Gulf Coast | Business Council
LEADERSHIP FOR REGIONAL SOLUTIONS.

Masters program

2013 WHITE PAPER

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Leveraging the Scientific and Military Assets of the Gulf Coast

Putting Together the Pieces to
Foster Innovation & Accelerate Economic Development
In South Mississippi

Background

Our leadership class of 20 individuals from diverse professional backgrounds accepted the challenge of making recommendations that would leverage our enviable list of significant scientific and military assets in South Mississippi into possible initiatives that the Gulf Coast Business Council membership could champion to help accelerate our regional economic development efforts – especially in the area of fostering innovation and growing our own class of new, small, high tech businesses.

As a basis for our mission, we looked to the past efforts of previous Masters Class graduates and found that their recommendations were natural stepping stones to help complete the puzzle of ideal pieces needed to effectively address this topic. Their recommendations included:

- ✓ Education reform – early childhood education and the need for a 4-year residential university.
- ✓ Regionalism – though certain efforts are already being made, there is a greater need to speak with one voice, especially in the area of economic development, legislative issues, and the need for certain consolidated services.
- ✓ Improving the quality of life assets and amenities to attract the "creative class" and keep more of our young people at home.
- ✓ Emphasize the importance of existing technology and needed upgrades in the world of fiber and other high speed technology through initiatives of the recommended Technology Task Force.
- ✓ Building smarter and in a more sustainable way through smart growth practices across all sectors from housing to commercial development to transportation.

Our class started by learning about the military and scientific assets in our "back yard," becoming reacquainted with the missions we had heard talked about over the years, and learning about new missions and the current and future impact they play in our community and on a national and global scale. We then heard from entrepreneurs and economic development officials who highlighted how

technology is being transferred into commercial applications (spin-out) and how inventions can apply to government or military missions (spin-in). We learned of some of the impediments to further innovation. We heard about challenges of regionalism and a unified economic development agenda from a panel of seasoned elected officials and lobbyists. We also had the opportunity to travel to a model city that has successfully found a way to attract, leverage, and retain these important scientific and military assets and grow their economy by adopting a series of common goals and staying committed to this vision.

STEP ONE: Identifying Our Scientific and Military Assets

Many of us were surprised to learn that the Mississippi Gulf Coast already has in impressive and economically significant mix of military and aerospace installations, and related technology-based enterprises employing high-skilled, high-wage professionals.

Hancock County is home to the John C. Stennis Space Center, the primary propulsion-testing center for the National Aeronautic and Space Administration (NASA), the Department of Defense (DOD), Department of Commerce, and several major commercial aerospace operations. This federal city hosts more than 30 federal, state, educational, and private organizations, as well as many small technology companies and specialized contractors. The Infinity Science Center, located just south of Stennis, is the Center's official visitor's center and showcases the missions inside the gates. The NASA test site is unique because it has a 125,000-acre acoustical buffer zone and a 7.5 mile canal waterway system for delivering propulsion systems, equipment, and fuel via barge directly to the test stands. More than 5,400 employees work at Stennis, including federal civil servants, civilians, and contractors. This is a highly educated workforce, many having Bachelors, Masters or Doctorate degrees. Stennis is home to the largest concentration of oceanographers in the world! Last year, economic impact of the Center totaled more than $1 billion within a 50-mile radius.

Keesler Air Force Base is one of several military installations in Harrison County. Located in Biloxi, Keesler is one of the U.S. Air Force's four primary training bases. The 81st Training Wing, the 81st Medical Group, the 81st Support Group, and the 403rd "Hurricane Hunters" Wing are all based here. This is where all cyber training for the Air Force begins. With more than 12,000 active duty and civilian workers, Keesler is one of the largest employers in south Mississippi. It has a payroll of more than $358 million per year and its annual economic impact exceeds $1 billion. In the course of our visits, we also learned about lesser-known missions such as the genetics lab and other important work at the Keesler Medical Center, the second largest hospital in the U.S. Air Force and a resource for all branches of the military.

The mission for the Naval Construction Battalion Center in Gulfport is construction, training, mobilization and training for the Atlantic Fleet Seabees. With approximately 6,000 active duty and civilian employees, and a payroll of $245 million, its annual economic impact is estimated at $850 million.

Other military facilities on the Mississippi Gulf Coast include the Trent Lott Training Complex for the Air Guard and the Army Guard in Gulfport, and the U.S. Coast Guard Stations in Pascagoula and Gulfport, and the US Coast Guard Helicopter Rescue Training at the Trent Lott International Airport in Moss Point, Jackson County.

The Coast also boasts science and research facilities such as the Gulf Coast Research Laboratory (GCRL) in Ocean Springs. This facility is a unit of the University of Southern Mississippi's (USM) College of Science and Technology. It has a workforce of 200 faculty, researchers, graduate students and support staff focused on sustainable coastal and marine resources, development of new marine technologies, and the education of future scientists and citizens. The region also benefits from the presence of other natural science and research facilities such as the Mississippi State University Coastal Research and

Extension Center (CREC), the Northern Gulf Institute (NGI), the Gulf of Mexico Research Initiative (GOMRI), the Grand Bay National Estuarine Research Reserve, the National Oceans and Applications Research Center, USM's Center of Excellence in Gulf Studies, and the Mississippi-Alabama Sea Grant Consortium (MASGC). Together, they support research that contributes to healthy marine resources, resilient coastal communities after disasters, manmade or otherwise, provide educational opportunities for future scientists, and attract graduate students and researchers from across the country.

It is also important to explore the role of private industry that is engaged in technology-intensive manufacturing. The most obvious example is Ingalls Shipbuilding in Pascagoula, a division of Huntington Ingalls Industries. Ingalls is the state's largest private manufacturer with more than 11,000 employees. They design, build and maintain ships for the U.S. Navy and the U.S. Coast Guard. Their annual economic impact to the region is nearly $1 billion.

Similarly, we learned of the important work being done by the Mississippi Enterprise for Technology, Inc. (MSET), a private, non-profit corporation at Stennis Space Center that has served as the state's Mississippi Technology Transfer Office for nearly 20 years. Their mission is to leverage the assets of Stennis, the region, and the state to advance economic development priorities. This work includes facilitating the transfer, commercialization, or utilization of government and military technology developed at Stennis Space Center. MSET's small business incubator program at Stennis works with entrepreneurial ventures and established firms to commercialize this technology into products and services for the broader public market. MSET also supports the attraction, retention, and expansion of large STEM-based industries, primarily along the Coast or at Stennis. We met with companies who were direct beneficiaries of this agency, like NVision Solutions, Inc., an MSET incubator graduate now located in Hancock County, who specialize in geospatial, engineering and software technology and whose success won them the "2009 Mississippi Company to Watch."

GULF COAST COMPANIES WITH SCIENTIFIC AND MILITARY CONNECTIONS

There are a large number of companies located on the Mississippi Gulf Coast that are performing work for various agencies of the US Department of Defense in the fields of manufacturing and assembly, technology development, and scientific research for military applications across all branches of service.

- Huntington-Ingalls Industries (Ingalls Shipbuilding), Pascagoula – largest manufacturer of US Naval Vessels of several classes.
- Northrop Grumman Aerospace Unmanned Systems Center, Moss Point – final assembly of the Firescout (low altitude rotary wing unmanned aircraft system) and manufacture of the fuselage of the Global Hawk family of unmanned aircraft system (high altitude, long endurance, fixed wing aircraft).
- VT Halter Marine, Pascagoula and Moss Point – manufacture of various marine vessels for the US Coast Guard, NOAA and the military, as well as commercial vessels.
- Rolls-Royce Naval Marine Foundry and Propeller Center of Excellence, Pascagoula – manufacture of large propellers for US Naval ships of all classes, as well as, other vessels.
- US Marine, Gulfport – manufacture of various military/special operations marine vessels.
- Selex Galileo (a Finmeccanica Company), Hancock County – Located at the Stennis International Airport, Selex primarily supports defense and special operations by leveraging a distinctive strength in airborne mission-critical systems for situational awareness, self-protection, and surveillance

- TY Offshore, Gulfport – manufacture of aluminum, steel, and composite offshore crew and workboats.
- Optech International, Hancock County – Located at the Stennis International Airport, Optech is an MSET-Stennis incubator graduate that handles coastal mapping sensor development and conducts R&D in airborne bathymetry and in sensor fusion. It is housed in a custom-built facility with lab and office space, including assembly, integration and test facilities.
- Aerojet Rocketdyne, Stennis Space Center -- aerospace and defense leader providing propulsion and energetics to defense, NASA, and commercial customers. At Stennis, the company houses all of the remaining Space Shuttle Main Engines and assembles and tests various systems at NASA's Test Complex.
- Lockheed Martin Space Systems, Stennis Space Center – one of 4 Lockheed units at Stennis, Space Systems assembles satellite propulsion systems for defense, NASA, and international customers.
- SAIC, Long Beach – marine science expertise, devices, and equipment for defense applications.
- QinetiQ North America, Stennis Space Center – provides oceanographic subject matter expertise to support defense missions.
- NVision Solutions, Diamondhead – an MSET-Stennis incubator graduate that provides GIS and other geospatial solutions to commercial and defense customers.
- Radiance Technologies, Stennis Space Center – provides systems engineering, technology and prototype development, integration, and testing; and operational support for the Department of Defense (DoD), armed services, intelligence agencies, and other Government organizations.
- Innovative Imaging & Research, Stennis Space Center – incubator company providing integrated imaging-solid state illumination products and geospatial services for defense customers
- DuPont, DeLisle – manufacture of titanium dioxide and chemical R&D capabilities
- DAK Americas, Hancock County – Pet Plastic Resins
- SNF/Polychemie, Hancock County – Liquid Polymers
- Sabic, Hancock County – Polymers/Plastics
- Calgon Carbon, Hancock County – Carbon-based applications
- Solvay, Hancock County – High Performance Polymers
- MAC, Hancock County – Advanced plastics for Defense Applications

All of these scientific and military facilities, and the people they employ, represent an important economic driver for the Gulf Coast. They have brought tens of thousands of active and retired military and DoD personnel, scientists, and other highly educated workers to our region. These key assets have had a tremendously positive economic impact that can and need to be leveraged to further job growth, innovation, and technology transfer on the Gulf Coast.

Consider the following government investment in our region:

Trent Lott Training Complex	$26,200,000
Stennis / Navy Presence	$222,000,000
Naval Construction Battalion Center -	$365,300,000
Keesler Air Force Base	$621,000,000

This equates to roughly the **equivalent of $3,248.68 annually per person indirectly/directly to economy just from those four bases**. This does not even address the spin off benefits of the companies listed above and their collective investments.

It is easy to see how "Uncle Sam" is the Gulf Coast's biggest investor and we need to protect it whatever way is necessary and possible, including being prepared for the next round of Base Realignment & Closure (BRAC).

STEP TWO: Seeing Military & Scientific Assets Making A Visible Difference

Our class traveled to "the Rocket City" of Huntsville, Alabama. We saw how leaders in that community have taken advantage of NASA's Marshall Space Flight Center and the Redstone Arsenal to create a robust economy that has continued to grow and create jobs, even during the slow recovery of the past few years. We wanted to better understand how they were able to build on their foundation of aerospace and military assets to attract private investment, research, and a culture of innovation and entrepreneurship.

The Huntsville story is very similar to that of the Mississippi Gulf Coast. NASA's Apollo mission and the race to space created both Marshall Space Flight Center and the Stennis Space Center. Both installations brought federal investment, high tech jobs, and a period of prosperity during the 1960's and 1970's. Both areas suffered setbacks when missions were cancelled; both experienced rebirth during the heyday of the Space Shuttle program.

Today the Huntsville area economy is still anchored by large federal employers, but it is also home to major technology and research parks and a diverse mix of more than 300 private companies. They include companies engaged not only in defense and aerospace, but also firms working on cutting edge biotechnology, geospatial and information technology, robotics, satellites, and electronic communications. The Huntsville economy supports one of the healthiest real estate markets in the country.

Through a coordinated public relations and branding campaign, the area receives regular media recognition for their economic development successes. These include:

"Huntsville named one of 10 great places to be inspired by innovation"

USA Today, April 2013

"Huntsville named one of Forbes Top 20 Leading Metros for Business"

Forbes, July 2011

What We Learned from Huntsville, Alabama

Our class recognized five critical ingredients that have contributed to the Huntsville/Madison County area's economic success:

- The importance of multiple branches of higher education, with a focus on offering technical and scientific degrees to feed into their business community.

- Having a unified economic development "voice" with a clearly understood, accepted and tight focus on desired economic targets for retention and expansion of their industry base.
- Implementing a well-planned branding and public relations campaign that emphasizes their strengths as "A Smart Place" to attract and retain a well-educated workforce.
- Developing a culture that fosters innovation & supports entrepreneurs through a system that gives back and reinvests in new ideas and technology to grow future jobs.
- Has a year round commitment to shaping future leaders and including them in important discussions about the region's future by creating programs for students from junior high to retirees and senior citizens.

OUR CHALLENGE: Making the Case: An Opportunity to Foster Further Innovation

The Mississippi Gulf Coast has many of the same raw materials that have led to the prosperity of the Huntsville area. To use a puzzle analogy, we have most of the puzzle pieces, but we haven't figured out how to put them all together in a way that creates the same kind of economic vibrancy that we observed in Huntsville.

If you compare the populations of the Huntsville area versus our tri-county region, you will see that our populations actually are quite closer than one would originally think.

Huntsville Metro Population - 417,593
City of Huntsville Population - 183,739

Gulf Coast Tri-County Area – 379,000
Harrison County - 194,000
Hancock County - 45,000
Jackson County – 140,000

Some might say that we are better positioned than Huntsville to extend success because of our environmental and technical capabilities that span multiple research and development opportunities including air, sea, and space. A continued emphasis on a spirit of cooperation and a capability to share resources across the lower three counties and across technical spaces is something regionally and throughout the U.S., few can compete with.

We believe that a critical first step to taking these assets to the next level is to create or enhance a regional culture that fosters innovation and entrepreneurship and leverages these important assets.

Why is Innovation Important?

Innovation has been widely recognized as a major driver for economic growth and prosperity. Many would say it has been the most important factor in America's economic prosperity, and that of other industrialized nations.

Thomas Friedman, author of the international bestselling book *The World is Flat*, said that it's "our ability to constantly innovate new products, services, and companies that has been the source of American's horn of plenty and steadily widening middle class for the last two centuries."

This phenomenon has been explained in more detail by Nathan Rosenberg, Professor of Economics (Emeritus) at Stanford University. He identified two primary means of achieving economic growth. You

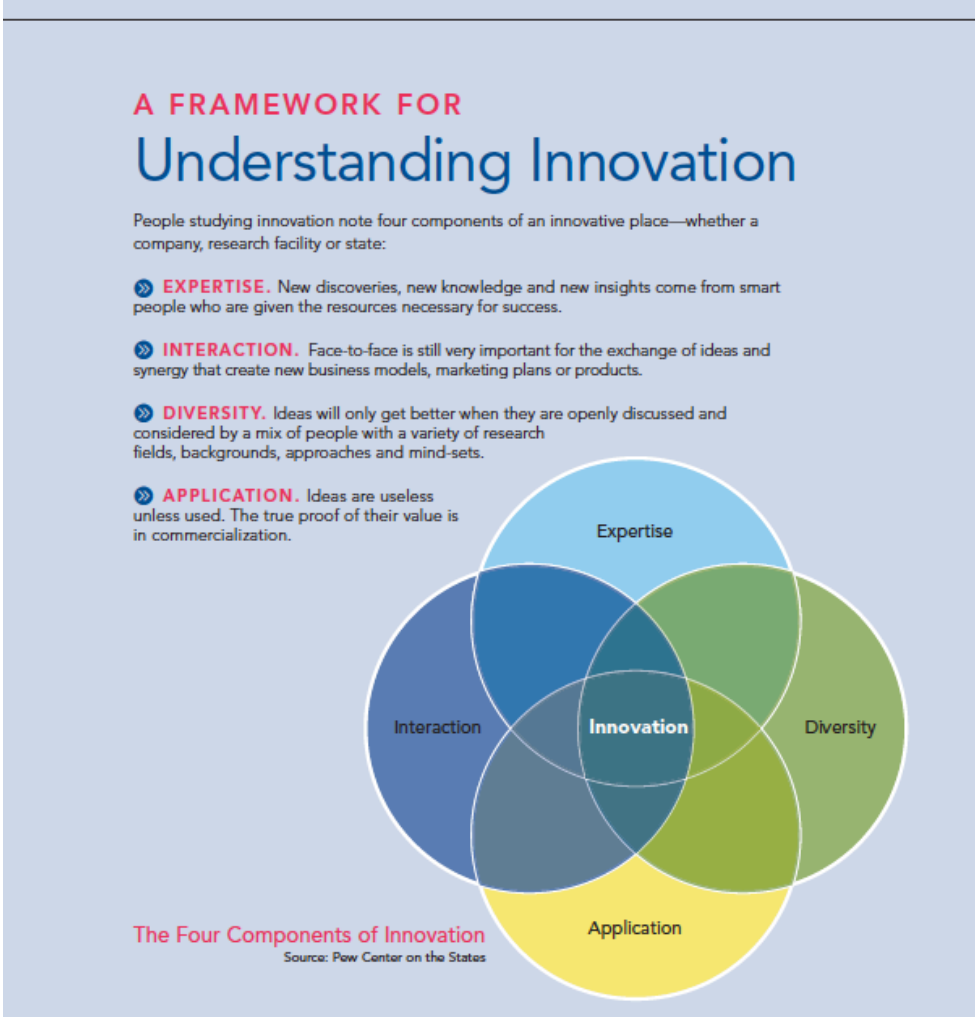
can increase the inputs (capital and labor), or you can devise new ways to get more output from capital and labor. This is what innovation is all about. It is the key to increased productivity and "the single, most important component of long-term economic growth."

Another Stanford economist, Paul Romer, has expanded on this concept with his "new growth theory". His premise is that ideas are the primary catalyst for economic growth. They do so by reorganizing physical goods in more efficient and productive ways. For Romer, the ingredients (natural, human, capital resources) are not as important as the recipes (the ideas about how to put the ingredients together). The recipes are the product of the innovation process.

How Can We Foster Innovation?

The 2007 *Investing in Innovation* report from the Pew Center on the States and the National Governor's Association identified four essential ingredients of innovation:

1. Expertise (smart people),
2. Interaction (networking),
3. Diversity, and
4. Application



STEP THREE: How Do We Get There?

A) Expand on the original recommendation of a Technology Task Force and be the catalyst for bringing together the Gulf Coast's "creative class," military and technology leaders.

With the leadership of this task force and the economic development committee, the Business Council, once core stakeholders and major players have become engaged and have shown buy-in, should take the lead in sponsoring a Technology & Innovation Summit – bringing together entrepreneurs, military and technology employers, expert key note speakers from successful ventures in neighboring states, and testimonials of existing successful companies. This multi-day meeting would provide a networking forum for entrepreneurs and stakeholders to discuss challenges and identify gaps that are slowing productivity and acceleration of development in the technology sector. Representatives of the military should be on hand to highlight their existing and often little known unique missions and technology – such as the ground-breaking work being done at the genetics lab at Keesler Air Force Base. One successful example of such an event is the Pensacola Chamber of Commerce's annual ITEM "Innovation, Technology, and Entrepreneur Network" conference. Another event in which we can borrow best practices is Innovate Mississippi's Conference on Technology Innovation, which was held for the 14th time in Jackson this past November.

From this summit, the Business Council should work with local partners such as the Mississippi Enterprise for Technology to host/sponsor quarterly meetings to continue this dialogue. An advisory committee should be formed to work with the existing economic development committee and identify solutions to remedy gaps in service, incentives needed, and other tools needed to support entrepreneurism and innovation and support the Coast fully leveraging its scientific and military assets. With this information, the Business Council can develop a legislative agenda and lobby in support of developing the appropriate resources for growing these businesses.

B) Enhance local awareness about the importance of existing military and scientific assets through a public relations/branding campaign.

Additional awareness is needed to "lift the veil" on the Mississippi Gulf Coast's impressive list of scientific and military assets and the good work being done in the region. While various reports from area Chambers and local economic development groups routinely tout the monetary impact of these facilities, the information that translates how the research and technology is being used in real practice in the commercial sector is missing. Furthermore, many entrepreneurs and others in the business community presume these assets are untouchable and don't know how to leverage them.

A first suggested step is to outline all of our regional assets and cite business corollaries in easy to understand terms, identifying what the assets mean to the public in terms of impact and opportunities. This information could then be published online on the Business Council website, along with various other business, government, technology transfer, and economic development online sites. It could then be adapted into collateral, videos and other public relations "pitch" materials. In addition to military-related technology achievements, these pieces should also make connections to important research being done about our natural assets and how work at facilities like the USM Gulf Coast Research Lab, MSU Coastal Research and Extension Center, and the Gulf of Mexico Research Initiative are making differences nationally and internationally.

Finally, building on the recommendations of the 2012 "Design Matters" class, this branding campaign should also marry our quality of life assets – our beaches, climate, abundant outdoor recreation activities, cuisine, local culture, diversity and "laid back" way of life - with our military and scientific assets to attract entrepreneurs and business owners, who essentially can work from anywhere, but choose the Mississippi Gulf Coast for this dynamic "one-two punch."

C) Foster local businesses and support entrepreneurs by enhancing the effectiveness of existing area incubators, employing tactics used in Huntsville "accelerators," and improving access to funding.

Drawing from the participants of the Business Council-sponsored Technology Summit, a mentor program should be explored to connect business owners with needed resources and experts who will work regularly with these companies to track their growth progress, provide guidance, and ensure awareness of business opportunities. This effort can build upon the new mentor program recently launched by the Mississippi Enterprise for Technology at Stennis and should also leverage the professional network supporting The Innovation Center in Biloxi.

To help foster a climate that encourages locals, especially students, to stay in the area and grow their talents and ideas here, the Business Council should sponsor an annual technology & innovation contest at area high schools, community colleges, and universities on the Gulf Coast. The contest would culminate in an annual technology and innovation awards program, which could provide winners with seed funds to jumpstart entrepreneurial or commercialization concepts.

Finally, building on the past successful work of the Business Council's economic development committee, we recommend expanding the Innovate Mississippi private investment model or perhaps the "Shark Tank-style" funding of entrepreneurs' ideas and promotion of the winning submissions. Similarly, the Business Council should further support Mississippi Coast based private investment groups, namely the Gulf Coast Angel Network and the Gulf Area Investment Network, and take a major role in connecting both accredited investors, other Gulf South investment networks, and private foundations to these groups and the entrepreneurs they engage. Additionally, the Business Council could investigate developing a fund specifically to infuse capital into local technology transfer and commercialization centered entrepreneurial ventures.

D) Learn from best practices of New Orleans' Idea Village and strive to create a Mississippi Gulf Coast version of this innovative think tank.

Vantage Point

Tim Williamson *(tim@ideavillage.org)* is the co-founder and CEO of The Idea Village, an independent nonprofit organization in New Orleans.

Sparking Ideas and Startups

Five steps for building an entrepreneurial movement in your community

Late one evening in 1999, at a bar in downtown New Orleans, a movement was ignited. Five local entrepreneurs were having a conversation about how to reverse the last 40 years of fundamental economic and social decline in our city. New Orleans was in a downward spiral, failing in all relevant areas of community vitality: education, jobs, health and crime.

retain entrepreneurial talent in New Orleans. Over the past decade, The Idea Village has solidified its position as a leading driver of entrepreneurship by providing direct support to more than 1,654 New Orleans entrepreneurs by engaging 2,122 professionals and allocating more than 56,119 free consulting hours and $3.1 million in capital. Collectively, this portfolio generates over $82 million in annual revenue and has created more than 1,000 jobs.

about creating community change and be open to diversity in the form of people and ideas.

A successful leader will build trust among the diverse network and be the honest broker by hearing new ideas and approaches—even if he or she competes with the existing vision. The leader should also be able to help identify key community influencers in business, government and university sectors who have wide appeal and can be trusted

After laying the foundation of increased awareness and appreciation for our military and scientific assets and the seeds of a culture of innovation, the Business Council should play a central role in taking this "idea ecosystem" to the next level by creating a think tank and programming similar to those successfully practiced in New Orleans' Idea Village.

We recommend that the Business Council invite their Executive Director to speak at an upcoming meeting of the Executive Board or the economic development committee to tell their story, lessons learned, and tangible things that can be done here to strengthen innovative thinking and entrepreneurship.

Next, a subcommittee of members, the Business Council staff, the recommended Advisory Council, and tech/military small business innovators should visit their facility for a first hand view of innovation in action and develop a multi-phased action plan to make our own version a reality on the Gulf Coast.

E) Protect our scientific and military assets by going on the "offense" and preparing for the next round of Base Realignment & Closure (BRAC).

The Gulf Coast Business Council, through its members and subcommittees, should proactively work closely with groups committed to the preservation of our military assets and our state and federal delegation to insure the least impact on the Mississippi Gulf Coast. The Business Council members can advocate as private sector catalysts about the importance of these facilities and the overwhelmingly positive return on investment (ROI) that the government and the taxpayers are getting in South Mississippi.

IN CONCLUSION

The Mississippi Gulf Coast has a critical mass of expertise and enviable military and scientific assets that have attracted thousands of well-educated experts on a variety of subjects. We need additional opportunities for these people to network and share ideas. This interaction is critical to innovation. It creates an intellectual synergy that leads to new ideas for products and services, and the business plans required to bring them to market.

Our vision for the Gulf Coast is a region that leverages the intellectual and economic capital of our military and scientific foundation in a way that fosters a culture of innovation, creativity, and entrepreneurship. We already have the ingredients – the puzzle pieces - necessary for success in an increasingly global economy. What we need now is the right recipe, and broad support that results in funding, to put these ingredients together in a way that generates ideas, goods and services that will sell in the world market.

To view this white paper and our class presentation, please visit: http://gcbc.agjsystems.com/.

APPENDIX

ONLINE RESOURCES

The following are links to additional information on the people and places we visited during our Masters Class experience and area economic development agencies:

- Huntsville and Madison County Chamber of Commerce - www.huntsvillealabamausa.com/
- Pensacola's ITEN network: http://www.itenwired.com/
- MSET: http://www.mset.org/
- Innovate Mississippi: http://www.innovate.ms/index.php
- Idea Village: http://ideavillage.org/
- Keesler Air Force Base: www.keesler.af.mil
- Naval Construction Battalion Center: www.cnic.navy.mil
- NASA Stennis Space Center: www.**nasa**.gov/centers/**stennis**/home
- Infinity Space Center: www.visitinfinity.com
- Jackson County Economic Development Foundation (JCEDF): www.jcedf.org
- Harrison County Development Commission (HCDC): www.mscoast.org
- Hancock County Port and Harbor Commission (HCPHC): www.hcphc.ms
- Mississippi Gulf Coast Alliance for Economic Development: www.mscoastalliance.com