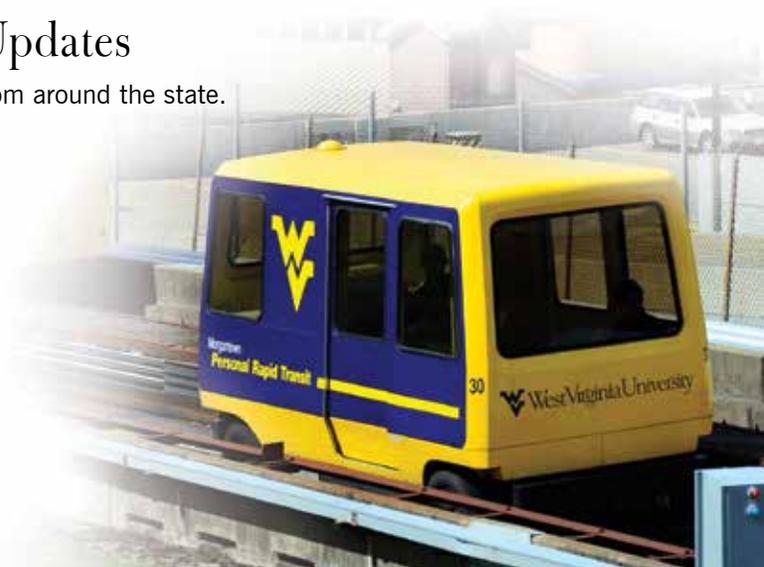
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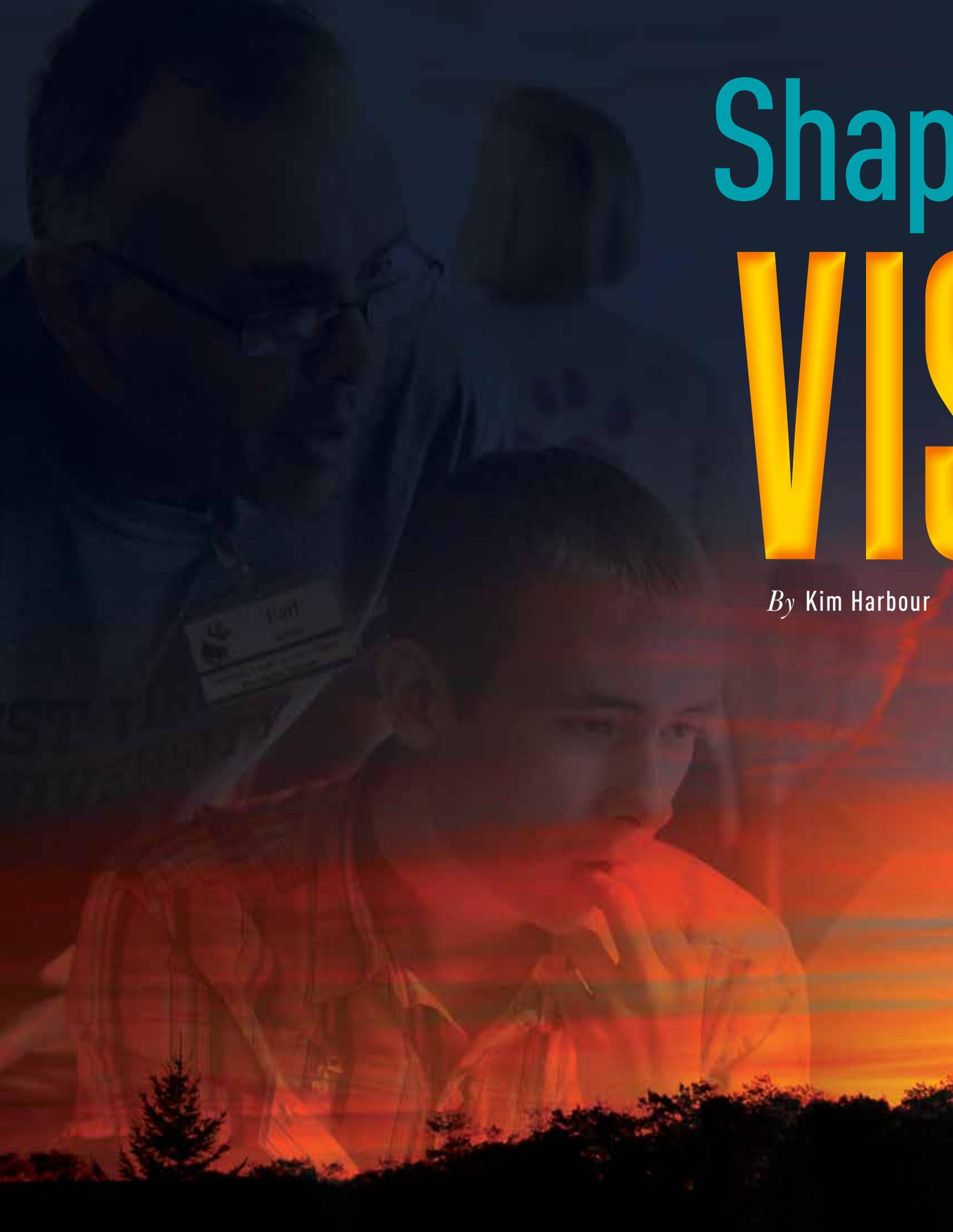
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Shape VISE

By Kim Harbour

Shaping Tomorrow's VISIONARIES

What does the CEO of Yahoo! have in common with the chemist who invented Hewlett Packard's thermal ink jet printer and with the chairman of Northrop Grumman?

Each of these innovators spent a month in West Virginia during their youth. And each said the experience shaped who she or he is today.



A rendering of the master plan for creating a National Center for Youth Science Education, which will allow NYSF to serve more students year-round with a new facility.

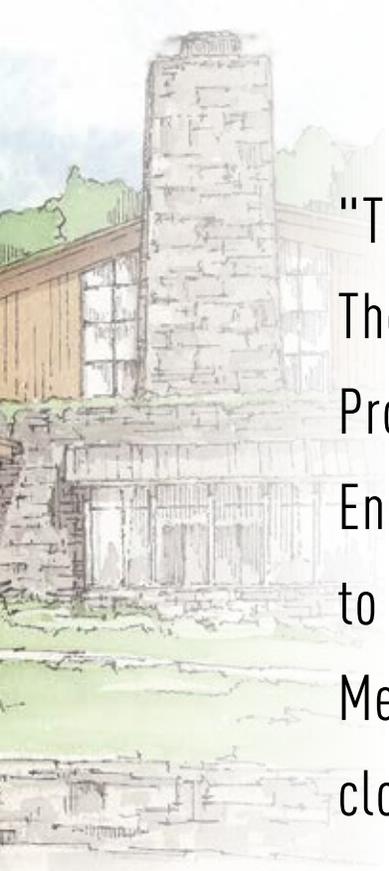
In 1993, Marissa Mayer was one of two delegates from Wisconsin to attend the National Youth Science Foundation (NYSF) camp in Bartow, W.Va. She credits meeting scientist Zoon Nguyen for showing her a new way of thinking that greatly influenced her groundbreaking user interface design for Google's Web search and image search. Now, Mayer is the new CEO and President of Yahoo!

Dr. David Hackleman was a NYSF delegate from Oregon in 1969. His career led him to be the chief technologist of Hewlett-Packard's Technology Development Operation. Hackleman still teaches at Oregon State University's College of Engineering and he returns to the camp as a frequent lecturer because he finds inspiration in West Virginia's natural setting. "We look

for human sourced and various naturally occurring organic compounds, tracers of the flowers from the temporary visit by a brief flash of a hummingbird. Nature is our world. We can learn best by listening to what it tells us," he said.

1979 delegate Wes Bush (now Northrop Grumman Corp.'s chairman, CEO and president) grew up in Morgantown, W.Va., and he said the camp experience gave him a greater appreciation for the power of innovative ideas. "The other campers had wide-ranging interests and were eager to talk about their ideas and perspectives," Bush recalled. "The camp staff fostered an





"Thirty degrees in the morning...
 The hoot of a great horned owl at night...
 Programming in a green painted cabin in the woods...
 Enough light from the Milky Way to see at night due
 to the complete absence of artificial light...
 Meeting people that to this day are some of my
 closest friends."

Dr. David Hackleman, inventor



Dr. David Hackleman and students extract the essential oil from a bee balm plant, related to the mint family. It attracts bees and hummingbirds.

environment of learning and sharing. That lesson has stayed with me throughout my career, and remains one of the key leadership values I use to this day."

SCIENCE AL FRESCO

Celebrating 50 years of hands-on science, the NYSF camp started as part of West Virginia's centennial statehood celebration in 1963. Each year since then, the monthlong camp sponsors two students from each U.S. state with an all-expense-paid trip (including transportation) to rural Pocahontas County, W.Va., just a few miles up the road from the National Radio Astronomy Observatory.

Each year, the camp invites approximately 30 lecturers from a variety of fields: everything from geology to astronomy, engineering, health and mathematics. Dr. Andrew N. Blackwood,

NYSF executive director, said that the camp's isolated, rugged setting gives the students, staff and guest presenters the chance to build a community of their own over the course of a month. "The original planners felt a distraction-free experience in a camp setting would nurture an atmosphere where the character of these three groups could flourish," he said.

At mealtime the scientists sit among the students and the food is served family style. "It's those types of casual interactions that can help the students build valuable networks for their futures," Blackwood said.



"If you ask the students, they will say it's a science education program. But it really is an economic development program. These top students will be tomorrow's leaders in science, technology, engineering and math – and they're learning cutting-edge material from our nation's top researchers, while enjoying outdoor adventure activities amid West Virginia's beautiful setting. What we offer is quite unique."

Because the students are in-between high school and college, lecturers give presentations at



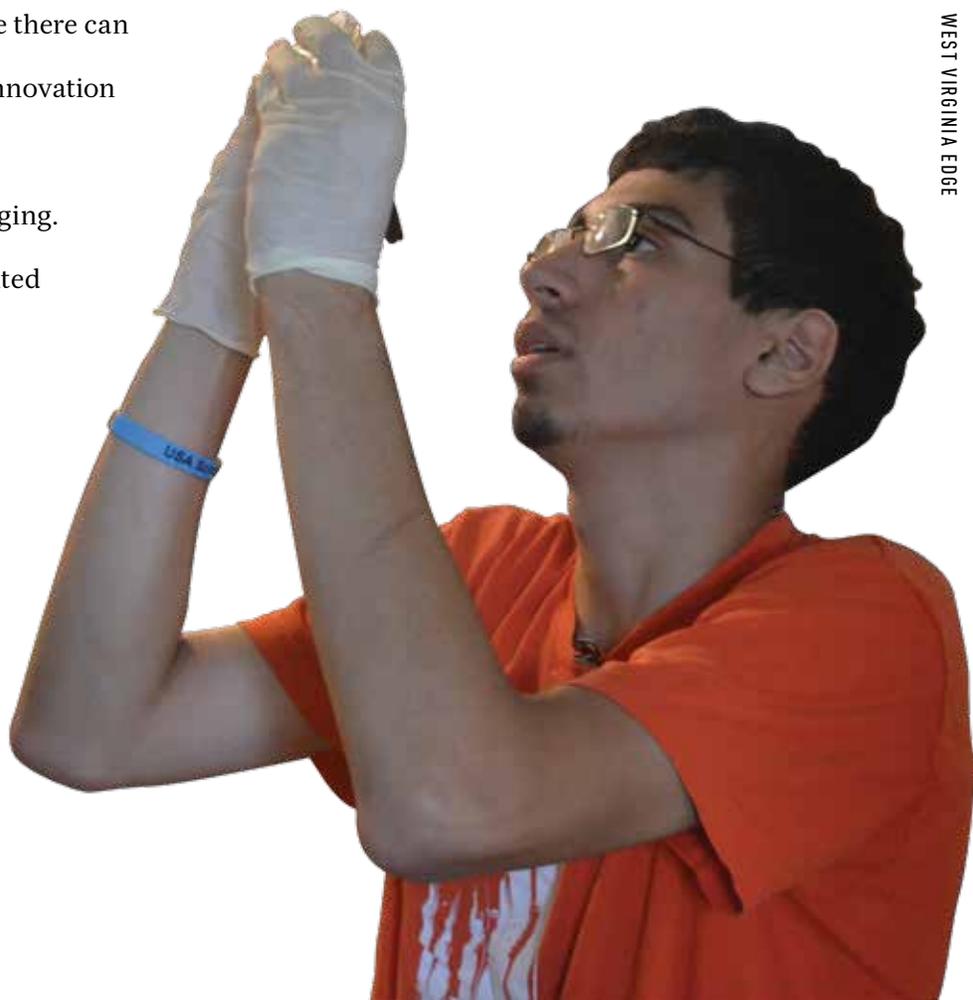
a graduate level and introduce the students to what's happening in science right now. These are things beyond the usual high school curriculum. Additionally, the camp offers a series of directed studies in which small groups of students work directly with a guest scientist. They receive hands-on experience in everything from polymer chemistry to making biodiesel or performing modern surgical procedures.

“Many of the kids are Type A personalities and they have their careers already mapped out. So, we try to encourage them to take classes in other fields of study where there can be cross-pollination. That's where innovation can happen,” Blackwood said.

The camp experience is life-changing. A few years ago, a student who wanted to be a mechanical engineer did a directed study about the anatomy of the human arm. He fell in love with the subject. Now, he is a biomedical engineer specialized in designing scaffolds for growing human tissues.

Bush agreed, saying the program had a lasting impact on him.

“The combination of being exposed to world-class scientists, along with developing life-time friendships with others who had similar interests, helped to reinforce my strong interest in science and engineering,” he said. “The experience gave me greater confidence at that stage in my life of the path I wanted to pursue. As I entered college at the end of the summer, I was focused and eager to take on the challenging curriculum that this path required.”



“West Virginia is home to outstanding youth programs—including the National Youth Science Foundation (NYSF) camp and those at the Summit Bechtel Reserve. These programs are geared to move our youth’s knowledge beyond the traditional classroom lesson—encouraging learning and providing opportunity to develop leadership skills.”

Earl Ray Tomblin, W.Va. Governor

Gov. Earl Ray Tomblin and BSA volunteer Steve McGowan survey the Summit Bechtel Reserve.

A GAME WITH PURPOSE

“Every road we drive, every path we walk has a first step and a last step. There are a lot of steps in between,” said Charleston attorney Steve McGowan of the brand new Boy Scouts of America (BSA) camp that opens in July 2013 in the southern part of the state, near the New River Gorge. More than 40,000 Boy Scouts and leaders will inaugurate the Summit Bechtel Reserve with the BSA’s quadrennial National Jamboree.

McGowan has worked in Scouting all of his life, most recently volunteering at the national level. A few years ago McGowan was at a national BSA meeting and he learned the organization was looking for a permanent

home for its Jamboree. He asked what he needed to do to make sure that West Virginia could be considered for the opportunity.

Upon returning home, McGowan began working with the West Virginia Development Office to put together an eight-page flier titled “West Virginia Is Calling” to introduce BSA to what the Mountain State had to offer. As co-chair of the task force to land the project for the state, McGowan put his Wood Badge (BSA advanced training for adult leaders) skills into play.

“The path to making the Summit Bechtel Reserve a reality leaves outsiders to West Virginia in awe at the level of support and





collaboration from state officials that made this project happen,” he said.

“Over the past five years, I’ve toured with Scout leaders and prospective donors to the camp. I see the look in their eyes. They say, ‘This is not at all what I expected of West Virginia’ as they discover the beauty, the people and the accessibility. They see the Summit as a one-of-a-kind facility. There is no other place like it in the world that has this variety of adventure activity in one place. These people leave West Virginia with a sense of the state’s character and eagerness to develop youth. The Summit is a game changer.

It is transformative.”

McGowan said the goal of the Summit is to be relevant to today’s youth. He believes that Scouting is as relevant today as it was when it began more than 100 years ago. “But we want to continue to adapt our message and our methodologies to the next generation. We want to meet today’s Scouts where they are and have a level of diversity of programs and a variety of things that you can do in one place. We want to give these kids so many opportunities that it makes them want to come back.”

For instance, he said the Jamboree may use

the zip line to teach physics, asking Scouts to calculate how long it will take to ride the zip line compared with the kids next to them.

“This becomes a game with a purpose. What does that parent think of West Virginia when they see these adventure sports paired with STEM, or Science, Technology, Engineering, and Mathematics activities? They will walk away impressed!”

“With the games that we teach, there is a lesson that is internalized by the Scout. We try to prepare them to be ethical leaders who will make good decisions. We want to put them in situations in youth so they will learn from their mistakes and take these lessons into adulthood,” he said.

BSA leadership training starts in the Cub

Scouts, as young boys learn to work together as a pack. Then, as a boy moves into Boy Scouts he becomes part of a patrol. The patrol is part of a troop and it is a working group that is responsible for a greater level of self-sufficient duties. As a Scout moves up in rank, he always must accept new levels of responsibility – and these are valuable life lessons for youth development. (McGowan notes that the BSA Venturing program includes girls, too.)

“We give Scouts the space to try and to fail and to learn from failure. We want them to become better leaders. Community service is one of the hallmarks of Scouting. We emphasize the concept of being service leaders and giving back and being of service.” McGowan said.



In 2012, the Order of the Arrow, the national honor society of service within BSA, brought 1,500 Scouts to build 18 miles of mountain bike trails for the national park adjoining the Summit, saving the park millions of dollars. At the 2013 Jamboree, BSA will have a Messengers of Peace Day of Service during which Scouts will spend a day giving back to West Virginia in a nine-county area that includes many small communities. The communities must take ownership to identify projects and raise funds. The Scouts provide the labor to do the work on projects like landscaping, cleanup, trail building and painting, as well as special projects, like building a living classroom to teach science in the outdoors.

Eventually, BSA plans to build a leadership center of excellence at the Summit, perhaps using the Boeing Leadership Center model as a place for corporations to

send their teams. McGowan said this will bring world leaders to West Virginia for training.

“Scouts make good employees. If you look at the lists of Eagle Scouts who go on to be successful leaders, there is a statistically significant difference in how young people who come out of Scouting programs are able to achieve more in life.

“Now, imagine the chance we have to get in front of these leaders of tomorrow with such an impressive facility. West Virginia has a golden opportunity to show all we have to offer.” ■



Anticipating the Future

By Andrea B. Bond

Photography
Courtesy of the
Boy Scouts of America



g ure



In July 2013, The Summit Bechtel National Family Scout Reserve will welcome more than 40,000 Boy Scouts and their leaders

from all across the country to their 10-day-long National Jamboree. It's a momentous occasion for the grand opening of the 10,600-acre Scout camp in Fayette County, and one that's the talk of West Virginia.

The camp's construction has produced an economic impact of \$50 million in wages and materials alone, West Virginia Gov. Earl Ray Tomblin said. After the camp opens, area hotels, restaurants, state parks and recreational facilities are expected to experience a surge in visitors from the Scouts and their families, both in the area and en route.

"Millions of dollars associated with materials, labor and tourism have boosted the local economy, with millions more to come when the Summit opens in 2013," Tomblin said at the 2012 Sustainability Summit at the Greenbrier Resort. "Together, we are building a sustainable future for the region, our beautiful state, and the tens of thousands of Scouts from

Top right: The Summit Bechtel National Scout Reserve occupies 10,600 acres in the scenic New River Gorge.

Left: The Boy Scouts of America selected the Summit as the site for the 2013 National Scout Jamboree, an event that is expected to draw thousands of visitors.

West Virginia and across the globe who will enjoy the reserve for years to come.”

In 2007, the Boy Scouts of America (BSA) decided to move the National Jamboree from its former location on a Virginia military base to a permanent facility that the organization would own. West Virginia competed in a nationwide search to become the new host to the Scout camp. Proposals were submitted for 82 sites in 28 states.

Candidate sites were required to be at least 5,000 acres, within 25 miles of interstate highways, near adequate medical facilities, and lastly, have spectacular scenery as a backdrop for recreational activities. In West Virginia, then-Gov. Joe Manchin assembled a team of state Development Office professionals, government officials and private volunteers to identify the best site and market it to the BSA.

Called the West Virginia Project Arrow Task Force, the group was headed by Dan Massey, West Virginia Development Office liaison (now retired) to the BSA, and Charleston attorney Steven McGowan, an Eagle Scout and volunteer.

“The Summit will offer an unprecedented opportunity for the nation and the world to see and experience the entire state and its hospitality,” McGowan concluded in his economic impact statement in the W.Va. Project Arrow application.

In 2009 the BSA selected a 10,600-acre site in the New River Gorge near the towns of





Mount Hope and Glen Jean. The site lies adjacent to more than 70,000 acres of the New River Gorge National River area, providing the Scouts easy access to activities such as whitewater rafting, hiking, bicycling and rock climbing.

Gary Hartley, spokesman for the BSA, said that two deciding factors in the Scouts choosing the Fayette County location were its access to outdoor recreation and its location to population centers on the East Coast.

“We used to hold the Jamboree on the coast of Virginia. We drew a circle representing where the Scout leaders could drive in a day – a 500-mile radius – and half of that circle was in the ocean. Now, in West Virginia, we’re still close to the East Coast but we’ve picked up cities in the Midwest.”

Once the site was selected, a donation of \$50 million from the S.D. Bechtel Jr. Foundation and the Stephen Bechtel Fund – the largest gift in the history of the BSA – provided the financial seed to initiate the project.

Additional major donors include:

- **The Suzanne and Walter Scott Foundation**
\$25 million (Scott Scouting Valley)
- **Mike and Gillian Goodrich**
undisclosed amount (Goodrich Lake)
- **CONSOL Energy**
\$15 million (CONSOL Energy Wing Tip Bridge)
- **Jim Justice**
\$25 million (James C. Justice National Scout Camp)
- **The Ruby Foundation**
\$10 million (J.W. & Hazel Ruby West Virginia Welcome Center)
- **Ed and Jeanne Arnold**
\$10 million (Ed & Jeanne Arnold Transportation and Logistics Center)
- **Terrence and Peggy Dunn**
undisclosed amount (Dunn Family Adult Leadership Camping Community)
- **J. Brett Harvey**
undisclosed amount (Harvey Mountain Bike Shop and the Jared Harvey Bike Trails system)

Above: The Summit's site was chosen for its access to outdoor recreation and its proximity to major population centers on the East Coast.

Left: Buildings and other structures on the site were made possible by donors, many of whom were Boy Scouts themselves.



The Consol Energy Bridge, more than 700 feet long and rising 100 feet above a giant ravine, will connect the main activity area to the eastern half of the property.

Many of the donors are Boy Scout alumni who credit the BSA with providing them with the learning tools and strength of character needed to succeed in life. Others are community members who see the combined value of providing for Scouts' education while boosting local tourism and economy.

The CONSOL Energy Bridge is a unique feature of the Summit, Hartley said.

The pedestrian bridge, more than 700 feet long and rising 200 feet above a ravine, will connect the main activity area to the eastern half of the property. It was designed to resemble an eagle's wing, with three separate walkways, two of which bend above and below

the main span. The splayed wooden piers that support the main cables are reminiscent of feathers at an eagle's wing tip.

CONSOL's commitment to the Boy Scouts dates back over a decade, said Laural Ziemba, director of community relations at CONSOL. Company chairman Brett Harvey was a Scout himself and he has two Eagle Scout sons.

"CONSOL is a strong supporter of the Boy Scouts of America," Ziemba said. "The values they instill in our nation's youth are qualities we seek in employees."

Gary Hartley said he was appreciative of all the assistance the BSA has received from corporations and private entities, as well as

Climbing walls are one of many high-adventure features at the Summit Bechtel Family National Scout Reserve.



from the State of West Virginia.

“The people – city, county, state and the feds, too – have all been really cooperative.”

In preparation for the camp’s opening, the BSA is working with numerous state agencies and privately owned businesses.

The West Virginia Division of Natural Resources’ Law Enforcement, Wildlife Resources and Parks and Recreation sections are set to provide technical support to the Summit.

“Some state parks in the BSA-targeted nine-county area may be sites for service projects during the Summit,” said Ken Caplinger, DNR

Chief of Parks and Recreation Section. “Parks with overnight accommodations in the area will recognize an increase in reservation interest at what is an already busy time of the year.”

During the Jamboree, DNR will have an exhibit in the Conservation Trail area which is located in Walter Scott, Jr. Conservation Valley. The Conservation Trail is an area established by the Summit that will feature interactive displays from natural resource-based state and federal agencies. In addition, the Law Enforcement’s Laser Shot trailer, which was very popular at the last National Scout Jamboree, will be an integral part of the 2013 event.

Upon learning that the BSA will equip each Scout with a smartphone, DNR decided to reinforce the smartphone technology by

The West Virginia Division of Natural Resources will use QR codes at their displays to direct smartphone-wielding Scouts to its online reference material.

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The New River Gorge is one of the most popular locations in the eastern U.S. for rappelling, rock climbing and whitewater rafting.

featuring QR codes and Web addresses at their display, according to Curtis Taylor, Chief of the DNR Wildlife Resources Section.

“Familiarizing the Scouts with our websites and QR codes will instill an appreciation for West Virginia’s natural resources, including fishing and hunting opportunities and our wonderful state park system, plus will allow the sharing of our Web-based information with family members and friends,” Taylor said.

He added that, on a short-term basis, the DNR hopes to educate the Scouts about fishing, hunting and other outdoor recreational opportunities, including state

parks, forests and wildlife management areas.

“On a long-term basis we hope that the Scouts will be ambassadors for these activities – encouraging others to visit West Virginia, buy fishing licenses and perhaps hunting licenses, as well as stay at our wonderful state parks and forests – thus improving the state’s positive image.”

The West Virginia Development Office has stayed in touch with Summit officials to provide assistance when needed, said Moses Zegeer, trade show manager for Business and Industrial Development and current Boy Scout liaison. When then-Gov. Manchin first met

“Familiarizing the Scouts with our websites and QR codes will instill an appreciation for West Virginia’s natural resources, including fishing and hunting opportunities and our wonderful state park system, plus will allow the sharing of our Web-based information with family members and friends.”

Curtis Taylor, Chief Wildlife Resources Section
WEST VIRGINIA DIVISION OF NATURAL RESOURCES



with the Scouts, he committed \$10 million to assist with road improvements, and the city of Mount Hope was provided with \$3 million for improvements for the water system to serve the Summit.

“The team members who brought the Summit Bechtel Scout camp to West Virginia are ecstatic with the development of this facility,” Zegeer said. “It will be a facility of extreme utilization and be able to serve more people and Scouts than any other facility in the Scouting world.”

The Summit will be incorporated and based

on successful modern business models to be self-sustaining, he said. Preliminary plans call for the Jamboree, a summer camp, a high-adventure center, a leadership center and perhaps a Scouting museum.

The eventual investment total to construct the Summit is projected to be \$450 million. Reports indicate that \$250 million of that goal had been reached as of October 2012.

On-site contractors have employed nearly 1,000 people, 80 percent of whom are West Virginians. In addition, \$16 million in materials have been purchased in West Virginia, more

Right: Specialized sporting venues at the Summit will include mountain bike trails, archery ranges, a BMX/skate park and zip lines, shown here.

than \$9 million of which were bought from vendors in Fayette, Raleigh or Nicholas counties.

In preparation for the Summit's opening, recreational and sport activities experts have been on site, planning and directing construction of specialized venues such as zip lines, mountain bike trails, archery ranges and a BMX/skate park.

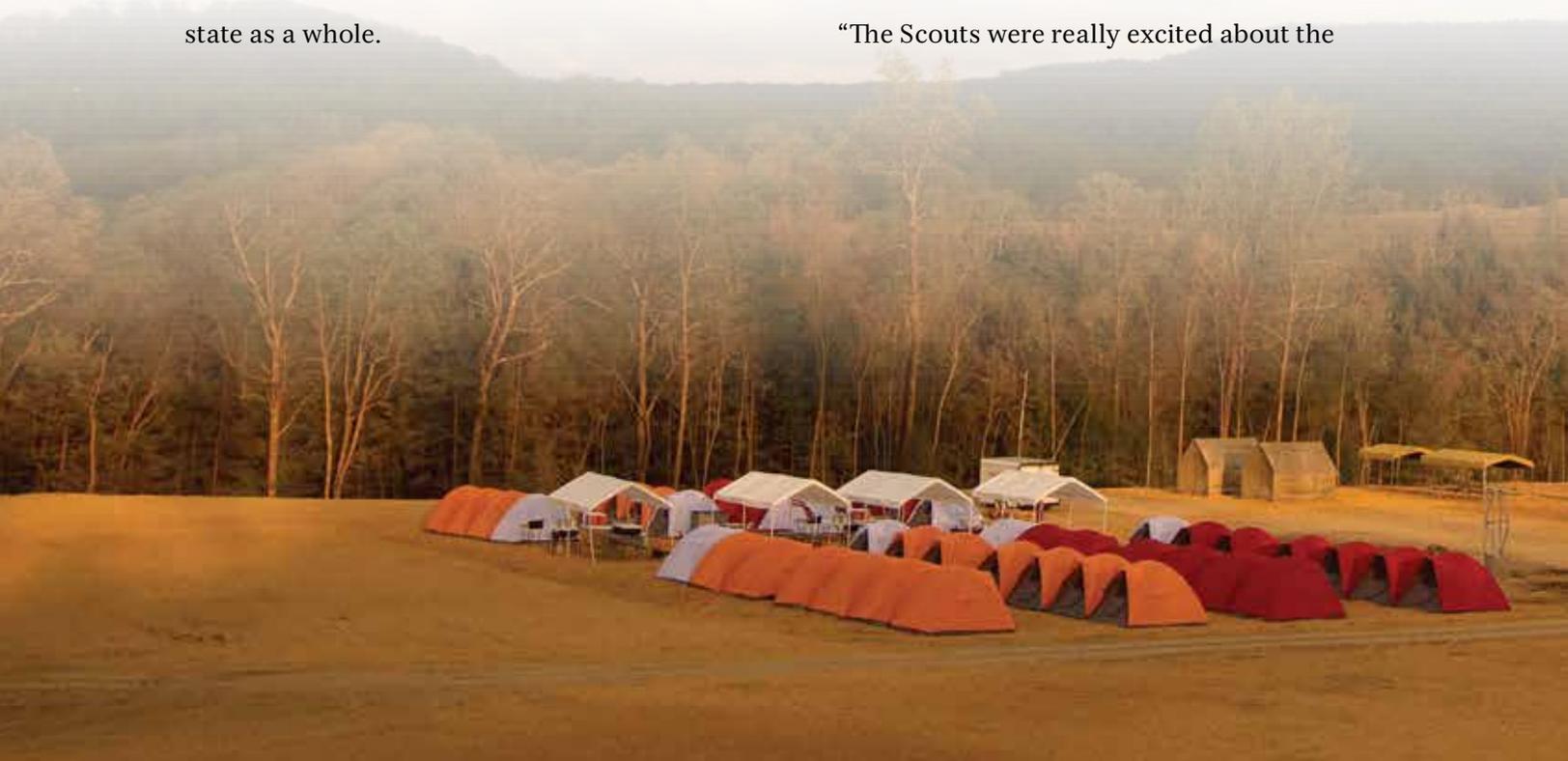
Numerous projects have been completed by experienced Scouts as they provide labor to clear streams and build and restore paths through the New River Gorge National Park. These programs, activities and approaches to outdoor recreation and environmental stewardship are expected to foster influxes of great numbers of people to the area and the state as a whole.

The Jamboree is scheduled for July 15-24, 2013. The public will be invited to some events, including live music and fireworks for the Summit's grand opening.

As if the 2013 Jamboree weren't exciting enough, in 2019 the new National Center for Scouting Excellence in Fayette County will host nearly 100,000 Scouts from more than 160 countries for the 24th World Scout Jamboree.

Construction crews and planners are working seven days a week to ensure that the Summit will be completed in time for its opening date. A test run of the camp last summer produced promising results.

"The Scouts were really excited about the



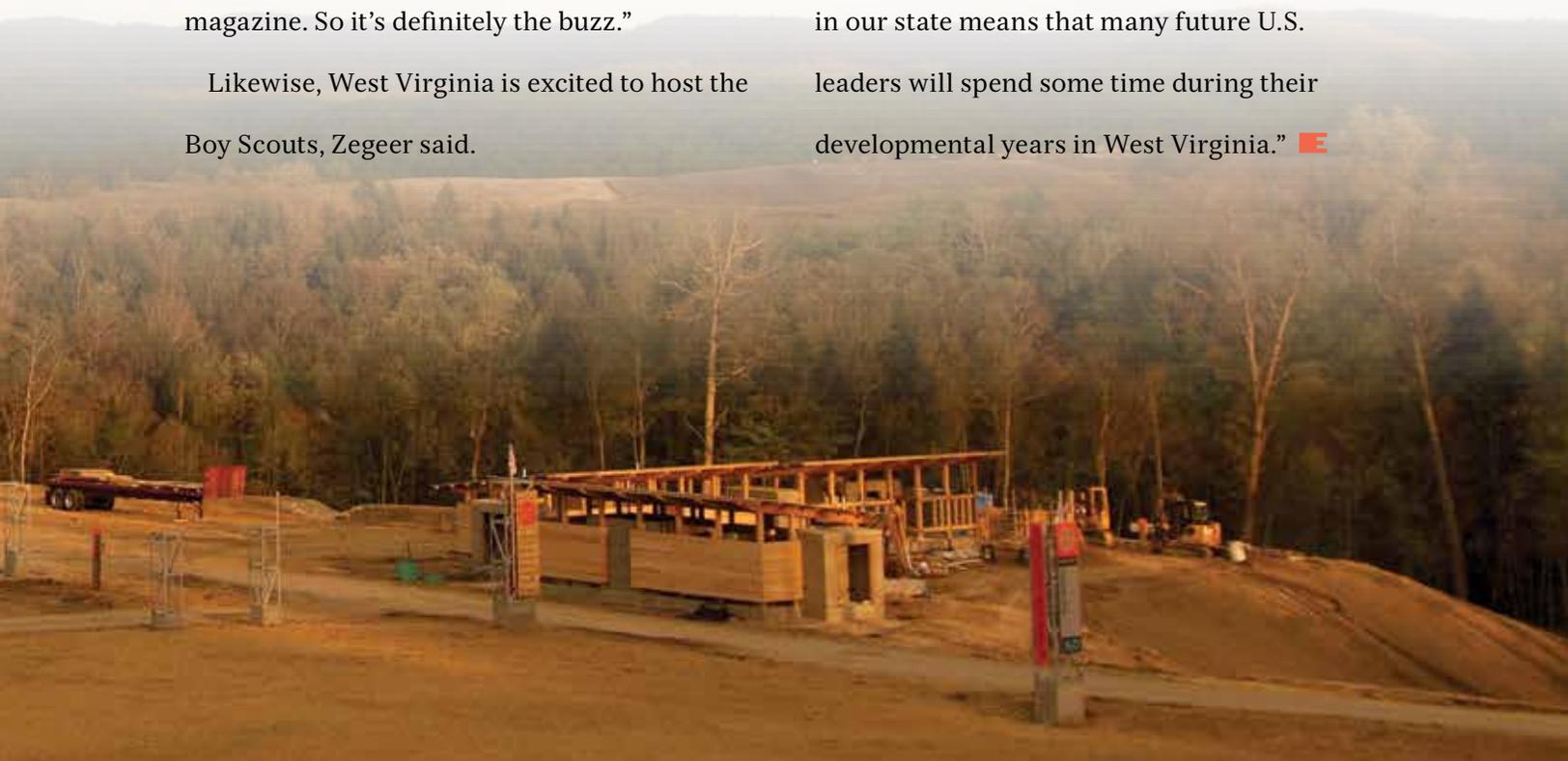


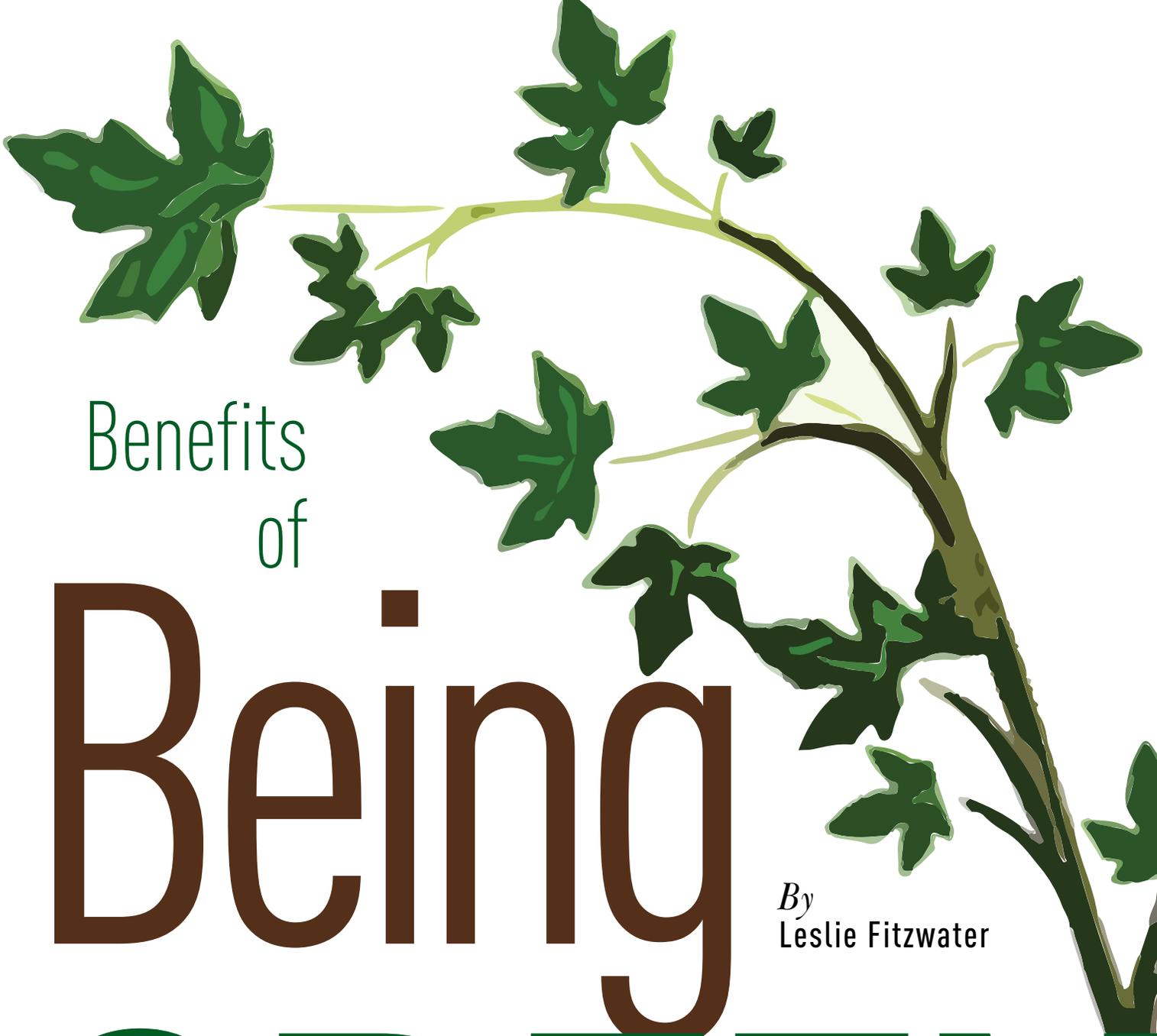
Summit,” Hartley said. “They loved West Virginia – the mountains, the terrain – and also the types of programs that are being offered. We even made the cover of Scouting magazine. So it’s definitely the buzz.”

Likewise, West Virginia is excited to host the Boy Scouts, Zegeer said.

He pointed out that many of America’s greatest political and military leaders became Eagle Scouts during their youth.

“The Boy Scouts of America’s newest venture in our state means that many future U.S. leaders will spend some time during their developmental years in West Virginia.” **E**





Benefits
of

Being

By
Leslie Fitzwater

GREEN



West Virginia is the third most forested state in the nation.

West Virginia is rich in coal, natural gas and timber.

Of those three natural resources, only timber is renewable. Areas of West Virginia that were extensively logged a century ago are now reforested. According to a Forest Inventory Analysis conducted in 2010 by the USDA Forest Service, tree growth in West Virginia outpaces mortality and removals 2.5:1. West Virginia's hardwood forests naturally regenerate, but the state's forest products industry also does its part to continue this trend. Utilizing as much

of the tree as possible reduces the number of trees harvested and keeps wood waste out of landfills. Items that were once considered waste products, like sawdust and bark, are now used to produce heating pellets, charcoal, boiler fuel and fine papers. Companies also are earning certification that proves they are responsibly managing their forestlands and utilizing best management practices to conserve the state's forest resource.



Tree growth in the state outpaces mortality and removals 2.5:1.

Deputy State Forester Greg Cook, who co-authored a report on an assessment of timber product output and use in 2007, said that the state's sawmills are continually seeking ways to reduce waste during the sawing process. "The less waste you produce the more lumber you get," Cook said. He added that the use of computers and other technology increases the amount of lumber produced, but finding purposes for other waste wood is often not high tech. Byproducts of the sawing process include mulch for landscaping, sawdust for animal bedding and firewood. Additional waste wood is often used to stoke sawmill boilers.

Byproducts of the sawing process are used for mulch, animal bedding and boiler fuel.

Forest products businesses also are embracing certification programs developed to ensure wood and wood products come from responsibly managed forests where practices to protect biodiversity, at-risk species and water quality are as important as timber harvesting. According to the West Virginia Division of



Certification programs ensure wood comes from responsibly managed forests.



Forestry, approximately 3 million acres of West Virginia forestland currently are certified through programs like the American Tree Farm System, the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative. Renick Millworks and Collins Hardwood are two of the companies certified by the FSC.

The Collins Hardwood mill in Richwood earned FSC Chain-of-Custody (CoC) certification in 2011. CoC certified products grow in properly managed forests, and are harvested, processed, manufactured and distributed by FSC-certified entities. Simply put, anyone who takes ownership of the forest

product in any form before it is sold to the consumer must be FSC certified. Now-retired Collins plant manager Ernest Lake summed up CoC certification this way in an interview in 2012, “Our customers can have faith that our lands and our products are manufactured to one of the most meaningful and robust environmental and social standards for wood products. It means there will be forest products for the future. It means local lands will continue to grow this sustainable resource to supply our country and our world.”

Matt Borror, a former industrial forester and now manager of national accounts for Building & Industrial Development with the West Virginia Development Office, said, “Participation in certification programs doesn’t mean that timber is not harvested. On the contrary, these lands are maintained as

working forests. They provide environmental benefits like wildlife habitat and contribute to air and water quality all while providing timber and other forest products.”

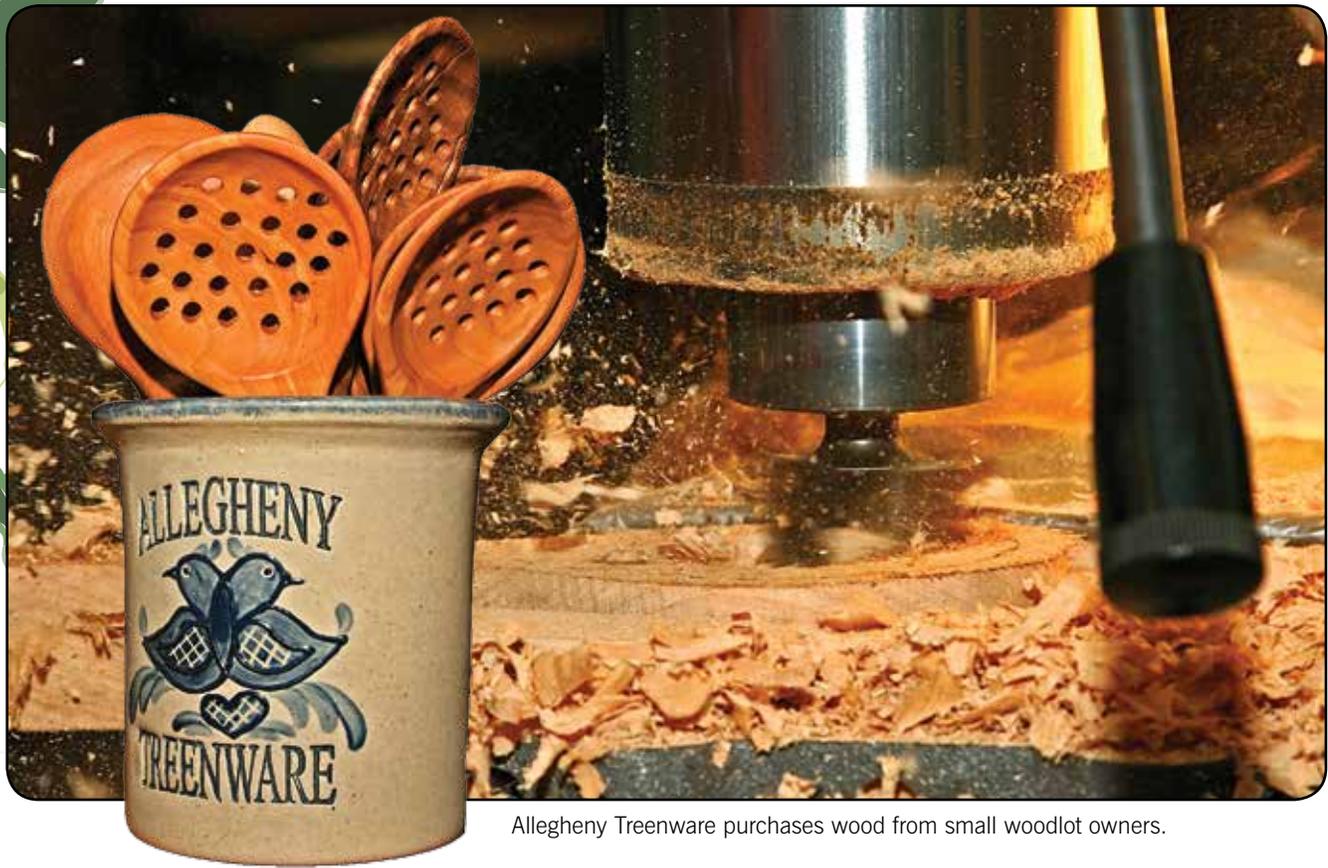
Renick Millworks in Renick, W.Va., is FSC certified and also a member of the U.S. Green Building Council. Renick uses recycled and reclaimed wood to produce a variety of wood flooring as well as millwork, beams and timbers. “We’re all about reclaimed wood. It’s good for the environment and it looks good,” said Jay Petre, president of Renick Millworks. FSC certification allows the company to sell to green/LEED building markets and environmentally conscious consumers

throughout the country. “Overall, the public is becoming more aware about green options.”

Forest stewardship is not just limited to large forest products companies or commercial



The state's wood products industry employs more than 22,000 West Virginians.



Allegheny Treenware purchases wood from small woodlot owners.

landowners. Allegheny Treenware is a small business in Thornton, W.Va. that gets most of its wood from small woodlot owners who selectively cut trees to subsidize their incomes. The company, which specializes in wood kitchen products like bowls, cutting boards and serving utensils, also purchases wood from local log yards and from tree trimming services. “Once in a while, employees from a tree trimming service will call asking if we will buy certain logs they are taking down,” said Allegheny Treenware Owner Sue Jennings. “The state’s abundant natural resources make West Virginia the ideal location for setting up a wood products business.”

BEING GREEN AT THE BSA’S SUMMIT BECHTEL RESERVE

West Virginia is also the ideal location for a group that takes stewardship very seriously. The Boy Scouts of America’s (BSA) Leave No Trace principles, which include the goal of leaving natural settings either the same or better than found, are used at every level of the organization. This respect toward the environment guided the construction of The Summit Bechtel Reserve. The 10,600 acre site in Fayette County previously was home to surface mining operations that were abandoned, along with several mine facilities, after its coal reserves were depleted. The Summit’s



Bathhouses constructed of hemlock harvested on site.

construction optimized flat surfaces left behind after the mining process, keeping extensive earth-moving operations to a minimum. The BSA harvested Eastern hemlock trees on site, processed them through a local sawmill and transported the timber to Appalachian Log Structures' (ALS) manufacturing facility in Princeton, W.Va. ALS, a W.Va. company with 35 years experience in manufacturing milled log homes and other wood products, contracted with Fredeking/Stafford Construction Company to provide fabrication of roof and privacy panels for the shower houses. These permanent shower houses will serve visitors for generations. Extensive tree-planting

efforts, stream clearing, water recycling and water conservation efforts are just a few of the stewardship projects the Scouts are implementing on the site. The Summit Bechtel Reserve is a long-term investment: It is one of only four high-adventure Scout bases and is the permanent home of the National Scout Jamboree. The BSA plans to use The Summit for the next 100 years, if not longer.

West Virginia's forest resource is healthy, thriving and supporting a robust wood products industry. That industry, in turn, is supporting the resource with responsible management practices. It's a match made in Almost Heaven. **E**



MarkWest Energy Partners Expands Natural Gas Production in West Virginia

By the end of 2014, MarkWest Energy Partners, L.P. plans to have an extraordinary 2.3 billion cubic feet per day of natural gas processing capacity in West Virginia.

“MarkWest’s leading presence is in the unconventional resource plays, including Marcellus, Utica and Huron Shale formations,” said Frank M. Semple, MarkWest’s chairman, president and chief executive officer. “Our business is focused on supporting our producer customers who are developing these large natural gas resource plays.”

As a midstream operation, MarkWest serves customers in the exploration and production field, like Antero Resources or Chesapeake Energy, that drill the wells and own the resources. With operations in eight states in addition to West Virginia, MarkWest transports, processes and adds value to the raw natural gas product and liquids in the energy delivery chain between the well and the customer.

“Our company has a rich history and deep roots in the Appalachian region, operating in West Virginia for about 25 years. In fact, we have been the largest processor of natural gas in the Appalachian Basin throughout that 25-year period.

“Looking at the capacity that we’ve built, our growth has been phenomenal,” Semple said. “MarkWest already has 10 large processing plants in western Pennsylvania and northern West Virginia, five in each state. But, we also have nine new plants under construction – including seven more in West Virginia.

“We have a good working relationship with both the state and the local governments. We find that West Virginia’s regulatory environment encourages growth and the state is proactive, open and supportive in how resources are developed. West Virginia gets it. It’s a balancing act, but the state understands the investment and the opportunity that exists for jobs.”

Semple credits Gov. Earl Ray Tomblin for providing exceptional leadership during this period of significant expansion and development of these natural resources. He also praises the state’s rich history in the energy industry for development of an excellent workforce with skilled employees who are eager for new opportunities and training.

“We’ve grown quickly in West Virginia. We have nearly 100 employees. A third of the company’s employees work in West Virginia and the majority of the new jobs will be in West Virginia.

“I couldn’t be more pleased with the caliber of the people that we’ve hired. In a short time, we went from a standing start to fully staffing these large and complex facilities in West Virginia. They are highly qualified, skilled and maintain a great work ethic. I’m very proud of our team in West Virginia and employees that we’ve hired.”

COOL or HOT, the BUSINESS CLIMATE is GREAT in West Virginia's Cities

By Hoy Murphy

Towns and cities develop their own personalities over time. In West Virginia, you can find places to fit just about any life style choice, and be able to make a good living doing it. Fayetteville in Fayette

County is a place that has grown up around "cool" outdoors activities like whitewater rafting, rock climbing and mountain biking. Morgantown in Monongalia County is a city that has a "hot" reputation for educational opportunities, manufacturing, new technology and medical advancements that support growing prospects for business and employment.

Fayetteville has become the home of several distinct restaurants, contributing to its culinary tourism.

FAYETTEVILLE

MORGANTOWN

a **COOL** place to
live, work and play



a **HOT** town for
building a future

Morgantown is both youth-oriented and aspirational to business professionals who want a simpler life but all the amenities and advantages of a larger town. It is one of the hottest places to live and work in West Virginia for anyone looking to build a better way of life while working in a chosen career.

Morgantown has the state's lowest unemployment rate: 4.5 percent. Forbes magazine listed it as the #7 Best Small Place for Business and Careers in the nation in 2012. The American Institute of Economic Research puts it among the top 10 college towns in the nation.



Fayetteville is popular with readers of Budget Travel magazine, who voted it as one of the coolest

small towns in America. It is high on the “cool” meter based upon its popularity among young people for outdoor adventure sports, related support businesses, and a growing reputation as a destination for outstanding and unusual local restaurants. The town’s population has grown a healthy five percent over the past decade.

Construction of the New River Gorge Bridge and the start of the whitewater rafting industry in the 1970s ignited the resurrection of the former coal mining town. Now, outdoor adventures such as mountain biking, rock climbing, zip lines, canopy tours and hiking draw hundreds of thousands of people from around the world each year.

Young entrepreneurs who love these activities come to play and decide to stay, creating support businesses. A side effect has been the creation of many unusual restaurants that allows the Fayetteville Convention and Visitors Bureau to promote “culinary tourism.”

“We have evolved into a lot more than just the bridge, the gorge and rafting,” said Sally Kiner, executive director of the Historic Fayetteville Convention and Visitors Bureau. “Fayetteville has a rich Civil War history



Outdoor adventures like this rope bridge for the Tree Tops Canopy Tour in the New River Gorge draw thousands of visitors each year.

Evidence that Morgantown is a great place to live and work? Sperling’s says as of 2012, its permanent population of nearly 30,000 people has grown more than 13 percent since 2000; Morgantown’s cost of living is 3.8 percent lower than the U.S. average; and jobs have increased in spite of the recession.

“West Virginia University is the engine that drives the entire economy here,” observed Sharon Stratton, manager of the West Virginia Small Business Development Center office in Morgantown. That includes not only educational opportunities which draw nearly 32,000 students each year, but also advanced technology, high tech industries, health care and medical research, federal and state government agencies, along with all the supporting businesses they attract.



Right: The Personal Rapid Transit (PRT) system is a one-of-a-kind transportation system at WVU.

Left: High Street in downtown Morgantown features eclectic businesses that attract both local and college student customers.



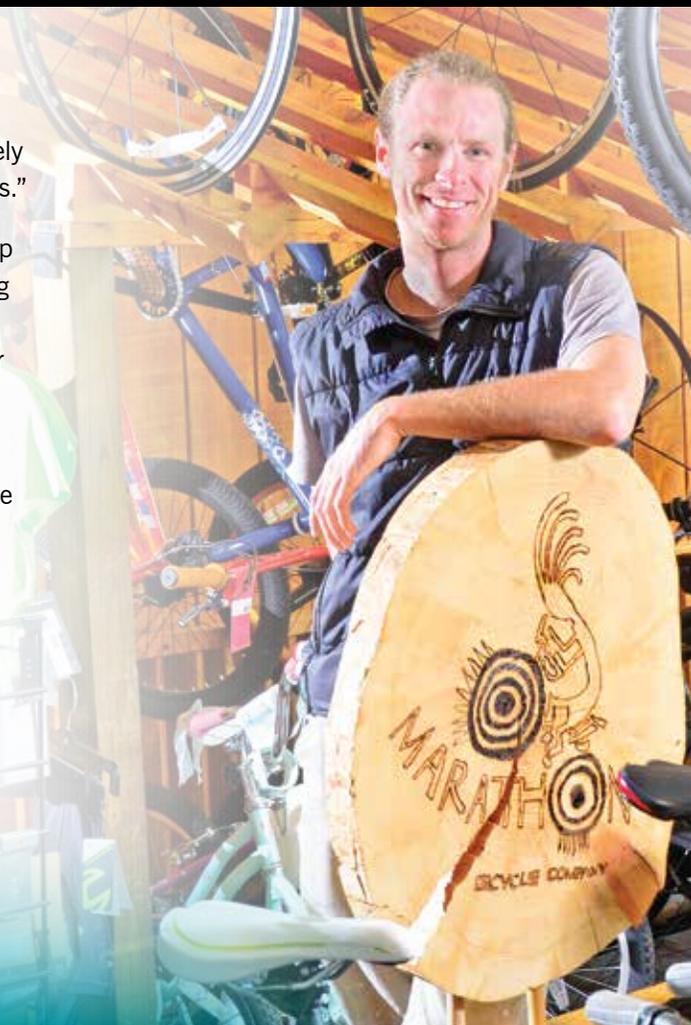
and a lasting Italian heritage because of the immigrants who came to work as coal miners and stone masons. We've attracted the lovely little shops, an ice cream shop, an upscale bakery and many others."

One of those shops is Wisteria's, which owner Denise Scalph set up 15 years ago. She says it carries "a little bit of everything, including name brand jewelry and handbags, sunglasses, bath and body products, and so forth." She sees her business as part of the larger evolution of the town and part of what makes it "cool."

"We have a diversified, friendly community here, and the people who come to visit enjoy it and they come back and tell other people about it."

Adam Stephens' Marathon Bikes has been in business for seven years. He worked as a whitewater rafting guide before opening his bike shop and expects business to grow as the Summit Bechtel Family National Scout Reserve becomes active.

"The Boy Scouts setting up in our backyard is creating job opportunities for the outdoors industries. A few of my friends set up businesses that have been able to take off because of different aspects of the Boy Scouts, directly and indirectly."



"Young professionals looking to build careers in health care are drawn to Morgantown because WVU Medical Center, Ruby Memorial Hospital and Mon General provide increasing services that demand more trained workers," Stratton said. "Our diversified economy also includes job opportunities from such employers as Mylan Pharmaceuticals, National Energy Technology Laboratory, National Institute of Occupational Safety and Health, and even the FBI."

"People from more than 100 countries live in this

area," Stratton said. "It makes for a very diversified culture – fairly young and highly educated. It makes it an exciting place to be. There's a lot of construction underway for apartments, townhouses and condominiums."

In her role with the SBDC, Stratton has helped many entrepreneurs get started, especially on High Street in the downtown area where students

"People from more than 100 countries live in this area. It makes for a very diversified culture – fairly young and highly educated. It makes it an exciting place to be."

Sharon Stratton, manager
WEST VIRGINIA SMALL BUSINESS
DEVELOPMENT CENTER,
MORGANTOWN



“There’s just so much to do on so many different levels. That draws in a younger group of people who love to be here and get involved with the community and events and really creates that energy and drive to develop more.”

Adam Stephens,
owner
MARATHON BIKES

Kenny Parker started his business, Water Stone Outdoors, in 1994 and has watched it grow. He sells gear and conducts guided outdoor adventures.

“The coolness is because the whitewater rafting and other outdoors opportunities are so good. The people who are in the know are going to flock to where the good stuff is.”

Parker agrees that the Boy Scouts camp will bring new opportunities.

“We’re doing some renovations so that we’ll be able to process more people. Our goal has been to help people have a good time, get them where they need to go and leave with an attitude that says, ‘Wow! That place is awesome! There’s so much to do I want to go back!’”

shop. She and her staff review business plans, teach seminars in business start-ups, and provide advice for finding financing options.

One success story is the Chaang (pronounced “chong”) Thai Restaurant, owned and operated by Raj Sundaram. A few years ago, while living in Washington, D.C., he and his wife Pookie were looking for a place to start a Thai restaurant.

“I wanted to be in a small or midsize town,” Sundaram said of his search. “I wanted to be the first Thai restaurant to be open in such a town. I wanted a town with a stable economy and industries and available health care. I wanted to be in a vibrant college town. I also wanted to be on a busy downtown main street which would be a focal point for everybody.”



Raj and Pookie Sundaram created Chaang Thai Restaurant in Morgantown. They have expanded once with a frozen yogurt shop and look to open a second Thai restaurant nearby soon.

Active people like to eat, and in recent years a string of locally owned and operated specialty restaurants has sprung up, including Pies 'N' Pints, Cathedral Café & Book Store, Dirty Ernie's Rib Pit, and... Secret Sandwich Society.

"The presidents of this country are said to be members of some loose secret society," explained owner Lewis Rhinehart. "All our sandwiches are named after presidents, and all our salads are named after first ladies. We even have a secret menu that our servers will tell you about if you ask."

Rhinehart says Fayetteville is the place to be for both tourists and "transplants," people who visited for rafting and rock climbing and stayed to work and raise families. "It's definitely a cool place all four seasons."

Another restaurant with a "secret" is DiOGi's Latin Grill and Cantina. The clues are in the restaurant's name and the canine décor, according to owner Barbara Aguilair, whose husband Oscar also serves as chief cook.



"Our favorite things are dogs so when you say the restaurant's name, DiOGi's, you're really spelling out D-O-G."

A West Virginia native, Aguilera was running a restaurant with her husband in Philadelphia when their daughter told them they should come home.

"She had come here rock climbing and she called and said 'Mom, you've got to go to Fayetteville. It's a really cool place. It would be a great place to open a Mom-and-Pop something,' so here we are."

And they aren't the only ones. Sally Kiner of the CVB sees this trend continuing.

They decided Morgantown was the place. With the help of the SBDC, the Sundarams have set up a successful restaurant that opened in 2011 and expanded with a frozen yogurt shop next door in 2012.

Main Street Morgantown is a business organization that helps promote downtown businesses and also works to preserve and improve its physical environment. Because of the stable economy and the university, Morgantown is a thriving town that is attractive to young professionals and entrepreneurs, according to Executive Director Terri Cutright.

"We have a lot of amenities you find in larger communities, yet we don't have the crime rate. On any

"Our quality of life really attracts a lot of young people and their families."

Terri Cutright,
executive director
MAIN STREET MORGANTOWN

given night there is something to attend, be it a lecture at WVU or a concert at the Met Theater or one of several art galleries has a showing, or a local restaurant or club has somebody performing. If you are a computer programmer you can be anywhere in the world. Our quality of life really attracts a lot of young people and their families."



“Many of the people here came from other states for the climbing and rafting year after year and they loved it so much they decided that it was cheaper to buy a house and live here than to travel back and forth.”

Barbara Aguilair, owner
DIOGI'S LATIN GRILL AND CANTINA

“What I'm seeing now are 20- and 30-somethings who have college degrees and are professionals. They could work anywhere, but they are choosing to live here in Fayetteville because they can enjoy the recreational and art aspects of the city. In the past two years there have been 28 babies born. They have made their home here.” **E**



The Caperton Trail, a level paved refurbished railroad track, is popular with bikers, runners and walkers along Morgantown's riverfront

Another group that helps the city maintain its business and lifestyle reputation is Generation Morgantown, an affiliation of young professionals and leaders that promotes social interaction.

“We encourage business development through programming and mentorship,” explained Kim Moyers, co-chair and advisory board member for Generation Morgantown, and who is a business banker at First United

Bank and Trust. “We have a ‘live, work, play’ philosophy. We were involved with the 2012 West Virginia Leadership Summit held in Morgantown. We’ve hosted educational seminars geared toward young talent on topics such as professional and social dining, etiquette and networking. We also provide networking opportunities by hosting monthly First Friday events at local establishments.”

Things are just warming up for Morgantown, and it looks to get hotter in the future in this growing area of the state. **E**



Road to R

By Courtney Sisk

West Virginia is known as the most northern of the southern states and the most southern of the northern states. This ideal location in the Mid-Atlantic region is within a day's drive of 50 percent of the United States population: a competitive advantage for companies who must get their products to market quickly. Not only that, but the state's diverse transportation network is often cited as one of the keys to a company's success. That network is about to expand even further with the opening of the Heartland Intermodal Gateway, a facility in Prichard, scheduled for June 2015.

Huntington, W.Va., is home to the largest inland water port for tonnage in the continental United States. The opportunities that presents, as well as its close proximity to the Atlantic coastal ports including Baltimore

and the Port of Virginia, were a factor in the state being chosen. The site in Prichard is close to an interstate corridor, and the Norfolk Southern railroad will run directly through the intermodal facility.

“When goods come in from South America or Europe, they come in to a coastal port in a Mid-Atlantic state. International shippers and those who import into the United States want to pick the best location to move their goods throughout the United States,” said Doug York, executive director of the West Virginia Public Port Authority. “West Virginia will certainly be a big player because of the Class 1 railroad, as well as our interstate highway system.

Those goods coming into West Virginia via the intermodal facility will provide direct service to Norfolk if you are going eastward

ail : INTERMODAL FACILITY MAKES SHIPPING SENSE



The Heartland Corridor, which will include the Prichard Intermodal Terminal, opened on September 9, 2010, to double-stack intermodal traffic. The investment ultimately reduced each container move by approximately 225 route miles and decreased transit times by 48 hours.

Double-stack cars come in a number of sizes, related to the standard sizes of the containers they are designed to carry. Well lengths of 40, 48 and 53 feet are most common. Heights range from 8 feet to 9½ feet.

for an export, and for imports, from Norfolk to the Prichard facility, and all points west, such as Chicago and St. Louis and eventually California.”

West Virginia is part of what’s called the Heartland Corridor, which stretches from the eastern seaboard to Chicago. In 2000, the major rail companies were looking for ways to move more freight with fewer trains. One problem was that several of the tunnels along the Corridor were not high enough to accommodate trains with double-stacked containers. West Virginia had the most tunnels that needed to be raised or the

railroad beds lowered or the tunnels notched. The state administered about \$90 million of funding from Congress to see that this project of national significance was completed. In doing so, West Virginia’s leaders looked ahead and decided that if the Class 1 railroads were going to be transporting more freight, they wanted to be part of the regional and global marketplace in the movement of goods. Norfolk Southern agreed to help subsidize and build an intermodal facility for the transfer of this cargo from truck to rail.

“One of the many things this accomplishes is removing some trucks off the highways,” York

“Without the funding to improve highway systems throughout the 50 states, we have to find ways to reduce that traffic. An intermodal facility does just that. If you can move twice the freight in half the time by rail, that means fewer vehicles are on the highways, thus creating a cleaner atmosphere.”

Doug York, executive director
WEST VIRGINIA PUBLIC PORT AUTHORITY



said. “That’s significant in that Congressional highway funding throughout all of the states has been somewhat lacking, but freight continues to be on the rise. That clogs our interstate highways. Without the funding to improve highway systems throughout the 50 states, we have to find ways to reduce that traffic. An intermodal facility does just that. If you can move twice the freight in half the time by rail, that means fewer vehicles are on the highways, thus creating a cleaner atmosphere.”

The vision of the Prichard facility is to spur economic growth around the state in the way of warehousing and distribution and supply centers.

“It’s not going to just affect Prichard or Wayne County, and just attracting businesses there. Businesses locating throughout the Kanawha Valley, and points north and south of us, will know that we’re going to be the closest intermodal facility to them. It will cut about 120 miles off their route by using us instead of having to go to a port in Lexington or Columbus. Saving time saves money.”

The goal isn’t to focus just on attracting big shippers. Smaller companies that may not do a lot of shipping can also benefit from locating

close to the intermodal facility.

“We’re hoping the available properties nearby will be marketed appropriately and everybody will work together to attract some businesses to move to the area, large or small. Small distribution facilities, or a small organization that may ship only 100 containers of goods a month. We will be able to bring them to the area and show that they have a ready-made facility to use right there,” York said. “High-priced electronics and televisions and things like that, those are quick turnarounds and those have to be done pretty quickly, and that’s what makes the truck-to-rail operation very attractive.”

The Prichard facility is only one part of West Virginia’s transportation network, and York says showcasing the big picture is important.

“West Virginia offers four forms of transportation. We have the river, the interstate system, the rail system, and airports. Some of our big freight movers obviously are FedEx and UPS, which operate out of the airports. That’s how we have to approach. We have to sell all the forms of transportation that would interest companies to want to move to West Virginia.” **E**



Easy to Fly, Easy to Drive:

DISTRIBUTION CENTERS THRIVE IN WEST VIRGINIA

West Virginia is home to distribution centers including Coldwater Creek in Mineral Wells, rue21 in Weirton, and Macy's in Martinsburg. All take advantage of the latest innovations and the state's highly skilled workforce to get their merchandise to stores across the country. These aren't the only centers growing and thriving in West Virginia.

CABELA'S

West Virginia enticed Cabela's, the "World's Foremost Outfitter," to locate a 540,000-square-foot distribution center, as well as a retail store of more than 175,000 square feet, in Wheeling. The distribution center opened in August 2004 and has expanded to approximately 1.2 million square feet. There are about 1,200 full-time jobs at the two facilities and an estimated four million visitors a year.

The Wheeling distribution center is centrally located to many of Cabela's retail locations in the central U.S. and all of its retail locations in the east, which makes it an efficient hub.

"Our Wheeling location is right along Interstate 70 with easy access from the east and west. Also, it is a short distance to several north-south interstate routes," said Cabela's spokesman Wesley Remmer. "As Cabela's continues to grow, this access will allow the Wheeling distribution center to be able to fulfill more direct-to-customer orders and more retail store orders."

CSX

CSX has a long history in the state. Huntington has proven to be a very good home for the dispatching center that opened in 2008. Currently, there are about 85 people working at the center, which operates on a 24/7

basis. They handle the movement of trains on CSX lines in an area including Newport News, Va., Elkhorn City, Ky., Cincinnati and Toledo, Ohio. Tri-State Airport is right by the Huntington facility, and Yeager Airport in Charleston is within easy driving distance. Huntington is the division headquarters for the area dispatched by the center there, which helps foster very close communication and collaboration.

"Certainly the proximity of the airports in Huntington and Charleston and I-64 has made the city very accessible. The region is ideally located for distribution centers which can be served by rail and highway – always an ideal combination," said J. Randall Cheetham, CSX's Huntington-based regional vice president for state relations and community affairs. "We are very happy and proud to be in West Virginia. We have a great relationship with the communities and people here."

Opposite: Cabela's has both a distribution center and retail store in Wheeling.

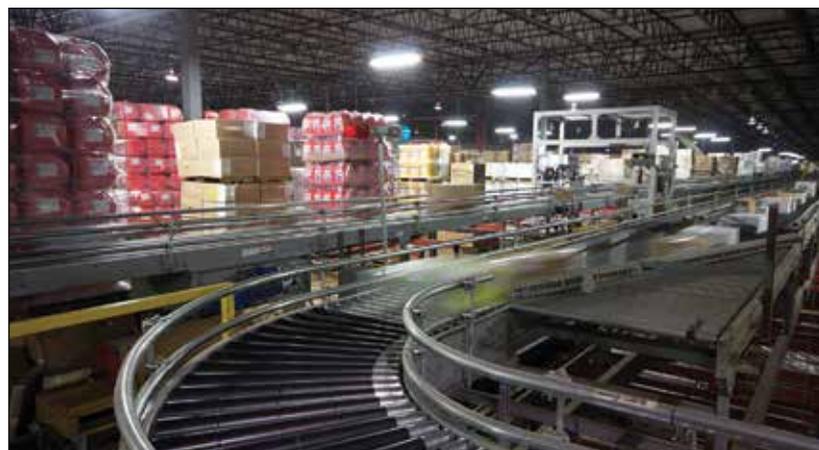
Below: Huntington is home to the CSX division headquarters. More than 1.5 million carloads of product, mostly coal, move through West Virginia each year.



ORGILL

Orgill is the largest privately owned hardware wholesaler and distributor in the world. The company sells and distributes to hardware stores, home centers and lumber yards, both independents as well as customers that are regional and national chains. The distribution center in Inwood opened in 2000, expanded in 2005 and currently employs almost 400 people. It services the Mid-Atlantic region from North Carolina to the tip of Maine; westward into Kentucky, Ohio and Michigan; and the Canadian provinces as well.

“The location has helped us grow as a company. It enabled Orgill to increase capacity and expand business into this region. Inwood is right on the I-81 corridor, so it's easy access to other major interstates and highways. We are a one-day or at most a two-day drive to our domestic markets,”



said Rob Brown, VP of distribution – NE Region for Orgill.

Brown says it's not just the location that helps fulfill the company's mission to make its customers successful.

“Our employees here at Inwood really take pride in making that happen each day. We have a very good

Above: Orgill's distribution center in Inwood is one of five the company has in the U.S. Orgill distributes hardware products to more than 60 countries around the world.

workforce with low turnover. We're known in the community as a great place to work and we have dedicated employees here. They've definitely been key to our success here in West Virginia.” **E**



In-process sample solutions in the Quality Control Laboratory of Mylan Pharmaceuticals in Morgantown, W.Va.

Economic Evolution

By Catherine Zacchi

Innovation and technology are transforming the economy around the world.

West Virginia is contributing to this trend with advances in the emerging field of bioscience.

A new study – Battelle/BIO State Bioscience Industry Development 2012 – cites bioscience as “a large and rapidly growing segment of the world economy.” From 2001-2010, the sector added jobs in 34 states, including West Virginia.

“The bioscience industry is creating new technologies – pharmaceuticals, diagnostics, medical technologies, chemical processes and more – that not only advance science but also provide

high-wage jobs to West Virginia residents,” said Derek Gregg, a founder and CEO of Vandalia Research, a Huntington-based biotechnology company specializing in the large-scale production of DNA sequences.

Gregg also serves as chairman of the nonprofit Bioscience Association of West Virginia (BioWV).

“A successful life science industry begins with research, which then leads to discoveries,” Gregg said. “Those discoveries then provide the basis for company development and economic growth for the state. West Virginia is having success but there is much more that can be done to help grow this industry within our borders.”



INCUBATING RESEARCH

The state's research universities, medical hubs and high-technology clusters of entrepreneurial and governmental agencies provide the essential elements to cultivate a new economy.

WVU Healthcare provides a full range of health services to people from all across the state, and includes teaching hospitals and clinics for West Virginia University's health professions schools.

WVU Hospitals includes Ruby Memorial Hospital, WVU Children's Hospital, Jon Michael Moore Trauma Center, Chestnut Ridge Hospital in Morgantown, and WVUH-East with two hospitals in the Eastern Panhandle. Together with hospitals in Clarksburg and

West Virginia University's Robert C. Byrd Health Sciences Center includes five health professions schools that provide the anchor for health care, biomedical research, and service activities associated with the University.

Nalini Santanam, a professor with the Marshall University's Joan C. Edwards School of Medicine, conducts research into the mechanisms of cardiovascular disease, obesity and endometriosis.

Parkersburg, it is part of the West Virginia United Health System, which provides care to nearly one out of four hospital patients in the state.

WVU Hospitals embarked on a four-year \$248 million expansion at Ruby Memorial in 2012. In 2013, WVU Hospitals announced plans to build a \$52 million outpatient center at the University Town Centre near Morgantown.

"The project will expand access for patients and broaden the scope of what WVU Hospitals offers," said Bruce McClymonds, president and CEO of WVU Hospitals. University leaders say the growth will benefit research, clinical and educational programs in all WVU's health professions schools.





West Virginia is investing in its two research universities – WVU and Marshall University – to grow their capacity for research that can be translated into commercial value. In 2008, the state created the West Virginia Research Trust Fund, popularly known as “Bucks for Brains.” The state legislature set aside \$50 million, allocating \$35 million for WVU and \$15 million for Marshall. The schools could use the state dollars only if they could raise matching research endowment funds from private and corporate contributors within a set number of years. Both schools met their goals.

Marshall is using its funds to support research in biotechnology, aging and

dementia, engineering, chemistry and biology, transportation, obstetrics, sports medicine and occupational and environmental health.

WVU is focusing on energy and environmental sciences; biological, biotechnological and biomedical sciences; biometrics, security, sensing and related identification technologies; and nanotechnology and material science.

Academic and commercial interests connect at the West Virginia Regional Technology Park in South Charleston. The former corporate research center now serves as a research, education and technology campus operated by the West Virginia Higher Education Policy Commission.

“**ENTREPRENEURS ARE VISIONARIES,**
but they can't do it alone.
INNOVA'S intensive due diligence
and **MENTORING PROCESS CREATES**
a strategic path to
COMMERCIAL SUCCESS.”

Guy Peduto, director
INNOVA COMMERCIALIZATION GROUP

CULTIVATING CAPITAL

A brilliant discovery is a great start, but the transition into a commercial product requires a long-term investment of intellectual and financial capital.

“Innovation and entrepreneurship are critical factors, but equity capital is what moves a company from the spark of an idea to successfully creating a business,” said Andrew Zulauf, executive director, West Virginia Jobs Investment Trust (WVJIT), the state's venture capital fund. “West Virginia has made a start, but there is a lot of room to grow.”

In addition to WVJIT, venture capital firms in West Virginia include the





PolyPlexx conducts calibration of the two-stream dispensing machine using Mesamoi, a non-reactive material which has no hazardous ingredients.

Natural Capital Investment Fund and INNOVA Commercialization Group.

INNOVA is an initiative of the West Virginia High Technology Consortium Foundation, a nonprofit organization dedicated to developing the high-tech businesses in the state.

“Entrepreneurs are visionaries, but they can’t do it alone,” said INNOVA Director Guy Peduto. “We help companies with commercialization, start up and business support services. INNOVA’s intensive due diligence and mentoring process creates a strategic path to commercial success.”

In the past 18 months, demand for INNOVA’s services has more than doubled. INNOVA is currently working with more than two dozen companies, in addition to numerous developmental opportunities from the universities, research labs and federal institutes across West Virginia.

INNOVA has invested in companies such as Air Robotics with small unmanned aerial vehicles; Aither Chemicals with a new ethane “cracker” technology; PolyPlexx with an advanced proprietary polymer; and Protea Biosciences with WVU-created technology used in bioanalytics.



DELIVERING RESULTS

Commercial startup

Startup company Protea Bioscience Group instituted the first technology transfer agreement with WVU for life science technology invented by WVU researchers. The company was founded in Morgantown in 2001.

“I’ve been in the biomedical industry 40 years and have founded five biotech companies,” said founder and CEO Stephen Turner. “I visited WVU in 2001 and was impressed with a group in the chemistry department involved in proteomics, the study of proteins.

After several meetings with them, I committed to starting the company there in Morgantown.”

Protea (pronounced PRO-te-a) employs 45 people. Its staff of 10 Ph.D.s. includes six graduates of the WVU chemistry lab.

One of multiple high-speed packaging lines with Mylan’s blue bottles that, once labeled, help pharmacists easily identify and distinguish Mylan product on the pharmacy shelves.





Internal view of the Protea Bioscience Group's LAESI DP-1000 System

Protea's Laser Ablation Electrospray Ionization (LAESI) technology lets researchers analyze biological samples in their natural state – no sample preparation – and get in minutes results that used to take 24 hours. Applications include research, pharmaceutical development and diagnostic applications.

“The biomolecular analysis of living cells and live bacterial colonies would have been impossible 20 years ago,” Turner said. “Now the data is available within minutes. It’s a real sea change.”

LAESI has received numerous industry awards, including being selected by international research journal *The Scientist* to receive the Top 10 Innovative Technologies award for 2011.

Commercial expansion

Once a startup company in White Sulphur Springs in 1961, Mylan has evolved into one of the largest generic and specialty pharmaceuticals companies in the world. Its subsidiary Mylan Pharmaceuticals in Morgantown is a market leader in researching, developing, manufacturing, marketing and distributing generic pharmaceutical products.

“People often are surprised to learn that generics companies innovate,” said Tony Mauro, president of Mylan North America. “Just like producers of brand name drugs, generics have robust research and development operations. Mylan has approximately 1,300 R&D employees working around the world.”

Among the company's innovations is heat-stable antiretroviral products used to treat people who have HIV/AIDS. The heat-stable

A Factory

A spin-off of Marshall University, Vandalia Research is a commercial producer of DNA.

“We replicate large quantities of DNA for use in scientific and medical applications,” said CEO Derek Gregg.

DNA is used in the development of new diagnostic tests, vaccines, gene therapy and other applications.

Vandalia was formed in 2004 as a startup from Marshall University. The company uses technology that allows for fast, efficient mass production of specific DNA sequences. Gregg and Vandalia co-founder Justin Swick worked on the DNA technology project while undergraduates at Marshall.

“Our customers and Vandalia are developing new technologies to improve our life spans and overall health,” Gregg said. “For example, at Vandalia we are working on DNA vaccine research that will enable rapid response to new virus epidemics.”



Progenesis alginate biopolymer production



Capsules being delivered to a high speed packaging line.

formulations can be distributed and used in warm climates where refrigeration is not widely available.

“Mylan partners with WVU to build a pipeline of trained talent for our company,” said Mauro, himself a WVU grad with a master’s in business. “We connect with the university and other regional academic institutions to offer internships to qualified applicants, and some of these interns become full-time employees at Mylan upon graduation.”

The challenge, he said, is “staying ahead of the curve” in educating people today for the jobs of tomorrow.

As the state’s universities, medical hubs, startup enterprises and corporate innovators continue to expand their capabilities, the Mountain State’s emerging bioscience economy will continue to grow. **E**

for the Scientific Age

Vandalia operates in the American Red Cross building in Huntington. The company occupies 9,000 sq. ft. on the first and second floors of the east wing, with dedicated laboratory, office, research and engineering spaces.

The DNA manufacturer is also at the center of a cluster of other bioscience companies.

“We have created an incubator of sorts out of necessity,” Gregg said. “We now have five companies in bioscience or related industries, with part or all of their operations in the same building. This allows us to share laboratory resources, get advice, and provide services to one another.”

The clustered bioscience companies include Progenesis Technologies, genetically-engineered biopolymers developer; Parabon Nanolabs, a nano-pharmaceutical company; Maven Analytical, a DNA screening and quantitation kit provider; and Crosscutting Concepts, a subsidiary of Vandalia created to develop hands-on science education products.

Two blocks away stands another resource: the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI). Vandalia regularly leases time on RCBI’s sophisticated Computer Numerical Control (CNC) machines.

Huntington’s concentration of high technology enterprises fits the pattern found with companies in emerging industries.

“Clusters of small companies have been shown to be successful in many other places with vibrant startup communities,” Gregg said. “The advantages include the cost efficiencies of sharing resources, the



Shared use of CNC Technology is available at the Robert C. Byrd Institute. Here, Vandalia’s Derek Gregg and Justin Swick examine a prototype part.

credibility a cluster lends to a small company and the stability it offers the workforce in the sector.”

Beyond the usual struggles that face startup ventures, businesses arising from research must overcome an additional set of challenges. Innovative discoveries often need lengthy ramp-up periods before they can enter the pipeline to commercial markets and achieve profitability.

“Our state is full of promising medical research waiting to be turned into spin-out companies,” Gregg said. “The challenge will be whether we have the will to take the risks necessary and make the investments required to be successful in a global market. West Virginia must have a healthy investment community, experienced entrepreneurs and world-class education to be competitive.”

REGIONAL UPDATES

West Virginia sets record export growth rate third year in a row

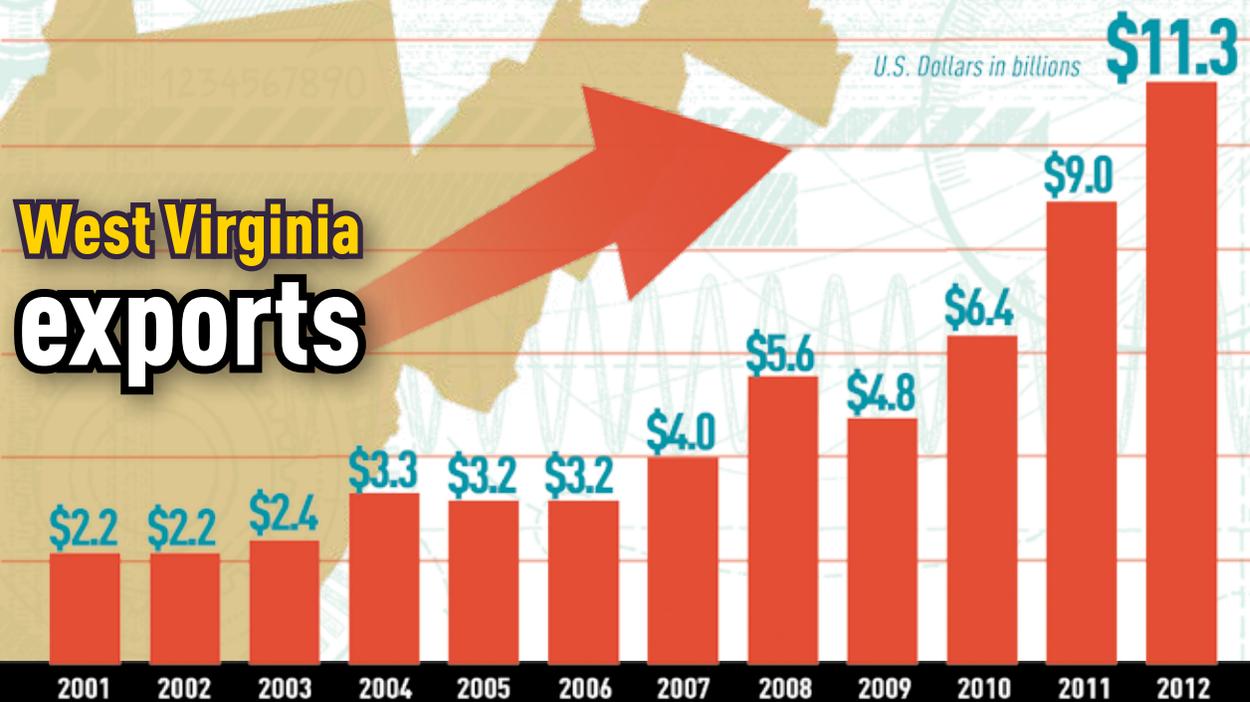
In 2012, West Virginia's exports grew by 25 percent, surpassing the national growth rate of 4.5 percent. The state's exports reached a record level for the third consecutive year, growing from \$9 billion in 2011 to \$11.3 billion in 2012.

Top export products were coal, machinery, chemicals, aerospace components, medical devices/products, automotive components, aluminum, wood products, electrical machinery and rubber products.

Trans Energy breaks company production records in W.Va.

Trans Energy has set company production records in the state with two gas wells in Marshall County, W.Va. The 30-day initial results on the Doman #1H produced an average of 6,421 MCfe per day and Doman #2H site produced 5,567 Mcfe per day. Trans Energy reports that the adjusted rates for the Doman #1H and the Doman #2H represent the second and fourth best 30-day IP rates of any of the company's wells to date. The effective horizontal lengths that were hydraulically stimulated in the parallel #1H and #2H wells were 3,420 feet and 3,427 feet, respectively.

West Virginia exports



WVJIT and INNOVA invest \$1 million in Morgan County sensor manufacturer

A collaborative loan totaling \$1 million will help sensor manufacturer Berkeley Springs Instruments (BSI) to open a research facility in Morgan County. The loan will also enable BSI to ready its new Eagle Array Sensor for the commercial market. The loan is a joint effort of INNOVA Commercialization Group, (INNOVA) — an initiative of the West Virginia High Technology Consortium Foundation — and West Virginia Jobs Investment Trust (WVJIT), the state venture fund. INNOVA and WVJIT each invested \$500,000.

BSI's research center is expected to create two to five jobs. The company's new Eagle Array Sensor is designed to operate underground, underwater or on the surface to monitor the integrity of petroleum and gas pipelines and tanks. BSI specializes in the fabrication of innovative ultrasonic sensors and multi-parameter sensor networks for monitoring the mechanical integrity of tanks, pressure vessels and pipelines.

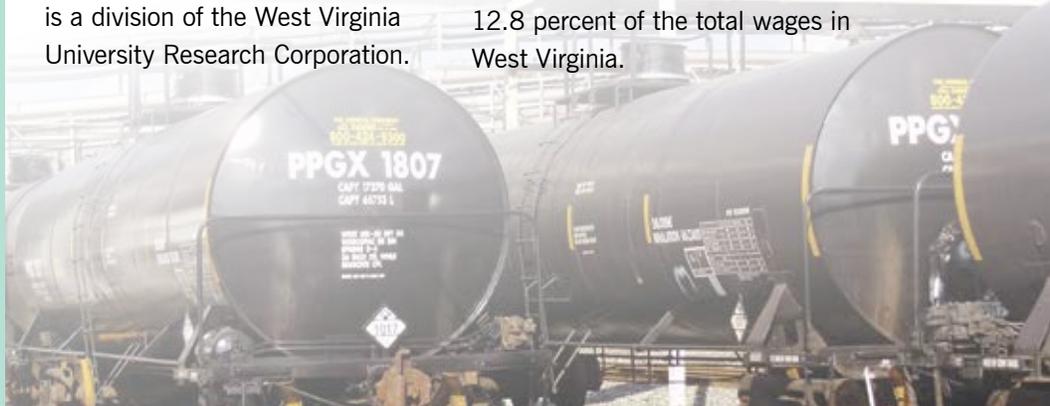


WVU launches new research center to conduct human clinical drug trials

West Virginia University launched the WVU Clinical and Pharmacological Research Center (CPRC) to conduct human clinical trials on new medications. The drugs are being developed for use in the United States as well as other countries. The center can perform studies to establish that generic medications have the same properties as their name-brand equivalents and research that measures how drugs are absorbed by the human body. CPRC will recruit volunteers from the Morgantown area and beyond to participate in the trials. CPRC is a division of the West Virginia University Research Corporation.

Report highlights economic contribution of state's technology industry

The technology industry in north-central West Virginia added \$1.7 billion of output to the state's economy in 2011. That's one of the findings in *Economic Impact of the North Central West Virginia Technology Industry on the West Virginia Economy*, a report by Amy Godfrey, assistant professor of economics at Fairmont State University. The report examined wage and employment data from 52 North American Industry Classification System (NAICS) codes (the standard used by federal statistical agencies in classifying business establishments). The codes represent a wide spectrum such as chemical manufacturing, pharmaceutical production, oil and gas extraction, forestry and scientific research. In 2011, the technology industry accounted for 7.3 percent of total jobs and for 12.8 percent of the total wages in West Virginia.



REGIONAL UPDATES

West Virginia-made sandals kicking up sales around the world

A sandal manufacturing company that moved its manufacturing facility from Mexico to Morgantown in 2010 now exports all over the world, from Africa to the United Kingdom. Recently, RS Marketing LLC shipped its Gurkees rope sandals to a new customer, a resort in the United Republic of Tanzania in Eastern Africa. In addition to its international clientele, RS Marketing supplies Gurkees sandals to wholesalers and retailers in the United States.

Jefferson County business wins Rural Innovation award

Bloomery Plantation Distillery of Charles Town is one of five recipients of the regional 2013 Forum for Rural Innovation Awards. The winners were honored in March at the Forum's annual meeting, held in Winchester, Va. The Bloomery grows raspberries and lemons and is the first commercial lemon harvester in the Mid-Atlantic United States. Owners Linda Losey and Tom Kiefer transform Bloomery crops and other local fruits, roots and nuts into award-winning cocktail liqueurs such as limoncello, raspberry limoncello and ginger. The Forum showcases projects that enhance farm or rural business prosperity. The Forum for Rural Innovation is a cooperative educational effort by the Office of Agricultural Economic Development and Cooperative Extension in Virginia and West Virginia; the town of Berryville, Va.; and the Small Business Development Center of the Eastern Panhandle.





Stockmeier Urethanes to expand operations in Harrison County

Stockmeier Urethanes USA Inc. plans a multi-year expansion of its operations in Clarksburg. The German-owned polyurethane company has acquired four acres and an office building adjacent to its plant. The acquisition represents an investment of \$1.85 million. Plans call for the office building to be retrofitted and the company's production facility to be enlarged. The expansion is expected to continue into 2015.



Weirton

Italian company to build first U.S. manufacturing plant in Weirton

Pietro Fiorentini USA plans to build a manufacturing facility in the Three Springs Business Park in Weirton. The \$9 million plant is expected to create up to 41 jobs in phase one and up to 150 when fully operational. Parent company Pietro Fiorentini S.p.a., based in Italy, is a world leader in the production of pressure regulators, valves and pressure-reducing and metering systems for the natural gas industry.

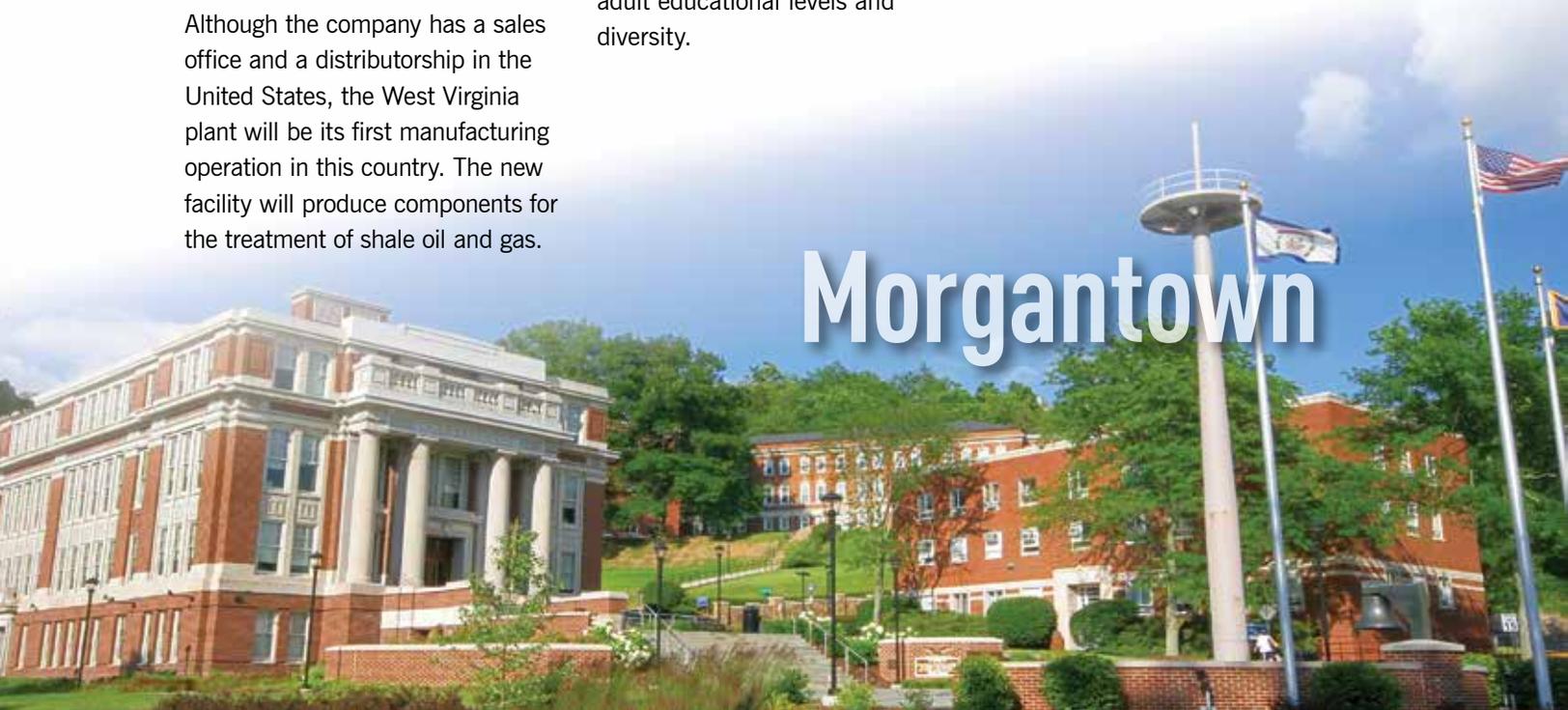
Although the company has a sales office and a distributorship in the United States, the West Virginia plant will be its first manufacturing operation in this country. The new facility will produce components for the treatment of shale oil and gas.

Hurricane rates among best small towns to raise children

The town of Hurricane ranks among the best small towns in America to raise children, according to *Bloomberg Businessweek*. The magazine and Bloomberg Rankings evaluated more than 3,200 towns nationwide. The list was narrowed to 51, with the town in Putnam County coming in at #49. The evaluation included factors such as public school performance, safety, housing costs, poverty, adult educational levels and diversity.

Morgantown ranks among “10 Best College Towns in America”

Morgantown, home of West Virginia University, ranks in ninth place among “the 10 Best College Towns in America,” according to the online business site *Business Insider*. The best towns offer large student populations, modest costs of living and “loads of cultural opportunities,” according to *Business Insider*.



Morgantown

WVJIT invests \$100,000 in The Fenton Group to revitalize production

With an investment of \$100,000, the state's venture capital firm West Virginia Jobs Investment Trust (WVJIT) closed its first round of funding in the Fenton Group. Fenton Art Glass has been a fixture in Wood County since 1905. In addition to the direct jobs that supported the employees and their families, the company had been a tourist destination, attracting visitors to the community and to the state. The Fenton company struggled in recent years with rising costs and declining sales. In 2011, Fenton shut down its main furnace, stopping production of its classic lines of art glass. In 2012, the Fenton Group (doing business as US Glass Inc.) acquired the assets of the Fenton Art Glass Company in Williamstown. The financing through the West Virginian Capital Access Program (WVCAP) provides for operating capital, marketing and advertising support.

New **funding** and
new **ownership**
may revive a productive future
for 107-year-old
**Fenton Art Glass
Company**
in Williamstown.



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