

## **Institutional Information Request Form**

### **Southern Region: Value of Extension Services and Experiment Stations**

The Battelle Memorial Institute is working with the leadership of the *Association of Southern Region Extension Directors* and the *Southern Association of Agricultural Experiment Station Directors* in producing analysis and a high-profile report on the special value of extension and experiment stations in the development of the 21<sup>st</sup> Century agbioscience economy. Each of the land grant universities in the 13 state and 2 U.S. territory southern region is collaborating in performance of this important project.

For each of the land-grant institutions participating in this project, Battelle is requesting information, data, project examples, etc. that will help illustrate the value of experiment stations and extension services. Completion of this information request is an important step in the information gathering required for this project. We are requesting that at each institution, the Experiment Station Director and the Extension Director jointly complete each section to the best of your collective ability. Also, if you have additional supporting documents, reports, statistical summaries, etc. that you believe would be helpful to this project please forward them to the consulting team at Battelle together with your completed form. The form is set-up using MS-Word tables so you can type directly into the table boxes.

Please return the completed form to Simon Tripp at Battelle via email to [triggs@battelle.org](mailto:triggs@battelle.org) If you have questions please direct them to Simon at:

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## Section 1: Institutional Profile

<i>University Name</i>	<b>Louisiana State University Agricultural Center</b>
<i>Extension Service Director (name, phone, email)</i>	<b>Dr. Paul Coreil, 225-578-6083, PCoreil@agcenter.lsu.edu</b>
<i>Experiment Station Director (name, phone, email)</i>	<b>Dr. John Russin, 225-578-4181, JRussin@agcenter.lsu.edu</b>

### Personnel

<i>Number of Personnel in Extension (FTE)</i>	<i>623.0</i>
<i>Number of Personnel in Experiment Stations (FTE)</i>	<i>875.3</i>

### Budget

<i>Annual Extension Budget</i>	<b>\$ 56,926,317</b>
<i>Annual Experiment Station Budget</i>	<b>\$ 83,605,304</b>
<i>Annual College of Agriculture Budget</i>	<b>\$ 8,613,053</b>

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## Section 2: Income/Revenue Sources

Income Source	2011 \$ Income Received by Extension	Funding Trend for Past 3 Years	2011 \$ Income Received by Experiment Stations	Funding Trend for Past 3 Years
<i>Federal Formula Funds</i>	\$ 7,693,814	__ Increasing __ Stable X Decreasing	\$ 3,883,443	__ Increasing __ Stable X Decreasing
<i>Federal Grants and Contracts</i>	\$ 2,836,334	__ Increasing X Stable __ Decreasing	\$ 5,920,202	__ Increasing X Stable __ Decreasing
<i>State Funding</i>	\$ 43,136,644	__ Increasing __ Stable X Decreasing	\$ 57,634,391	__ Increasing __ Stable X Decreasing
<i>Local Funding (Counties, etc.)</i>	\$ 3,265,563	X Increasing __ Stable __ Decreasing	0	__ Increasing __ Stable __ Decreasing
<i>Other Grants and Contracts (e.g. sponsored research from industry, foundations, commodity groups)</i>	\$ 1,499,386	__ Increasing X Stable __ Decreasing	\$ 4,831,771	__ Increasing X Stable __ Decreasing
<i>Sales of Products and Services</i>	\$ 1,456,840	__ Increasing X Stable __ Decreasing	\$ 5,004,023	__ Increasing X Stable __ Decreasing
<i>Intellectual Property Revenues</i>	\$ 54,897	__ Increasing X Stable __ Decreasing	\$ 4,257,179	__ Increasing X Stable __ Decreasing
<i>Gifts</i>	\$ 378,885	__ Increasing X Stable __ Decreasing	\$ 2,450,717	__ Increasing X Stable __ Decreasing
<i>Other</i>	\$ 583,465	__ Increasing X Stable __ Decreasing	\$ 1,569,041	__ Increasing X Stable __ Decreasing
<b>TOTAL</b>	\$ <b>60,905,826</b>	__ <b>Increasing</b> __ <b>Stable</b> X <b>Decreasing</b>	\$ <b>85,550,766</b>	__ <b>Increasing</b> __ <b>Stable</b> X <b>Decreasing</b>

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## **Income Trends:**

During the past five years, what trends have been observed in the funding for extension and experiment station activities? What are key funding challenges? Where have the most notable funding declines or increases occurred?

*Trends in funding show a sharp decline in state appropriations while local funds have increased and federal funds have remained relatively flat overall, but with a decline in SPGR. State appropriations decreased by over 30% in four years and local funding for salary support of extension educators in the field has increased in the last eight years from \$1.5 M to \$2.6 M.*

*Among the key funding challenges are the continuing recession, decreased tax base and more conservative elected officials and electorate. This leads to the challenge of right-sizing LSU AgCenter programs to match stakeholder needs and priorities with available funds.*

## Section 3: Research and Extension Activities

### Key Initiatives, Institutes and Programs:

Please provide a description of FIVE key centers, institutes, programs or research initiatives that are true signatures of experiment station and extension work at your institution. Here we are looking for descriptions of initiatives, centers, programs, etc. for which your university is internationally or nationally well-recognized as a leader.

1. **Sustaining and growing agricultural resources**--Louisiana agricultural products contributed \$10.7 billion to the state's economy in 2011. Major commodities include forestry, poultry, sugarcane, feed grains, soybeans, corn, cotton, rice, grain sorghum, and wheat. LSU AgCenter programs which focus on variety development, plant nutrition, pest management, cultural practices, and farm management are conducted to sustain crop production as a viable economic industry. Programs address yield, cultural practices, and pest management through plant resistance and optimal pesticide use focusing on maximizing net economic return per acre. Plant breeding efforts focused on rice, sugarcane, wheat and sweet potato. Producer meetings, field days, demonstrations and on-farm verification and educational publications using Web-based information and social media technologies were used to promote adoption. Programs also include medicinal, biopharmaceutical, and food product programs. Cropping systems pose agronomic, economic, and environmental challenges. Variable soils, climatic conditions, and pest pressures affect crop yield and input costs, and commodity price instability is a concern.
2. **Conserving and protecting the environment**--Over 70 percent of LA's waterways are listed on EPA's 303d list as impaired and not suitable for fishing or swimming. Many of these impairments are thought to result from non-point pollution emanating from watershed land use practices such as agriculture, forestry, individual sewage treatment, home landscape, construction practices and other urban and suburban conditions. More than 280,000 tons of animal and poultry waste are produced in Louisiana each year. Producers must handle this waste in an environmentally-friendly manner to minimize the potential negative effects waste can have on waterways. Animal waste improperly applied to or stored on land can result in runoff that can reduce surface and groundwater quality by introducing excessive levels of nutrients such as nitrogen and phosphorus, organic matter and pathogens into the environment. The following programs are among those addressing this issue in the state.
  - **Biofuels Institute**--The federally mandated pursuit of energy independence calls for sustainable biomass feedstock systems. Louisiana's environment is ideally suited for the production of a diverse range of biomass feedstocks. Emphasis is being directed toward energy cane, sweet sorghum, woody biomass, switchgrass and algae as possible sources. A competitive advantage for Louisiana is that infrastructures for woody and crop feedstock industries currently exist. Results of a recent survey indicated state-wide interest in using biomass as an energy source that could have significant economic impact. Biomass research addresses feedstock identification, sustainable production practices, geographic adaptation, integrated pest management and potential biofuel yield. Partnerships between LSU AgCenter researchers and industries for biofuel development have been strengthened. The procurement of the AFRI-CAP funding for "A Regional Program for Production of Multiple Agricultural Feedstocks and Processing to Biofuels and Bio-based Chemicals" has positioned Louisiana as a leader in the development of sustainable feedstock systems for biofuel production.

- **Louisiana Master Farmer and Master Beef Cattle Producer Certifications**--The LSU AgCenter's Master Farmer and Master Beef Cattle Programs educate landowners and encourage adoption of BMPs to mitigate runoff from various land use. Currently over 3,000 farmers are enrolled in the Master Farmer Program. Other water quality efforts included programs to educate and encourage dairymen to empty lagoons on a 3-5 year rotation; research and extension outreach on lagoon design systems; and education of homeowners and municipalities about runoff control. Research is conducted on a variety of new BMPs that reduce impact of added agricultural chemicals on water quality.
- **The Louisiana House (LaHouse) Home and Landscape Resource Center** demonstrates high performance, sustainable housing that addresses national, state and household needs for energy efficiency to reduce dependence on non-renewable resources; environmental protection; disaster mitigation; human health and safety; and, economic recovery. Exhibits showcase sustainable housing construction strategies that maximize energy efficiency, water conservation and safety while effectively warding off termites and mold. The LaHouse also demonstrates hurricane-resistance techniques to withstand high winds and rising water. Landscaping appropriate for Louisiana growing conditions is featured on the grounds.

### 3. **Enhancing and developing agricultural and value-added enterprises**

- **Forest-based industrial products**-- Tiger Bullets are a new type of plastic-and-wood composite that prevents lost circulation in oil drilling wells. The technology was licensed from the LSU AgCenter by the Louisiana startup company Hole Pluggers.
- **MarketMaker** is an internet based program that provides sellers of food products (principally small and medium sized operations) an efficient means of communicating product availability to potential buyers. It offers buyers a convenient internet search tool to locate products they want, either directly from producers or through some other channel. It is currently being used successfully in 15 states, including Mississippi and Arkansas. MarketMaker is free to buyers and sellers. Users connect through MarketMaker, but buying/selling activities are separate.
- **Agritourism**-- The LSU AgCenter partners with the Louisiana Department of Agriculture and Forestry in a Louisiana agritourism initiative to provide economic development and cultural opportunities for our farms, ranches, forests and working lands.
- Agricultural awareness programs such as **AgMagic** create an awareness of the importance of agriculture to the state.
- The **Louisiana Super Plant program** is an educational and marketing campaign that highlights tough and beautiful plants that perform well in Louisiana landscapes. Louisiana Super Plants have a proven track record having gone through several years of university evaluations and observations. Louisiana Super Plants are "university tested and industry approved".

### 4. **Building human capital in youth and adults**

- **SET (Science, Engineering and Technology)**--America faces a crisis in its ability to keep up with the increasing demand for professionals in science, engineering and technology (SET). However, youth in Louisiana are unprepared to enter careers in SET. Louisiana 4-H is addressing this issue in the following programs:
  - The Louisiana 4-H Seeds of Service School Garden Project (SOSGP) engaged 1400 students in hands-on programs linking classroom lessons to real-world science and math.
  - Summer Camp (N=4000) and Youth Wetlands Week (YWW) (N=80,000) reached youth with environmental programs.

<ul style="list-style-type: none"><li>○ 4-H University (N=800)</li><li>○ Louisiana Outdoor Science &amp; Technology (LOST) Camp (N=180) reached youth with science programs.</li><li>○ Over 680 teachers attended Youth Energy Program (YEP) trainings and plan to reach 47,028 youth.</li><li>● <b>Citizenship</b>--Over 112,000 youth and adults address community needs through service projects and character programs in the 4-H Youth Development program. Service projects helped 95,141 individuals. Youth served 12,620 hours for a value of \$269,563.</li><li>● <b>Leadership</b> skills are in high demand in the 21st century workplace. In a youth leadership program, the focus is on acquiring and practicing skills today for leading community change efforts later, or just leading one's own family. Louisiana 4-H uses leadership development programming that is intentional and youth-centered. Youth get opportunities to set goals, solve problems, communicate, make decisions, plan and organize programs, develop skill in leading others, and have a voice in their group and community. Youth serve in leadership roles such as camp counselor, project leader, advisory member, and club officer.</li><li>● <b>Master volunteer development programs, such as</b> Louisiana Master Gardener™; Louisiana Master Horseman; and Master Nutrition Volunteer are providing human resources to supplement LSU AgCenter faculty effort. Reduced personnel resources coupled with increased interest in topics such as consumer horticulture, home gardening and home grounds has exacerbated the need for highly-trained volunteers to assist in the delivery of quality educational horticulture programs. The Louisiana Master Gardener (LMG) program meets this increased demand. In FY2011, 1728 active Louisiana master gardeners donated a total of 57,665 hours to extension educational projects and made over 1.6 million contacts. This effort reflects the equivalent of 28 FTEs and resulted in increased human capacity of 16.2% in this program area. The economic value of this service to the state is over \$1.4M.</li></ul>
<p>5. <b>Promoting healthy and productive individuals, youth, families and communities</b> is a critical initiative of the LSU AgCenter. In Louisiana 35.6% of children ages 10-17 are considered overweight or obese according to BMI standards. The state ranks 46th out of 50 for overall prevalence of obesity. Increased obesity leads to increased rates of other chronic diseases such as diabetes, heart disease, and respiratory diseases, thus, increased future health costs. Louisiana also has one of the highest poverty rates with 26% of children and 25% of adults living in poverty. Opportunities to improve the overall health of Louisiana residents are plentiful. Programs such as "Smart Bodies", tools such as "Body Walk" along with EFNEP and SNAP-Ed are addressing both youth- and adult-healthy living needs. There remains much work to do to improve the health of Louisiana residents.</p>

## Special Research and Extension Infrastructure

Please provide a description of FIVE special assets or infrastructure investments that support agbioscience development at your institution. Examples might include pilot plant facilities, unique scientific research infrastructure, biosecurity facilities, etc.

<p>1. <b>Biofuels and Specialty Chemicals Pilot Plant</b> for research in biomass preparation and biomass pretreatment, hydrolysis and fermentation</p>
<p>2. The <b>LSU AgCenter Biotechnology Laboratory (ABL)</b> is a core facility that provides basic and applied research expertise to support researchers in the LSU system as well as those in other academic institutions and industry. The ABL was formed in 1998 to provide support to faculty in performing</p>

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biomolecular research. In 2010, the ABL was merged with the Protein Facility in LSU's College of Basic Sciences. Today, the ABL consists of three units: the Protein Facility, the Plant Transformation Facility and the Animal Cell Culture Facility. The ABL can provide a wide range of services to investigators, often at a fraction of the price of commercial companies.

3. **The W.A. Callegari Environmental Center** is the LSU AgCenter's research and training facility for composting organic waste and for water and air quality.

4. **The LSU AgCenter Containment Facility** has 15 enclosed individual animal rooms suitable for infectious disease studies. Each animal room has its own system for controlling temperature, humidity, and negative air pressure. Also included are a laboratory suite; and onsite necropsy and incineration facilities.

5. **4-H Camp Grant Walker**, located in the center of the state, is home to thousands of youth each year. The facilities are used throughout the year to help you develop a variety of life skills related to Head, Heart, Hands and Health. Environmental science and nutrition have been emphases in recent years

6. **LaHouse Home and Landscape Resource Center** is a research-based SHOWCASE OF SOLUTIONS and educational outreach program to help consumers and building professionals shape the future with homes that offer: MORE comfort, durability, value, convenience, environmental quality, safety and better health with LESS energy, water, pollution, waste, damage and loss.

## Most Notable Assets, Centers, Programs or Initiatives by Category

For each of the areas of focus listed below, please provide what you consider to be the top TWO most notable strengths (programs, assets and infrastructure, centers, etc.) of your institution:

### **Plant Sciences, Crop Science, Plant Transformation and Agronomy**

1. Crop variety development

2. Economic sustainability of agronomic resources

### **Animal Sciences, Animal Health, Livestock**

1. Vaccine developed which prevents anaplasmosis, a disease that costs U.S. cattle and dairy producers an estimated \$300 million per year

2. Livestock Quality Assurance and Ethics Certification program for 4-H and FFA exhibitors

### **Food Science, Food Product Development, Advanced Nutrition and Health Products**

1. Food Product Development (ex. resistant starch, fenugreek-enriched bread, reduced sodium salt substitute products, purified fish oils enriched with healthy fatty acids)

2. Biopharmaceuticals (production of growth factor proteins intended for use in new human biopharmaceuticals which have been demonstrated to be effective in wound healing, the development of new blood vessels and the regrowth of nerve tissue)

### **Food Safety and Biosecurity**

1. Seafood safety training/workshops

2. AgCenter Containment Facility (formerly Infectious Disease Isolation Facility)



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## **Industrial Bioeconomy, Biofuels, Biobased Chemicals, Biobased Materials and Fibers**

1. Forest based industrial products
2. Biofuels institute

## **Environmental Sciences, Water, Sustainability**

1. Master Farmer Certification series
2. Youth Wetlands Education Initiative
3. Louisiana House Home and Landscape Resource Center
4. Calllegari Environmental Center

## **Agritourism and Recreational Hunting and Fishing**

1. Agritourism (legislation in partnership with LDAF)
2.

## **Family and Youth Development**

1. Nutrition-based programming focus, primarily on childhood obesity
2. SET-based programming focus (career orientation of 4-H youth into the sciences)

## **Community and Economic Development**

1. Connect my Louisiana broadband connectivity project
2. MarketMaker

## **Other:**

1. AgCenter Biotechnology Lab
2.

## **Intellectual Property**

	2009	2010	2011
<i>Invention Disclosures</i>	33	33	25
<i>Patents Applied For</i>	20	14	29
<i>Patents Awarded</i>	6	4	5
<i>Licenses Executed</i>	7	15	17
<i>Business Start-Ups</i>	1	0	1
<i>Income from Intellectual Property</i>	5,969,066	9,068,980	10,680,790

## **Company Spin-Offs and Commercialization**

Please provide examples of any start-up companies located in your state or the southern region that resulted from research discoveries, innovations or technologies developed at your institution in the past 10 years:

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## **Esperance**

*Esperance Pharmaceuticals Inc. is a Baton Rouge (Louisiana) based biopharmaceutical company that develops novel targeted anticancer agents based on patented technologies from the LSU AgCenter, Pennington Biomedical Research Center, and Louisiana State University A&M campuses.*

## **Hole Pluggers/Tiger Bullets**

*Tiger Bullets are a new type of plastic-and-wood composite that prevents lost circulation in oil drilling wells. The technology was licensed from the LSU AgCenter by the Louisiana startup company Hole Pluggers.*

## **Delta Land Services**

*Delta Land Services is a varied company that has partnered with the LSU AgCenter to develop a marsh remediation and coastal restoration technology. Delta is a local Louisiana company commercializing the LSU AgCenter technology under the tradename Shore Links to deliver a low-cost solution for coastal wetland protection and restoration.*

## **TGRx**

*TransGenRx, a biopharmaceutical manufacturing company, has developed technology that significantly reduces the cost of producing protein-based drugs by using a high-expressing avian cell line combined with their patented vector system.*

## **University Products**

*University Products, LLC produces a vaccine for anaplasmosis, a disease that causes anemia, weight loss and death in livestock. This Louisiana start-up company, founded by LSU AgCenter professor Dr. Gene Luther, is filling a need for livestock producers in Louisiana and throughout the United States.*

## **H&B Beverages**

*H&B Beverages, LLC is a sports drink company focusing on low-sugar, low-calorie products high in electrolytes and other valuable nutrients. Their drink line, EX5, uses technology developed by John Finley, Joan King, Darryl Holliday, Adriana Soto and Alfredo Prudente at the LSU AgCenter Department of Food Science to achieve this unique set of benefits with a great taste. EX5 is best known for having nearly four times as many electrolytes as leading competing products, such as Gatorade and Powerade. The company was established in Covington, Louisiana, in 2011 by local entrepreneurs Brian Brothers and Craig P. Hart, and is currently working on the initial production and distribution of its product.*

## **TermiTech**

*TermiTech, LLC is led by LSU Urban Entomologist Dr. Gregg Henderson and Allen Fugler, a longtime pest management professional who has headed both the Louisiana and Florida trade associations. Their collaboration has brought termite-related university patents to market, most notably the "pop up" device used by Orkin in thousands of households to alert customers of nearby termite activity. The team is continues to work with the LSU AgCenter Office of Intellectual Properties on transforming patents into innovative products that benefit pest management companies and the consumers they serve.*

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## High Impact Research and Technology Development

Please provide FIVE examples of research innovations or technology developments that have had a substantial impact on the field of agbioscience and/or associated agbio industries. Examples might include crop varieties with enhanced yield characteristics, new processes or technologies introduced that significantly enhance productivity in industry, etc.

1. <i>New crop varieties including herbicide resistant rice, aromatic rice, sweet potatoes and sugarcane</i>
2. <i>Forest based industrial products --Tiger Bullets are a new type of plastic-and-wood composite that prevents lost circulation in oil drilling wells. The technology was licensed from the LSU AgCenter by the Louisiana startup company Hole Pluggers.</i>
3. <i>TransGenRx, a Baton Rouge biopharmaceutical manufacturing company started through licensing agreements with the LSU AgCenter, entered into an agreement with Novocyt, LLC to produce several members of a family of growth factor proteins intended for use in new human biopharmaceuticals.</i>
4. <i>Vaccine developed which prevents anaplasmosis, a disease that costs U.S. cattle and dairy producers an estimated \$300 million per year.</i>
5. <i>Food product technologies such as resistant starch, fenugreek-enriched bread, reduced sodium salt substitute products, purified fish oils enriched with healthy fatty acids</i>

Additional comments or items of note regarding experiment station and extension research impacts:

*The following are testimonials from two farmers about the impact of LSU AgCenter programs on their lives:*

*John Gay, sugarcane farmer*

*"The LSU AgCenter is vital to the agricultural industry as a whole. If it were not here, we would not be here. In the case of Louisiana sugarcane, the AgCenter has played a huge, paramount role in providing new techniques, new varieties and new methods of disease control to keep us profitable, to keep the Louisiana farmer in business."*

*Fred Zaunbrecher, rice farmer*

*"The LSU AgCenter is invaluable to us as a farming operation and to all of Louisiana, both south and north. It's been the foundation of everything that we do. It's where our extension agents and researchers get together to provide for us the cutting edge of technology, cultural practices, management practices, how to grow a crop, how to harvest a crop, even how to produce crawfish. It's just phenomenal the work they've done, and it's something that needs to be kept around."*

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## Section 4: Extension Service Programs

**Statistics:** please provide basic metrics and statistical information for extension:

Metric	Number
<i>Number of county/parish offices</i>	64
<i>Number of multi-county/multi-parish regional offices</i>	5
<i>Number of 4H facilities, including a measurement of capacity</i>	1
<i>Number of 4H participants</i>	245,297
<i>Number of interactions with clients recorded by extension for the most recently completed year</i>	Professional contacts 3,978,769 Volunteer contacts 1,649,687
<i>Number of volunteers for the most recently completed year and number of hours volunteered</i>	Volunteers 11,279 (4-H & LMG) Volunteer hours 228,971

Please provide selected examples of notable/high impact projects or programs of extension that you would like considered for inclusion within the Battelle report. Please give consideration to including both rural and urban programs.

### Business Development Programs/ Impacts

*Connect My LA Broadband Connectivity Initiative—demonstrates the benefits of adopting broadband technology in business, education, health care and other aspects of economic activity in Louisiana.*

### Community Development Programs/ Impacts

*Connect My LA Broadband Connectivity Initiative—demonstrates the benefits of adopting broadband technology in business, education, health care and other aspects of economic activity in Louisiana.*

### Family and Consumer Science Programs/ Impacts

*Master Nutrition Volunteer Program & Smart Bodies/Body Walk*

### 4-H and Other Youth Development Programs/ Impacts

*Youth Wetland Week / School Gardening Education Program/AgMagic (Ag Awareness Initiatives)*

### Other high impact/notable Extension programs

*Louisiana Master Gardener plus other "Master" and volunteer based programs.*

Additional comments or items of note regarding extension:

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What diagnostic or other service labs are operated by extension?

- Diagnostic Labs (soils, diseases, water, insects, forage, etc.)
  - **W.A. Callegari Water Quality Lab**—performed 3,318 tests on water, compost/soil and biodiesel samples for 175 clients which generated \$63,811.
  - **LSU AgCenter Plant Diagnostic Center**—analyzed over 1,000 samples for 190 clients and over \$17,000 in revenue
  - **LSU AgCenter Soils Lab**—analyzed over 27,000 samples for 5,040 clients and generated \$231,000, an increase of \$60,000 over a two-year period of time.

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## Section 5: Experiment Stations, Research Farms, and Outlying Research Centers

Please provide a listing of your agricultural experiment station locations and other key research locations, together with key characteristics or focus areas of each. *Note: please cut and paste table as needed to create enough entry places for all of your experiment station sites.*

### Station 1.

<i>Experiment Station name</i>	<i>Hill Farm Research Station</i>
<i>Location (zip code)</i>	<i>11959 Highway 9 Homer, Louisiana 71040</i>
<i>Size (acres)</i>	<i>1,488</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Beef, forages, forestry, mastitis, poultry and water quality research.</i>
<i>Notable or unique characteristics or assets</i>	<i>Mastitis Research Laboratory</i>
<i>Number of personnel</i>	<i>19.4 FTE</i>

### Station 2.

<i>Experiment Station name</i>	<i>Pecan Research Station</i>
<i>Location (zip code)</i>	<i>10300 Harts Island Road Shreveport, Louisiana 71115</i>
<i>Size (acres)</i>	<i>90</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Pecan research.</i>
<i>Notable or unique characteristics or assets</i>	<i>Only university research facility in the country exclusively devoted to this nut crop.</i>
<i>Number of personnel</i>	<i>8 FTE</i>

### Station 3.

<i>Experiment Station name</i>	<i>Red River Research Station</i>
<i>Location (zip code)</i>	<i>262 Research Station Drive Bossier City, Louisiana 71112</i>
<i>Size (acres)</i>	<i>572</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Variety evaluation, insect pest management, soybean breeding, production of greenhouse tomatoes and southern pea breeding research.</i>
<i>Notable or unique characteristics or assets</i>	<i>The station is a leader in greenhouse tomato studies and has constructed wetlands to study the effects of runoff from agricultural fields.</i>
<i>Number of personnel</i>	<i>17 FTE</i>

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## Station 4.

<i>Experiment Station name</i>	<i>Macon Ridge</i>
<i>Location (zip code)</i>	<i>212 A Macon Ridge Road Winnsboro, Louisiana 71295</i>
<i>Size (acres)</i>	<i>815</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Row crop production.</i>
<i>Notable or unique characteristics or assets</i>	<i>Integrated pest management strategy for insects, diseases and weeds that improve the profitability of the largest industry in the area, agriculture.</i>
<i>Number of personnel</i>	<i>17 FTE</i>

## Station 5.

<i>Experiment Station name</i>	<i>Northeast Research Station</i>
<i>Location (zip code)</i>	<i>4589 Highway 605 St. Joseph, Louisiana 71366</i>
<i>Size (acres)</i>	<i>600</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Variety development, conservation tillage, integrated pest management, weed control, irrigation, disease prevention and precision agriculture research.</i>
<i>Notable or unique characteristics or assets</i>	<i>Serves as a hub of agricultural knowledge for the region which is agriculturally based growing cotton, corn, soybeans, wheat, grain sorghum and rice.</i>
<i>Number of personnel</i>	<i>18.6 FTE</i>

## Station 6.

<i>Experiment Station name</i>	<i>Sweet Potato Research Station</i>
<i>Location (zip code)</i>	<i>130 Sweet Potato Road Chase, Louisiana 71324</i>
<i>Size (acres)</i>	<i>300</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Production of virus-free foundation seed, production practices and pest control research.</i>
<i>Notable or unique characteristics or assets</i>	<i>Only facility of its kind devoted solely to sweet potato research. Industry is anticipated to increase because of new process facility located near station.</i>
<i>Number of personnel</i>	<i>10 FTE</i>

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## Station 7.

<i>Experiment Station name</i>	<i>Calhoun Research Station</i>
<i>Location (zip code)</i>	<i>321 Highway 80 East Calhoun, Louisiana 71225</i>
<i>Size (acres)</i>	<i>80</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Wood products and helping the forestry industry.</i>
<i>Notable or unique characteristics or assets</i>	<i>Oldest research station in the state of Louisiana</i>
<i>Number of personnel</i>	<i>5 FTE</i>

## Station 8.

<i>Experiment Station name</i>	<i>Dean Lee Research Station</i>
<i>Location (zip code)</i>	<i>8105 Tom Bowman Drive Alexandria, Louisiana 71302</i>
<i>Size (acres)</i>	<i>3,000+</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Cattle, corn, cotton, soybeans, wheat and grain sorghum research</i>
<i>Notable or unique characteristics or assets</i>	<i>Home of the oldest performance bull testing programs in the country.</i>
<i>Number of personnel</i>	<i>19 FTE</i>

## Station 9.

<i>Experiment Station name</i>	<i>Iberia Research Station</i>
<i>Location (zip code)</i>	<i>603 LSU Bridge Road Jeanerette, Louisiana 70544</i>
<i>Size (acres)</i>	<i>1,137</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Sugarcane, cattle, and row crops research.</i>
<i>Notable or unique characteristics or assets</i>	<i>Energy cane, a variety of sugarcane developed to produce biomass than can be turned into fuel for the emerging biofuels market is being researched.</i>
<i>Number of personnel</i>	<i>12.48 FTE</i>



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## Station 10.

<i>Experiment Station name</i>	<i>Rice Research Station</i>
<i>Location (zip code)</i>	<i>1373 Caffey Road Rayne, Louisiana 70578</i>
<i>Size (acres)</i>	<i>1,000</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Development of new rice varieties, production and pest management.</i>
<i>Notable or unique characteristics or assets</i>	<i>Some rice varieties are developed for crawfish forage for those farmers who double crop. Foundation seed program.</i>
<i>Number of personnel</i>	<i>41 FTE</i>

## Station 11.

<i>Experiment Station name</i>	<i>Sugar Research Station</i>
<i>Location (zip code)</i>	<i>5755 LSU AgRoad St. Gabriel, Louisiana 70776</i>
<i>Size (acres)</i>	<i>600</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Development of new sugarcane varieties and pest management systems for sugarcane.</i>
<i>Notable or unique characteristics or assets</i>	<i>Louisiana's sugarcane industry remains profitable and poised to continue a tradition that is more than 200 years old from this research.</i>
<i>Number of personnel</i>	<i>19 FTE</i>

## Station 12.

<i>Experiment Station name</i>	<i>Hammond Research Station</i>
<i>Location (zip code)</i>	<i>21549 Old Covington Highway Hammond, Louisiana 70403</i>
<i>Size (acres)</i>	<i>150</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Landscape horticulture including plant selection, fertility, weed control and plant growth regulators are researched.</i>
<i>Notable or unique characteristics or assets</i>	<i>"Super Plant" designation for ornamental plants that grow well in all parts of Louisiana.</i>
<i>Number of personnel</i>	<i>12 FTE</i>

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## Station 13.

<i>Experiment Station name</i>	<i>Bob R. Jones Idlewild Research Station</i>
<i>Location (zip code)</i>	<i>4419 Idlewild Road Clinton, Louisiana 70722</i>
<i>Size (acres)</i>	<i>1,800</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Improved genetics in deer and other wildlife as well as work to control the aquatic weed giant salvinia, which has become an economic issue in Louisiana, clogging lakes and lowering property values.</i>
<i>Notable or unique characteristics or assets</i>	<i>Only facility of its kind in the country that has both a captive and native deer herd.</i>
<i>Number of personnel</i>	<i>9.75 FTE</i>

## Station 14.

<i>Experiment Station name</i>	<i>Southeast Research Station</i>
<i>Location (zip code)</i>	<i>41217 Bethel Road Franklinton, Louisiana 70438</i>
<i>Size (acres)</i>	<i>839.4</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Improving feed quality at the lowest cost so the cows get the nutrition they need to produce the optimum level of milk and getting maximum benefit from animal waste without harming the environment are researched.</i>
<i>Notable or unique characteristics or assets</i>	<i>State-of-the-art dairy operation and forage testing laboratory on station support the dairy industry in Louisiana and Mississippi</i>
<i>Number of personnel</i>	<i>23 FTW</i>

## Station 15.

<i>Experiment Station name</i>	<i>Aquaculture Research Station</i>
<i>Location (zip code)</i>	<i>2410 Ben Hur Road Baton Rouge, Louisiana 70820</i>
<i>Size (acres)</i>	<i>178</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Research on catfish, oysters, alligators, baitfish, turtles, a variety of freshwater game fish, and crawfish.</i>
<i>Notable or unique characteristics or assets</i>	<i>Station's goal is to make the aquaculture industry more competitive in the global economy.</i>
<i>Number of personnel</i>	<i>14.09 FTE</i>

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## Station 16.

<i>Experiment Station name</i>	<i>Burden Center</i>
<i>Location (zip code)</i>	<i>4560 Essen Lane Baton Rouge, Louisiana 70809</i>
<i>Size (acres)</i>	<i>440</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Projects on turfgrass, vegetable and fruit crops, and ornamentals.</i>
<i>Notable or unique characteristics or assets</i>	<i>The center is a member of the All-America Selections National Network of Display Gardens for roses, other flowers and vegetables.</i>
<i>Number of personnel</i>	<i>12.67 FTE</i>

## Station 17.

<i>Experiment Station name</i>	<i>Central Research Station</i>
<i>Location (zip code)</i>	<i>2310 Ben Hur Road Baton Rouge, Louisiana 70820</i>
<i>Size (acres)</i>	<i>3,000</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Provides land, equipment and personnel to support plant and animal studies conducted by researchers from LSU AgCenter departments.</i>
<i>Notable or unique characteristics or assets</i>	<i>Wheat and oat breeding program is one of the largest in the U.S.</i>
<i>Number of personnel</i>	<i>35.81 FTE</i>

## Station 18.

<i>Experiment Station name</i>	<i>Reproductive Biology Center</i>
<i>Location (zip code)</i>	<i>5995 LSU AgRoad St. Gabriel, Louisiana 70776</i>
<i>Size (acres)</i>	<i>1,200</i>
<i>Key focus area(s) (e.g. poultry, crop demonstration, etc.)</i>	<i>Research that benefits health and fertility of both livestock and humans.</i>
<i>Notable or unique characteristics or assets</i>	<i>History of firsts in reproductive technology including producing calves from 40 year old frozen bovine semen, the first cloned pig using embryo bisection, and the first domestic cat from nonsurgical embryo transfer. Through research involving transgenic goats scientists developed a lifesaving drug that prevents clotting in heart patients.</i>
<i>Number of personnel</i>	<i>6 FTE</i>

Additional comments or items of note regarding experiment stations:

*Rosepine Research Station and the Coastal Area Research Station were closed due to budget cuts.*

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## Section 6: Industry Partnerships

Please provide a description of FIVE notable partnerships that your institution has with industry. Examples might include a joint engineering center with an agricultural equipment manufacturer, plant breeding or transgenics programs with seed companies, bioprocess development with chemical or biofuels companies, food product development with food manufacturing companies, etc.

Provide details on companies, groups of companies, commodity groups etc. worked with, key results achieved and thoughts on benefits provided.

1. BASF—Clearfield Rice
2. Hole Pluggers--Tiger Bullets
3. ConAgra Lamb Weston—sweet potato
4. H+B Beverage—EX5
5. University Products LLC—animal vaccines

What areas of R&D at your institution do you believe hold the most promise for increasing industry engagement in the next five years?

*Variety development and crop improvement, vaccine development for wildlife, potential plant development in horticulture, youth development; surface water irrigation development and application; sustainability certification for market access to major markets, food products and additives, biopharmaceuticals, biofuels and specialty chemicals, forest-based industrial products*

What agriculture and ag, forestry or fisheries-related industries do you expect to see grow in the southern region during the next five years?

*Energy cane for biofuels, potential use of forestry products for biofuels, wildlife management regarding vaccines to extend longevity, aquaculture, water (quality, quantity), climate change, ag waste, food products and additives, bi-based chemicals and pharmaceuticals*

Additional comments or items of note regarding industry partnerships:

*In addition to the industry partnerships listed above, the following are other major partnerships which exist in the state:*

- Commodity boards – rice, soybean, grain, sugar, cotton, sweet potato*
- Local governments—provide funding for salary support and benefits, facilities and equipment for local extension faculty in parish (county) offices.*
- Ag & natural resources industry leaders and local communities in the response and recovery after 4 major hurricanes.*
- Pennington Biomedical Research Center—addressing the state’s healthy lifestyles and childhood obesity challenges*
- Louisiana Department of Agriculture and Forestry, Louisiana Farm Bureau, NRCS, Louisiana Cattleman’s Association and Louisiana Department of Environmental Quality—the Master Farmer*

Program

## Section 7: Regional Cross-Institutional Partnerships

Please provide a description of FIVE projects, initiatives, centers or programs, etc. that your institution is engaged in together with other institutions in the southern region. Examples might include joint initiatives in biofuels development, food safety, biosecurity, rural economic development, etc.

1. Louisiana/Mississippi MOU collaboration for beef and dairy research and extension work
2. Biofuel development from ag products
3. Sea Grant Gulf States seafood quality certification
4. Sun Grains
5. Crop pest management

What do you believe are some of the unique assets of the southern region that make it particularly well-suited to leadership in the 21<sup>st</sup> Century agbioscience economy?

*Water availability, longer growing season, land and water transport providing better product delivery infrastructure (navigation systems, ports and waterways, Gulf of Mexico, access to the Panama Canal for Asian trade, oil and gas pipelines), historical strong link with agriculture; driving force in regional economy, climate for biomass crop production, Ag- focused land grant universities and concomitant Research and Extension programs.*

Additional comments or items of note regarding potential or existing partnerships with other institutions across the southern region:

*Significant in-state cross institutional partnerships include:*

- *LSU A&M College of Agriculture (COA) – many joint teaching appointments / joint faculty in campus academic departments / **NOTE:** budget and overall management for COA is not part of the LSU AgCenter budget and operations.*
- *Louisiana Campuses Research Initiative (LaCRI) fosters strategic collaboration in emerging research arenas among other state institutions.*
- *LSU AgCenter & Pennington Biomedical Medical Research Center healthy lifestyles and childhood obesity initiative.*

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## Section 8: Education and Human Capital Development

### Student Population

<i>Number of students graduated in most recent year with Bachelor's degrees from the College</i>	406
<i>Number of students graduated in most recent year with Master's degrees from the College</i>	90
<i>Number of students graduated in most recent year with Doctorate degrees from the College</i>	35
<i>Number of students graduated in most recent year with Associates or other less than baccalaureate qualifications</i>	0

In a science and knowledge-driven economy, skilled human capital is a critically important asset for our states. Please provide details pertaining to education and skills development in the sections below:

**New or innovative education programs or degree programs developed** (for example: bioprocessing or biorefinery operator training, biosecurity training, education programs in new fields such as functional foods, nutraceuticals, etc.)

*Audubon Sugar Institute sugar processing short course, food science food processing conference*

### Continuing education programs or training for producers or industry

*Masters certification programs*

### Professional Certification Programs

*Certified Landscape Professional (LNLA); Arborist Certification; Pesticide Safety Certification*

### Leadership training, including civic, commodity, government, youth, etc.

*Community Leadership Economic Development (CLED) initiative for local community leadership development, Ag leadership Program, LAYAPP (Louisiana Young Ag Producers Program), Internal leadership program, youth leadership programs*

### Entrepreneur training and other special training or education initiatives

*Rural Broadband Initiative – ecommerce/business expansion using the Internet/ online degree attainment/ online access and use of research based information; eXtension Communities of Practice and research based content from Land Grant Institutions best of the best; AgMagic (Ag Awareness)*

Additional comments or items of note regarding education and training:

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## Section 9: Into the Future

### What key challenges does your institution face in the future:

Key challenges for Experiment Stations in your state

*Funding model and realigning LAES to meet stakeholder needs; declining work force pool; faculty recruitment and retention*

Key challenges for Extension Service in your state

*Sustainable funding at all levels; succession planning to replace lost expertise and experience; focusing programs to best meet stakeholder needs*

### What emerging opportunities or trends do you see impacting your institution:

Emerging opportunities and trends for Experiment Stations

*Electronic communications and social media; multistate/regional initiatives; cross-state sharing of resources, memorandums of understanding, etc.; technology development and deployments; crop and pest management improvements in response to changing climate; refocus on core strengths; food product development*

Emerging opportunities and trends for Extension Service

*Using electronic technology for information transfer (i.e. social media platforms, eXtension); improved marketing of extension programs; better utilization of and increased dependence on well-trained volunteers; increase in number of locally- funded agent positions; more competitive in proposal development and external funding streams (AFRI/other grant sources); identification and pursuit of alternative funding streams at the local level to support extension programs; urban programming opportunities to build non-traditional supporter base; enhanced partnerships at the local, state and federal levels*

### For the southern region overall, what do you see as the top five challenges/issues moving forward

- 1. Maintaining relevance with less resources (i.e. sustainable funding at all levels, increased competition for extramural funds, smaller staffs)*
- 2. Maximizing technology use for information transfer*
- 3. Regulations – especially water quality.*
- 4. Reduced number of students entering agriculture training – lower work force*
- 5. Relatively few crop processing facilities. Processing value is captured elsewhere*

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What are the top five differentiating factors of the southern region in agriculture, agbiosciences, community/family/youth development, etc. What makes the region unique or provides key comparative advantages.

1. <i>Crop diversity and basic production capacity</i>
2. <i>Water resources and transportation system</i>
3. <i>Co-curricular 4-H program in school systems</i>
4. <i>Fisheries, recreation, aquaculture potential</i>
5. <i>Climate</i>

## Section 10: Interview Suggestions

Battelle would like to interview some key stakeholders (outside of the land-grant institutions) across the southern region to discuss their perspective on the importance of extension and agricultural research. Please provide the names and contact information for three individuals who you would suggest for interviewing in your state:

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Telephone</b>	<b>Email</b>
<b>Mike Strain</b>	<b>Commissioner of Agriculture and Forestry</b>	<b>Louisiana Department of Agriculture &amp; Forestry</b>	<b>866-927-2476</b>	<b>commissioner@ldaf.state.la.us</b>
<b>Jim Simon</b>	<b>General Manager</b>	<b>American Sugarcane League</b>	<b>985-448-3707</b>	<b>jsimon@amsl.org</b>
<b>Buck Vandersteen</b>	<b>Executive Director</b>	<b>Louisiana Forestry Association</b>	<b>318-443-2558</b>	<b>lfa@laforestry.com</b>
<b>Ronnie Anderson</b>	<b>President</b>	<b>Louisiana Farm Bureau</b>	<b>225-922-6200</b>	<b>ronniea@lfbf.org</b>
<b>Ray Young</b>	<b>Ag Consultant and farmer</b>		<b>318-724-6287</b>	<b>Dorothy.rayyoung@nexusla.net</b>
<b>Jackie Loewer</b>	<b>Chairman</b>	<b>Louisiana Rice Federation</b>	<b>337-581-5179</b>	<b>jploewer@aol.com</b>
<b>Ken Thornhill</b>	<b>Sweet potato producer</b>	<b>Thornhill Farms</b>	<b>318-724-6687</b>	<b>thornhillfarms@hotmail.com</b>





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## **Section 11: Additional Comments**

Please provide any additional comments, information, data, case-studies, impact assessment results, etc. that you feel may be useful or relevant for inclusion in this project and resulting report:

*Reference documents attached to email submitted with this report.*