

THE MISSISSIPPI

Advantage

A QUARTERLY PUBLICATION OF THE MISSISSIPPI DEVELOPMENT AUTHORITY

First Quarter 2017



UNMANNED AERIAL SYSTEMS

Soaring Beyond Sectors to Deliver the Future

Mississippi State University ASSURE
The Sky's the Limit for University's
Innovative Research Program

Interview Q&A
with Bruce Chinn, Chevron



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First Quarter 2017

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Welcome from **Governor Phil Bryant**

It's not enough to say we can do it. We are doing it.

A skilled and productive workforce is a key factor when companies look to expand or create business opportunities in a new market. Mississippi has both. Our state takes the necessary steps for a sustainable workforce to meet the evolving needs of our corporate partners. We also continually train an emerging workforce to meet those needs for years to come. The results are clear – global companies are choosing our counties as their next location, due to the superior workforce and training opportunities found across the state which is enhanced by your leadership.

To assist FEUER Powertrain ramp up its first North American manufacturing plant in Tunica, the Mississippi Development Authority's Workforce Division partnered with Northwest Mississippi Community College and the Delta Workforce Investment Area to ensure the company has a highly trained workforce.

Yokohama chose West Point as the site of the company's first greenfield site U.S. tire production plant. One of the major advantages was Mississippi's commitment to supply Yokohama with qualified job applicants. Three years later, Continental Tire followed suit with their decision to locate a commercial vehicle tire manufacturing facility near Clinton. Again, access to a quality workforce was a major factor.

The Mississippi Development Authority's Workforce Bureau ensures a seamless link exists between businesses, economic developers, and the workforce services and training available through the state's workforce system. We depend upon our county partners for their participation to strengthen our workforce assets and aid our efforts.

MDA provided more than \$1.7 million in workforce training funds in 2016. This supports the state's community colleges, universities and WIN Job Centers in meeting the critical hiring and training-related needs of businesses.

In the 2016 Legislative session, I signed new legislation establishing the Mississippi Works Fund. This legislation was funded by a reduction in unemployment taxes paid by businesses operating in Mississippi. The funds will be used to train Mississippi's workforce to assist the state's industries and businesses.

The law commits 75 percent of the funds for new job creation and 25 percent for existing workforce and workforce certification. The majority of the training provided is through the state's highly acclaimed community college system. MDA has the flexibility to direct funds to meet the recruitment and expansion needs of businesses and industries.

Ultimately, the workforce training can be characterized by two statements: Mississippi is a ready-to-work state with a workforce on demand. Thanks to the resolve and creativity exhibited by our state and local leaders and the support of our counties, Mississippi is committed to generating the talent necessary to help our businesses and industries win in today's competitive global arena.

Mississippi Development Authority believes community development precedes economic development. By investing in workforce training we are building stronger counties and creating opportunities for your area. Thank you for working with MDA to build a more competitive Mississippi.

Sincerely,

A handwritten signature in black ink that reads "Phil Bryant". The signature is fluid and cursive, with a large initial "P" and "B".

Mississippi State University ASSURE

The Sky's the Limit for University's Innovative Research Program



"Insitu is the latest example of an innovative aerospace company choosing the state of Mississippi to grow its business."

— David Shaw,
MSU Vice President for
Research and Economic
Development

The aerospace sector soars in Mississippi thanks in no small part to the innovative contributions of the state's research universities.

A testament to those contributions is the selection of the Mississippi State University ASSURE team to operate the Federal Aviation Administration's National Center for Unmanned Aircraft Systems.

Formally known as the Alliance for System Safety of UAS through Research Excellence, ASSURE is tasked with identifying issues critical to the integration of unmanned aircraft systems into the nation's airspace and engaging in research and policy development on the growing use of UAS. MSU is the lead institution.

"The ASSURE team has the capabilities and resources to quickly get up and running to help the FAA address the demands of this challenging technology over the next decade," said FAA Administrator Michael Huerta.

After an extensive competitive

review process, MSU secured the Center of Excellence because of the state's well-developed assets in aerospace research. ASSURE's UAS testing occurs at Stennis Space Center in Hancock County in airspace over the Gulf of Mexico, the Mississippi Delta for precision agriculture practices, and MSU's Raspet Flight Research Lab in Starkville.

"Our researchers are among the very best in the world."

— Mark Keenum, *MSU President*

Following the Center of Excellence designation, the university's ASSURE team drew the attention of Insitu, a subsidiary of The Boeing Company and creator of unmanned systems and software technology. The company opened a facility at the Thad Cochran

Research, Technology and Economic Development Park at MSU.

“Insitu is the latest example of an innovative aerospace company choosing the state of Mississippi to grow its business,” said MSU Vice President for Research and Economic Development David Shaw. “Mississippi State has a long and successful history of working with these industry leaders in manned and unmanned flight, and we are looking forward to contributing to Insitu’s success.”

Comprised of 23 of the world’s top research universities and more than 100 leading public- and private-sector partners, ASSURE sits on 14 FAA and international aviation rules and safety committees. The coalition has more UAS than the US Air Force, and only the Department of Defense flies more UAS hours yearly than ASSURE.

ASSURE is a recognized leader in a number of fields, and well known for productive partnerships, real-world impact, and offering undergraduate and graduate students unique research opportunities. In FY 2013, MSU’s research and development expenditures totaled \$206 million -- representing nearly half of all R&D by higher education in the state, according to National Science Foundation data.

“Our researchers are among the very best in the world, and leading this national center of excellence is another example of the tremendous contributions major research universities make to the communities and constituencies they serve,” said Mississippi State University President Mark E. Keenum.

Learn more about ASSURE at www.assureuas.org. ■

Incentives Spotlight

Mississippi Aerospace Initiative Incentives Program

The Mississippi Aerospace Initiative Incentives Program provides tax incentives to companies locating or expanding in the state. These companies must manufacture or assemble components for the aerospace industry or provide research, development or training services for the sector.

The incentives include a 10-year exemption from state income and franchise taxes, as well as a sales and use tax exemption for the purchase of component building materials and equipment related to the start-up or expansion of the facility. In order to qualify, companies must invest a minimum of \$30 million and must create at least 100 full-time jobs. Eligible aerospace businesses must be certified by the Mississippi Development Authority to take advantage of these incentives.

To apply, contact MDA’s Financial Resources Division at 601.359.3552 or email financial@mississippi.org. For further details, see the Mississippi Tax Incentives, Exemptions, and Credits guidelines on the Department of Revenue website at <https://www.dor.ms.gov/>.

To learn more about incentives available to aerospace businesses locating or expanding in Mississippi, view the Aerospace Tax Incentives overview.

MISSISSIPPI Locations & Expansions

October - December 2016

October 11

Valley Racks - Valley Racks INC
10 New Jobs

Steel fabrication company Valley Racks is expanding operations in Grenada, Miss., creating 10 jobs. Valley Racks' expansion will increase the company's capacity, allowing for the acquisition of new projects. Valley Racks currently employs 19 in Grenada. In addition to steel fabrication, the company provides water jet, laser and powder coating service.

October 17

Praxair Surface Technologies - Ellisville
250 New Jobs

Following a competitive site-selection process, Praxair Surface Technologies, Inc., a wholly owned subsidiary of Praxair, Inc., and GE Aviation announced the formal creation of joint venture PG Technologies, LLC, which will primarily be located in Ellisville. The location will supplement the services from other PG Technologies locations in Indianapolis, Ind., and the Republic of Singapore, as well as from the global facility network of Praxair

Surface Technologies. The project will increase employment at the former GE Aviation facility to 250 by 2020, with the potential to grow to 400 jobs.

October 25
Express Grain Terminals - Greenwood



\$2 Million Capital Investment,
10 New Jobs

With an addition of 10 new jobs and investment of \$2 million, Express Grain Terminals is expanding agricultural product processing operations in Greenwood, Miss. Earlier in the year, the company created 55 jobs and invested \$13 million in Mississippi. Express Grain Terminals' expansion involves the addition of a soybean processing plant in Greenwood.

November 15
Custom Engineered Wheels - Baldwyn
\$13 Million Capital Investment,
20 New Jobs



Custom Engineered Wheels will relocate from Tupelo to the Southern Motion facility in Baldwyn in Prentiss County. The

expansion represents a \$13 million investment. The move allows the company to retain its 65 existing employees and add 20 new jobs.

November 16

Feuer

Powertrain -



Robinsonville

\$140 Million Capital Investment,
300 New Jobs

A manufacturer of crankshafts for the automotive and transportation industry, FEUER Powertrain GMBH celebrated the grand opening of the company's first U.S. manufacturing operations in Robinsonville, Miss. The location also serves as the company's U.S. headquarters. The project is a \$140 million corporate investment and creates 300 jobs.

December 15

**Niagara Bottling -
Marshall County**



\$78 Million Capital
Investment,
38 New Jobs

The nation's largest private-label beverage supplier, Niagara Bottling, LLC, is locating manufacturing operations in Marshall County. The project represents a \$78 million

investment and creation of 38 jobs. Niagara Bottling recently purchased an existing 554,000-square-foot spec building in the Chickasaw Trail Industrial Park. Niagara Bottling expects to begin production in Marshall County in early 2017.

December 20

**Crown Health Care
Laundry Services -
Columbia**



\$800,000 Capital
Investment,
50 New Jobs

Crown Health Care Laundry Services announced plans to expand in Columbia, Miss., with an investment of \$800,000 and creation of 50 new jobs. Crown Health Care announced in April 2013 the company was locating health care laundry processing operations in the Marion County Industrial Building in Columbia. The announcement marked a \$12 million investment and the initial creation of 150 jobs. Crown Health Care currently employs 200 at its Columbia location.

An eastern kingbird glides alongside a Precision Hawk Lancaster 3 UAV. (photo by Beth Wynn / © Mississippi State University)



"We are at the tip of the iceberg in terms of what unmanned systems are capable of."

— David Shaw, *MSU Vice President for Research and Economic Development*

The initial goal of aviation was simple: get off the ground and stay aloft. With the application of unmanned aerial systems, the traditional borders of aviation have expanded beyond flight into sectors ranging from environmental response to agriculture to healthcare.

"We've worked with the Mississippi Emergency Management Agency on how to use UAS to monitor river flows," said David Shaw, Mississippi State University's vice president for research and economic development. "By flying a UAS up and down

UNMANNED AERIAL SYSTEMS

Soaring Beyond Sectors to Deliver the Future

the river, we can determine if flooding is a possibility and where it will occur.

“We can use information obtained to help control flooding.”

Rivers will inevitably flood, but the extent of the damage can be minimized with the application of UAS technology by providing airborne imagery of river levels and extensive mapping of runoffs.

“We are at the tip of the iceberg in terms of what unmanned systems are capable of,” said Shaw. “UAS are going to evolve like cell phones. Fifteen years ago, a cell phone was a

phone. Now, it’s a phone, camera, computer amongst other things. UAS will go through the same development.”

UAS technology has allowed aviation efforts to soar beyond simple flight into various applications concerning natural disaster response, humanitarian relief efforts, environmental impact assessment and precision agriculture. The ability exists today to obtain vital information without risk to the pilot.

Another natural disaster application is the use of UAS technology to collect

**The Healthcare
Integrated Rescue
Operations UAS**



data during inclement weather. This past summer, the National Oceanic and Atmospheric Administration flew unmanned systems into hurricanes on the East Coast. Before being destroyed by the storm's conditions, the systems were able to collect data for approximately 30 minutes, allowing analysts to determine wind strengths and exactly how broad and powerful storms are. This critical data allows for more accurate prediction of potential effects of storms.

MSU also is using UAS as another remote sensing tool available to collect visual and multispectral data in agriculture. Farmers can use data collected by unmanned systems to increase

crop yields and boost production.

"Precision agriculture is data-driven, and UAS technology adds another significant layer of data for researchers and ultimately crop consultants and producers to assess and utilize in a meaningful way," said Robert Moorhead, the director of the Geosystems Research Institute at MSU.

"UAS is creating an entirely new industry in agriculture for UAS experts who are able to collect data to analyze irrigation and herbicide and fertilizer application," added Shaw. "This aids the farmer during the crop scouting process, expanding observation from a few rows of crops to an entire field."

Recently, MSU and Hinds Community College announced an

**"UAS is creating an entirely new industry
in agriculture."**

“By flying a UAS up and down the river, we can determine if flooding is a possibility and where it will occur.”

— David Shaw, *MSU Vice President for Research and Economic Development*

academic partnership in precision agriculture. The Hinds program provides students the opportunity to earn an associate’s degree with a UAS concentration in preparation for future leadership roles in modern agribusiness.

The courses are designed to familiarize students with unmanned simulation software and hardware systems. The UAS curriculum can be combined with Hinds’ existing full-scale pilot training degree program or taken as a stand-alone mini-course designed to prepare the student for an entry level pilot position within the industry. Both Hinds and Pearl River Community College have embarked on a partnership with Camp Shelby Joint Forces Training Center to offer a UAS program.

As these academic institutions pioneer UAS technology in the field, William Carey University in Hattiesburg is expanding unmanned applications to the healthcare sector.

Dr. Italo Subbarao, an associate dean and associate professor at the William Carey University College of Osteopathic Medicine, and Guy Paul Cooper Jr., a Carey medical student from Wheaton, Ill., developed the first fully equipped medical multirotor drone with telemedicine capability.

Subbarao and Cooper created the Healthcare Integrated Rescue Operations prototype. HiRO is a modified DJI S1000+ drone capable of carrying an advanced, 20-pound telemedical kit and delivering it to someone in need of medical attention in areas where emergency personnel may not be able to reach quickly.

Subbarao notes the drone can be used to reach areas health rescue personnel may not want to enter immediately, such as a suspected Ebola outbreak in a third-world country.

“The purpose of the project is to get timely life-saving medications, vaccines and equipment to victims in a disaster area or in a remote location through the use of GPS,” said Subbarao.

Subbarao hopes to eventually deploy a fleet of the HiRO drones throughout the state and nation and particularly to rural, underserved areas. He added the project could also be used for a number of different purposes, such as military medicine or in the event of a hazardous material situation.

The team is currently conducting demonstrations of the prototype and building additional modular kits. A cardiac kit has already been assembled and is in the testing stages. Subbarao and

Cooper are planning Ebola and trauma kits in the near future.

“Although the project is still in the quality-control testing stages, we believe it can transform health care delivery around the world,” said Subbarao.

While UAS uses can be sector-specific, there also is the broad application of improving general communication. During times when communication lines are strained or completely down, like an overcrowded sporting event or an area struck by disaster, unmanned systems can carry communication devices providing bandwidth to create or enhance signals.

Unmanned systems are literally delivering the future, and Mississippi continues to attract new investment and develop the next generation of minds who will bring this new evolution of technology into the mainstream.

Mississippi’s significant competitive edge has already

attracted more than 100 aerospace companies to the state, including Aurora Flight Sciences, Northrop Grumman and Stark Aerospace. The state’s research and development offerings through Mississippi’s world-class research institutions provide aerospace companies with a direct pipeline to innovation and a highly skilled workforce.

According to the Association for Unmanned Vehicle Systems International, Mississippi’s direct spending on UAS technology will grow from \$14 million in 2015 to \$64 million in 2025. Total economic impact for the state will increase from \$27 million in 2015 to \$120 million in 2025.

By successfully integrating unmanned aircraft systems into our airspace, the state has the opportunity to revolutionize the world’s airspace for the greater good and create a thriving aerospace sector in Mississippi. ■

MSU Vice President for Research and Economic Development David Shaw addresses crowd including Governor Phil Bryant and MDA Executive Director Glenn McCullough, Jr. at a press conference touting the university’s accreditations and accomplishments in UAS/UAV development.



Recapping a Year of Success

While Looking to the Future

On the heels of a successful 2016, Mississippi remains positioned to continue its strong momentum throughout 2017. The Mississippi Development Authority does not operate in a vacuum; generating new careers and investment for the people of Mississippi is very much a team effort with the support of Gov. Phil Bryant, Lt. Gov. Tate Reeves, Speaker Philip Gunn, the Mississippi Legislature and our local and regional economic development partners. Collaboration and teamwork are vital to winning economic development projects for the state of Mississippi. Without our strong partnerships, Continental Tire would not be investing \$1.45 billion and creating 2,500 careers in Hinds County. In 2017, MDA is looking to our state leadership to help us remain competitive on a global scale.

Last year, MDA announced 40 new economic development projects totaling 6,047 new careers for Mississippians and \$1.97 billion in private investment. We set the bar high for 2017, and we know with the support of the Mississippi Legislature, we can continue working aggressively to increase those figures in 2017 and the coming years.

Currently, MDA operates leaner than before and is even more focused on growing the state's economy. We believe what gets measured gets done. MDA measures success through improved internal controls

providing better capabilities, while streamlining processes and eliminating duplication. Our agency has continued to not only meet – but exceed – its goals while maintaining fiscal discipline and operating with a limited headcount.

With 2016 in our rearview mirror, we look toward the road ahead in 2017. In order to continue to achieve economic success, Mississippi will put an emphasis on enhancing the workforce. Mississippi's ultimate goal is not just landing a new business but creating a long-term, mutually beneficial partnership with the company, workforce and state.

Mississippi's workforce is equipped with the advanced-manufacturing techniques used to make high-precision jet aircraft parts, sleek and efficient automobiles, rugged and durable heavy equipment and the world's most sophisticated warships. Whether working with wood pulp and polymers or a multitude of high-performance materials, Mississippians make it – and they make it right.

Our research universities and network of community colleges are team players in creating jobs and sustainable workforce solutions for industries, both now and into the future. Take the time to see all the advantages Mississippi has to offer in this new year.

MDA appreciates your partnership, and we look forward to a successful 2017.



by **Glenn McCullough, Jr.**

MDA Executive
Director



Interview with
Bruce Chinn
Chevron

Q : What is one advantage Chevron has found with its Pascagoula location?

A : The infrastructure is very important for our mission. Navigable waters, ports that are readily available for our raw materials and products to ship in has been a real advantage for us. Certainly, the ability to move trucks in and out of the facility to our marketing terminal to supply to customers is another key element. Locating in Mississippi has been very important for Chevron in locating the premium base-oil facility here. We are logistically positioned to be able to have the same facility as we

have in Richmond, Calif., as we have in South Korea, to be able to supply a base-oil product not only to those parts of the world, but to North and South America and Europe.

Q : How has Mississippi proved itself as a business partner?

A : When I look in Mississippi and in Jackson County, Chevron has found that from the business clerk in the county office issuing a business permit all the way to Gov. Phil Bryant, Mississippians all are about success for the business. Therefore, they know that success for Chevron translates to a success for the state of Mississippi.

Interview

Q&A

Q: What have you discovered about Mississippi's workforce?

A: We have a very specialized business and what we found is that the Mississippi workforce is, number one, highly trainable. From Chevron's perspective, they are second to none.

Their ability to understand how to apply basic STEM skills really makes them wonderful employees with specialized training, whether it be in terms of operating or maintaining our facility. We found Mississippians really know how to work. They want to work. They really have laid a great platform over the last 50 years for Chevron to not only grow, but also improve its operations.

Q: How are you working with your community college partner to build a sustainable workforce?

A: We have had an outstanding partnership with Mississippi Gulf Coast Community College, and we're very proud of the Process Technology Operations Program

that they've established. We've relied on that program since it was established in 2005, and we view it as a pipeline into our business.

Q: What would you tell an industry deciding whether to locate operations in Mississippi?

A: I think Chevron's success in Mississippi goes back to the business advantages the state offers. A trainable workforce, great location on the Gulf Coast, the ability to move products in and out of this facility has been great for Chevron. But most of all, it really is the business-friendly atmosphere that both local community leaders and state officials have provided for Chevron – and I guess one of the key messages that I would give to companies that look to locate here in Mississippi is, first and foremost, don't be afraid to ask for help. I found that the state and local officials are always available and open to businesses. If you have a specific problem, you are able to go to these talented folks on the local and state level to help you solve problems.



MARS VIA MISSISSIPPI

Missions to Mars take flight in Mississippi at NASA's Stennis Space Center. As the world's premier rocket engine testing facility, with companies including SpaceX and Aerojet Rocketdyne, Stennis is the logical starting point for space exploration. Closer to terra firma, we also have the FAA's Unmanned Center of Excellence at Mississippi State University, which is shaping the integration of unmanned flight into U.S. air space. Thanks to our high-quality workmanship, aerospace giants such as GE Aviation, Rolls-Royce, Northrop Grumman, Airbus Helicopters and Raytheon also call Mississippi home.

Learn how Mississippi can take your business to new heights.

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