



FY 2019-20 Budget Request

Economic Development and Natural Resources Subcommittee
of the S.C. House Ways and Means Committee
January 16, 2019

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Clemson Public Service Activities (PSA) is part of a **national network** of 50 major land-grant universities—one in each state—that work in concert with the USDA National Institute of Food and Agriculture. Clemson PSA has state and federal mandates to conduct research, extension and regulatory programs that **support economic growth in South Carolina's largest industry** – agriculture and forestry, or agribusiness. Clemson PSA is made up of four interrelated units: Experiment Station, Cooperative Extension Service, Livestock-Poultry Health, and Regulatory Services. The overall agency mission is to conduct research, extension (knowledge transfer) and regulatory programs that:

- Advance the competitiveness of South Carolina's \$42 billion agriculture and forestry industry
- Enhance the economic potential of rural communities
- Safeguard the food supply
- Preserve natural resources
- Prepare young people for the workforce through 4-H

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CLEMSON®

PUBLIC SERVICE ACTIVITIES

As a land-grant university, Clemson is part of a national system created by the U.S. Congress to improve the quality of life for citizens in every state through teaching, research and outreach. The university's statewide **Public Service and Agriculture (PSA)** network conducts research, outreach and regulatory programs that improve and protect economic prosperity and well-being for all South Carolina citizens. Clemson PSA programs develop and deliver impartial science-based information in five areas that align with the national land-grant university system and touch the life for every South Carolinian. Those areas are: agribusiness productivity and profitability; economic and community development; environmental conservation: food safety and nutrition; and youth development and families.

Clemson PSA includes:

Experiment Station

Consisting of six (6) research and education centers (RECs), Experiment Station develops relevant, research-based knowledge for agriculture, forestry and natural resources to enhance economic development

Cooperative Extension Service

Transfers science-based information on agriculture, forestry and natural resources to commercial producers and land managers, and individuals. Programs include agriculture, natural resources, food safety and nutrition, economic and community development, and 4-H youth development.

Livestock-Poultry Health and State Veterinarian

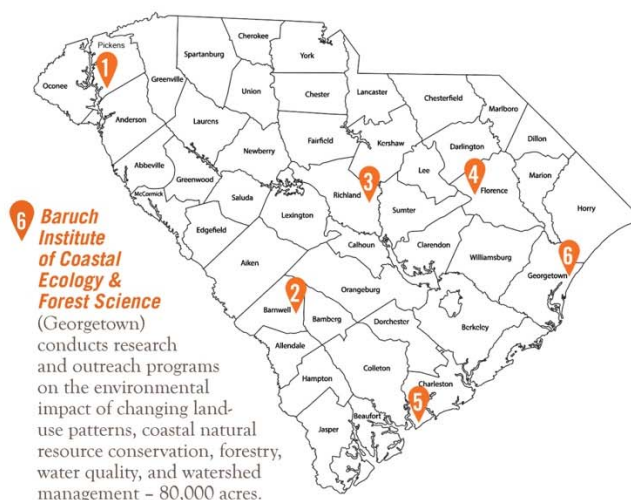
Serves as South Carolina's animal health authority, administers the state meat and poultry inspection program, and operates the state veterinary diagnostic center for livestock and companion animals.

Regulatory Services

Regulates the safe and legal use of pesticides, the quality of fertilizer and lime, the certification of seed purity and germination, the prevention and control of plant pests, and the certification of greenhouse and nursery plants as pest-free.

Research and Education Centers:

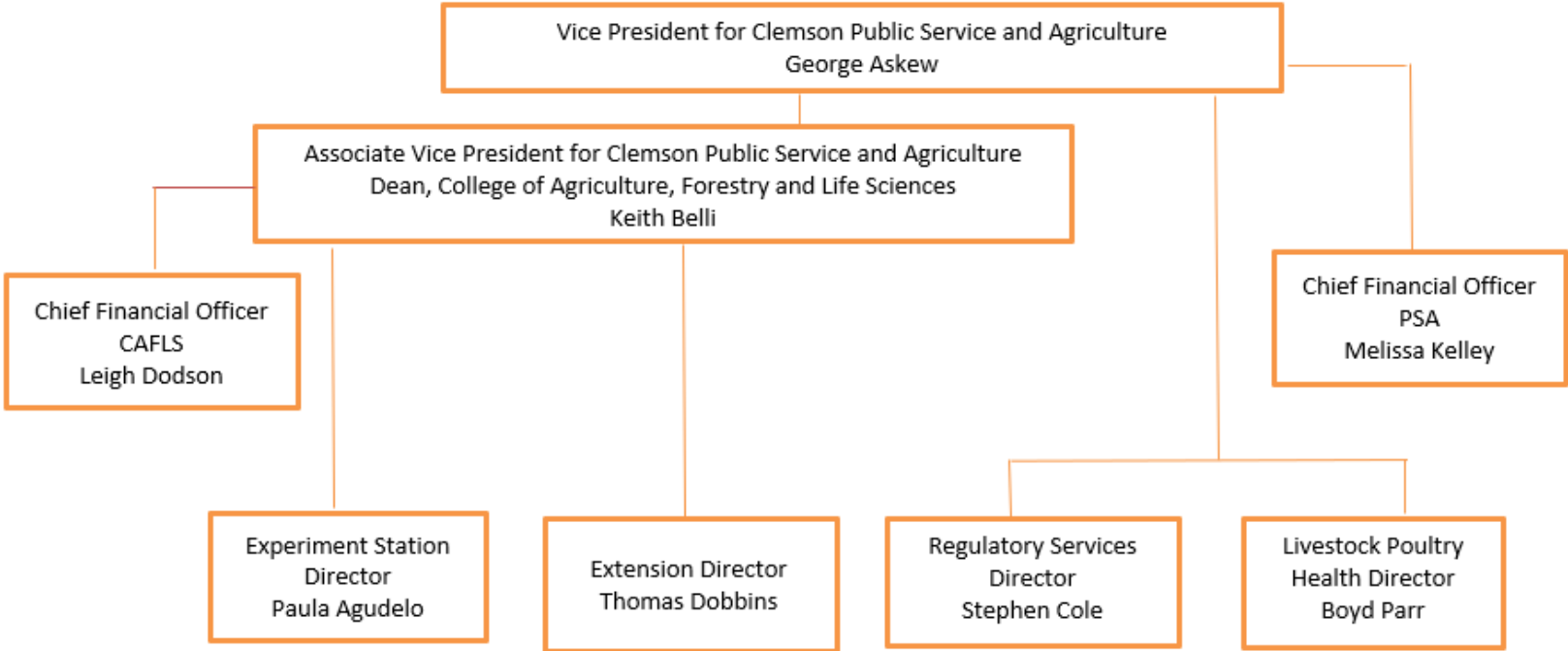
- 1 Simpson Research & Education Center** consists of all of the research farms located on and around Clemson University's main campus. The mission of the Simpson REC is to support agriculture research, teaching and public services of Clemson University.
- 2 Edisto Research & Education Center** (Blackville) conducts applied research and outreach programs on sustainable crop and livestock production systems, including cotton, soybeans, corn, peanuts, vegetables, small grains and beef cattle - 2,354 acres.
- 3 Sandhill Research & Education Center** (Columbia) conducts applied research and outreach programs on economic and community development, and environmental stewardship with an emphasis on building statewide collaborations to utilize resources more efficiently.
- 4 Pee Dee Research & Education Center** (Florence) conducts applied research and outreach programs on row crops to enhance yields through biotechnology and to reduce the environmental impact of crop production and golf course management - 2,300 acres.
- 5 Coastal Research & Education Center** (Charleston) conducts applied research and outreach programs for vegetables, strawberries and specialty crops in partnership with the USDA Vegetable Laboratory - 325 acres.



| | | | |
|--------------|------------------------|----------|----|
| AGENCY NAME: | Clemson University PSA | | |
| AGENCY CODE: | P200 | SECTION: | 45 |



PSA Organizational Chart



Clemson University - Public Service Activities FTE Summary

| | State | Federal | Other | Total |
|------------|--------|---------|--------|--------|
| Authorized | 517.53 | 180.87 | 119.35 | 817.75 |
| Vacant* | 57.00 | 14.75 | 27.00 | 98.75 |
| Filled* | 460.53 | 166.12 | 92.35 | 719.00 |

* Clemson University PSA FTEs are combined with Clemson University E&G FTEs in the State HR system. The vacant and filled figures above are based on vacant positions within PSA, Extension and the College of Agriculture, Forestry and Life Sciences as of 9/30/18. This is reflective of approximately 17% of the university's total vacant positions. PSA Authorized FTES account for 19% of the university's total authorized FTEs.



Authorization and Expenditures

| Clemson University - PSA (P200) | | | | |
|---|----------------------|----------------------|----------------------|----------------------|
| Total Authorization and Expenditures Comparison | | | | |
| FY18 - FY19 YTD (11/30/18) | | | | |
| | FY17-18 | | FY18-19 | |
| | Authorized | Expended | Authorized | Expended YTD |
| Recurring General | \$ 40,457,592 | \$ 40,457,592 | \$ 43,521,749 | \$ 14,484,506 |
| Non-Recurring General | \$ - | \$ 1,830,890 | \$ 12,800,000 | \$ 334,578 |
| Federal | \$ 17,275,000 | \$ 14,630,399 | \$ 17,275,000 | \$ 5,940,311 |
| Other | \$ 23,395,568 | \$ 13,385,901 | \$ 23,395,568 | \$ 5,902,462 |
| Total Funds | \$ 81,128,160 | \$ 70,304,782 | \$ 96,992,317 | \$ 26,661,857 |

Other Funds Fund Balance 6/30/18 - \$13,924,423

FY 19-20 Prioritized Budget Request Summary

P200 - Clemson University - Public Service Activities

| BUDGET REQUESTS | | | | | | | | | | | | | FUNDING | | | | | FTEs | | | |
|-----------------|---|--|---|------------------------|---------------------------|-------|---------|--------------|-------|-------|---------|-------|---------|--|--|--|--|------|--|--|--|
| Priority | Request Type (recurring, non-recurring, capital) | Request Title | Description | General - Recurring | General - Nonrecurring | Other | Federal | Total | State | Other | Federal | Total | | | | | | | | | |
| 1 | Recurring | Comprehensive Statewide Extension Programs | Support for Extension Agents and operating across all Extension program teams; Investment in Emerging Agriculture Programs and CU-SAFE Equipment Safety program implementation. | \$ 2,015,000 | | | | \$ 2,015,000 | 18.00 | | | 18.00 | | | | | | | | | |
| 2 | Recurring | Critical Agriculture and Natural Resources Research | Funding for five faculty members with research expertise targeted to specific programs and provide operational and technical support to those programs including: agricultural systems modeling, agricultural technology transfer, saline agriculture, silvopasture, enhanced crops, and industrial hemp. Additionally, the request provides support for five crop research technicians and operating and travel costs. | \$ 1,540,000 | | | | \$ 1,540,000 | 5.00 | | | 5.00 | | | | | | | | | |
| 3 | Recurring | Livestock Poultry Health and Regulatory Programs Support | Support for Livestock Poultry Health operating dollars to ensure continuity and reliability of core operations. Additionally, the request provides for the support for Regulatory Services in enhancing their Organic and Sustainable Agriculture program as well as their invasive Pest Monitoring and Control Program, including 6 FTE and 1 temporary position, as well as operating and travel funding. | \$ 1,100,000 | | | | \$ 1,100,000 | 6.00 | | | 6.00 | | | | | | | | | |
| 4 | Capital | Facility Renovaton for Water Research | Renovation of the Water Resources Center, which will house the team of water resources experts to conduct analytical water-related research, and provide research-based natrual resources management outreach, instruction and demonstration. | | \$ 4,000,000 | | | \$ 4,000,000 | | | | 0.00 | | | | | | | | | |

Recurring Priority #1



Comprehensive Statewide Extension Programs

Request: \$2,015,000

Clemson Cooperative Extension is seeking funding to improve our educational programming for youth, ensure that all counties have agent support for critical agriculture and natural resource programs, and develop and implement new programming initiatives for emerging crops.

COOPERATIVE EXTENSION COUNTY PROGRAMS PERSONNEL **\$600,000**

Support for hiring Clemson Cooperative Extension agents in the following program areas:

- Food Safety & Nutrition (2);
- Agribusiness (2);
- Forestry and Wildlife (1);
- Livestock and Forages (1);
- 4-H and Youth Development (2);
- Horticulture (1)

EMERGING AGRICULTURE PROGRAMS PERSONNEL **\$1,350,000**

Industrial Hemp: Industrial hemp is a new and emerging opportunity for the state's farmers, and Extension agents are helping farmers better understand hemp's potential viability as a S.C. crop. The requested funding will provide crop-specific personnel and support for this expanding statewide pilot program to ensure producers can partner with universities to meet statutory requirements.

Organic Foods: The requested funding will support personnel focused on advancing organic crop and livestock production and organic processing techniques in this growing sector of the South Carolina agricultural economy and will support the operation of a 6-acre organic demonstration farm on the Clemson University campus.

Controlled Environment Agriculture: Greenhouse production is an emerging growing technique that can help S.C. producers extend the growing season and meet the increasing demand for fresh locally and sustainably produced vegetables, fruits and herbs. The requested funding will enable Clemson Cooperative Extension to assist producers in participating in this developing agricultural market.

Emerging Agriculture Program Support personnel requested with travel and operating support:

- Production Specialist (1);
- Agriculture Agents (3);
- Horticulture Agents (4);
- Farm Manager (1)

CU-SAFE AGRICULTURAL EQUIPMENT SAFETY PROGRAM **\$65,000**

In response to industry requests for agricultural safety education programs, and recent tragedies related to the operation of farm equipment, these funds will be used to develop a focused agricultural equipment safety certificate program called CU-SAFE. The program will provide safety education to farm operators, secondary students, high school agricultural teachers, and parents of South Carolina youth, and will focus on increasing awareness of safety procedures, maintenance operations, and promoting and developing farm safety habits.

Recurring Priority #2

Critical Agricultural and Natural Resources Research

Request: \$1.54 million

The business of agricultural production is a fast-paced, ever-evolving, interdisciplinary field that requires producers to adopt the latest technology and techniques. Scientists at Clemson’s six Research and Education Centers (RECs) are driven to keep South Carolina farmers competitive on a national and global scale through research critical to maintaining economically viable and competitive crop production. Maintaining this core expertise requires research support, including a cohort of crop research technicians, to serve as a continuous base for successful applications for research grants and contracts with the USDA, state commodity boards, Environmental Protection Agency, Department of Energy and many other key groups.

The requested funds will be used to hire scientific personnel required to support research in areas essential to the continued competitiveness of South Carolina farmers.

These funds will be used to hire faculty members with research expertise targeted to specific programs and provide operational and technical support to those programs including:

- Agricultural systems modeling
- Agricultural technology transfer
- Saline agriculture
- Silvopasture
- Enhanced crops
- Industrial hemp

| | | |
|-----------------------------|--------------------------------|--------------------|
| Scientific Research Support | Assistant Professors (5) | \$ 631,350 |
| Technical Support | Crop Research Technicians (5)* | \$ 315,675 |
| Program Operation Support | Operating and travel | \$ 592,975 |
| | Total | \$1,540,000 |

*Time-limited positions; not FTEs.

Recurring Priority #3



Livestock Poultry Health and Regulatory Services Program Support Request: \$1.1 million

LIVESTOCK POULTRY HEALTH PROGRAMS \$250,000

Clemson PSA’s Livestock Poultry Health (LPH) unit protects animal health through the control of endemic, foreign, and emerging diseases in livestock and poultry and protects the health of S.C. consumers through a comprehensive inspection service that ensures meat and poultry products are safe and accurately labeled. One such animal disease is Highly Pathogenic Avian Influenza (HPAI), which cost the U.S. economy an estimated \$3.3 billion during a 2014-15 outbreak in the Midwest and Upper Midwest (USDA, May 2017).

LPH currently relies on variable and unpredictable revenue streams for basic operational expenses. The requested funding will ensure core operations remain strong as LPH continues protecting South Carolina’s animal industry from diseases that could devastate its economic viability.

REGULATORY SERVICES

General Operational Support \$200,000

Clemson PSA’s Regulatory Services division includes the Department of Plant Industry, Department of Pesticide Regulation, Plant and Pest Diagnostic Clinic, and Agricultural Services Laboratory. These departments work together to protect the state’s agricultural, landscape and nursery industries from the spread of plant disease and ensure the safe and lawful application of pesticides.

A majority of Regulatory Services funding is generated by program fees and federal grants. The requested recurring funding would allow Regulatory Services to continue providing services at a manageable cost and expand programs that protect and enhance the South Carolina agribusiness industry.

Organic and Sustainable Agriculture Support \$325,000

Clemson PSA’s Department of Plant Industry (DPI) supports the state’s expanding organic vegetable market by training organic growers in protocols required to meet USDA organic certification requirements and provides organic grower site certification for crops, livestock, and organic processing operations in South Carolina. The requested funding will allow DPI to expand its existing organic certification program to meet growing demand for organic crop production and add outreach programs in the area of pesticide use for organic operations.

Invasive Pest Monitoring and Control Program \$325,000

Clemson PSA’s Department of Plant Industry protects South Carolina from the spread of plant and honey bee pests and other devastating invasive species that could wipe out South Carolina crops and close down export markets to S.C. farmers. S.C. farmers are currently battling pests that harm cotton, soybeans, sweet potatoes, forests, and honeybees, and are doing so without state or federal support. The requested funding will support DPI’s efforts to control these invasive pests so that export markets remain open to S.C. farmers.

| | | |
|--------------------------|--|--------------------|
| Livestock Poultry Health | General Operational Support | \$ 250,000 |
| Regulatory Services | General Operational Support | \$ 200,000 |
| Regulatory Services | Organic Agricultural Program Support | \$ 325,000 |
| Regulatory Services | Invasive Pest Monitoring Program Support | \$ 325,000 |
| | Total | \$1,100,000 |

Non-Recurring Priority #1



Facility Renovation for Water Research

Request: \$4 million

Clemson University's South Carolina Water Resources Center (SCWRC) is a multi-disciplinary, cross-college research organization focusing its research efforts on watershed study and management; water policy; remote water sensing, image analysis and technological innovation; water resources and population growth; and emerging water problems. Through its work, the SCWRC provides state agencies with information they need to make unbiased, research-based decisions about South Carolina water resources policy.

In FY18, Clemson PSA invested approximately \$330,000 to begin converting a near-campus building that formerly housed environmental toxicology research into a solid programmatic home for the SCWRC. The building includes laboratory and meeting space and features an ideal near-campus location for research, monitoring, analysis, and technical instruction. Renovations included replacing air conditioning units and adding meeting space and video conferencing technology.

Last year, Clemson PSA requested \$7 million in one-time state funding and was allocated \$3 million. Clemson PSA is requesting \$4 million in funding to complete a renovation that will make possible overall building repairs and renovations, and feature new laboratory equipment for water quality analysis, water sensor development and remote sensor monitoring, and new computer equipment and monitors that will allow water researchers to conduct virtual meetings, on-site trainings, and webinars across the state and with southeast partnering universities.

Once renovated, the expanding team of water resources experts will be based in this building to conduct analytical water-related research, and provide research-based natural resources management outreach, instruction, and demonstration. The building's proximity to campus and research space will unify staff and create capacity for more collaborative research supported by grants and private funding.

| | |
|--|----------------------|
| Continued Renovation of SCWRC Building | \$2 million |
| Laboratory Equipment | \$1.5 million |
| Field Equipment | \$500,000 |
| Total | \$4 million |

T. Ed Garrison Arena Education and Conference Center

Request: \$3.2 million

The T. Ed Garrison Arena, near the Clemson campus, hosts an array of high-profile livestock and equine events that draw approximately 100,000 visitors annually from throughout the Southeast and increase the national reputation of South Carolina’s cattle, equine and related agricultural industries. These events include: J.D. Massey Classic Horse Show; S.C. High School Finals Rodeo; Pro Rodeo; five SCQHA Horse Shows and SCQHA approved shows; S.C. 4H State Championship Horse Show; Western Carolinas Arabian Horse Show; S.C Junior Beef Roundup; and several livestock and cattle sales.

The state funded \$1 million in FY17 and those funds were used to convert a sand arena to new all-weather arena; build 25 new full-service RV sites; convert cattle barn sales complex into a fully air-conditioned space with insulation; replace lighting in offices, bathrooms, show office and concessions with LED lighting; replace split rail fencing with vinyl fencing; and add 2,400 tons of sand to both the indoor and covered arenas to enhance the livestock footing. These improvements have created new revenue streams by allowing the arena to host larger and more varied events and cut utility costs through LED lighting.

Last year, Clemson PSA requested \$10 million in state funds and was allocated \$6.8 million. An additional \$3.2 million would complete the request and allow Clemson to build the Conference Center, add a covered arena and make improvements to the existing facility. This Center, currently in the design phase, will add to the marketability of the arena, create additional revenue streams, and allow the facility to host multiple, varied, concurrent events. More specifically, the Center and other facility improvements will allow Garrison to provide an excellent meeting and instructional facility and exhibition space that is not currently available in the upstate; secure regional and national events that will have an economic impact in the region; serve the educational needs of the university as a venue for student-centered events and indoor experiential lab space; and collaborate with Anderson, Oconee, and Pickens counties in hosting more economically impactful events and advancing the region’s tourism economy.

| | |
|---|----------------------|
| 45,000 ft ² covered open-air and schooling arena | \$2 million |
| Arena improvements | \$1.2 million |
| Total | \$3.2 million |

Non-Recurring Priority #3



Research and Education Center Graduate Student Housing Request: \$4 million

Clemson PSA's six Research and Education Centers (RECs) are home to teams of scientists performing transformative research that helps build the South Carolina agribusiness economy, conserve the state's environment and natural resources, and improve the nutritional quality and safety of the food supply.

Clemson PSA has added 23 scientist positions over the last five years with the mission to help South Carolina farmers provide safe, affordable, and nutritious food for the state's citizens and stay competitive on a global scale.

In order to fulfill its research mission, Clemson PSA must add talented and accomplished graduate students, but housing for these graduate students is insufficient.

The ability to add graduate students to study and conduct research at off-campus RECs will expand the capability of our scientists to conduct research in all regions of the state and provide the state's agriculture and natural resource industry with Master's, Ph.D. and post-doctoral students trained to help address agricultural and natural resources problems facing South Carolina.

The requested funding will allow Clemson PSA to add new housing for students and visiting scientists and renovate and expand existing housing that is currently available at each of the RECs across South Carolina.

| | |
|---|--------------------|
| Construction of Additional Facilities | \$2 million |
| Repair and Renovate Existing Facilities | \$2 million |
| Total | \$4 million |