

CAES Strategic Planning Action Team 4: Basic and Applied Research Final Report

Strategy A: Each department will have a core of nationally prominent research faculty contributing to relevant focus areas.

The Goal 4 Team ***recommends as an action item*** that the CAES establish four (4) Endowed Chair positions in the focus areas of:

- Food, health and wellness
- Breeding and genetics
- Environmental stewardship
- Sustainable food production

These chairs would be eminent scholars in these fields. The chairs would include support for a research program in each of the focus areas that develops integrated teams that cross disciplines within the CAES and the university and that encourages collaborative relationships between basic and applied scientists. While located in an academic department for tenure purposes, these chairs would be CAES Endowed Professorships. These will not simply be 'another endowed chair', but people with carefully-chosen scientific strengths that offer complementarities and synergies with the existing research portfolio, with some attention to reflecting applied needs and priorities in the state.

Based on the responses from the departments and centers the Goal 4 Team ***recommends as an action item*** that the CAES develop a coordinated plan to address the needed positions and to seek funding for the positions in the priority lists.

Strategy B: Identifying the most effective funding model to support research.

The Goal 4 Team ***recommends as an action item*** that the CAES establish an Office of Grant Attainment and staff it with the appropriate number of professionals (e.g., 8-10). The Office would be established with multiple grant specialists, including one with expertise in each of the four research focus areas listed above to assist faculty in searching for, writing, and procuring grants. We anticipate these grant specialists will also be a focal point for encouraging integrated teams around the focus areas. Additional specialists would include professionals versed in grant opportunities in the other mission areas of the College. The individuals would assist faculty members and principal investigators to prepare and submit research proposals to sponsoring agencies and organizations; identify and pursue major funding opportunities; create and maintain large databases of information sources, and; assist in the researching, writing, editing, and preparing of proposals. The grant specialists will not only help with preparing grants but will also have the authority to approve budgets and do the final submission.

Strategy C and D: Collaborative relationships between basic and applied researchers.

The Goal 4 Team ***recommends that as an action item*** a concerted effort be established to foster collaborative relationships between basic and applied scientists. In addition to the above recommended actions, we **recommend** that the CAES:

- Develop a seed grant program as an incentive for establishing integrated teams around the focus areas.

- Establish and maintain a CAES Research website and data base search engine that complements and does not duplicate various departmental resources - Having access to a searchable website and database would allow for better communication across communication areas. If the CAES research website replaced existing resources and obviated the need for departments to maintain individual resources, there might be some savings as well as more uniform operability.
- Begin a College Research Symposium/Research Fair program that would bring together scientists on a biennial basis to share research information.
- Establish a new faculty orientation program that will help basic and applied researchers communicate from the time they first arrive at UGA.
- Emphasize the need to hire, train and develop faculty that embrace collaboration between basic and applied research - When positions open in the CAES, in addition to the information that department heads provide to justify filling an open position they be asked to note how they will accomplish this goal. In addition, departments should be encouraged to make this goal a priority in the training, mentoring and evaluation of faculty.

Cost and No-Cost Items

Cost Items:

- Establish four (4) Endowed Chair positions in the focus areas of:
 - Food, health and wellness
 - Breeding and genetics
 - Environmental stewardship
 - Sustainable food production

- Establish an Office of Grant Attainment and staff it with the appropriate number of professionals (e.g., 8-10)

- Develop a seed grant program as an incentive for establishing integrated teams around the focus areas.

- Establish and maintain a CAES Research website and data base search engine that complements and does not duplicate various departmental resources. If the CAES research website replaced existing resources and obviated the need for departments to maintain individual resources, there might be some savings as well as more uniform operability.

- Begin a College Research Symposium/Research Fair program that would bring together scientists on a biennial basis to share research information.

- Establish a new faculty orientation program that will help basic and applied researchers communicate from the time they first arrive at UGA.

No-Cost Items:

- Emphasize the need to hire, train and develop faculty that embrace collaboration between basic and applied research - When positions open in the CAES, in addition to the information that department heads provide to justify filling an open position they be asked to note how they will accomplish this goal. In addition, departments should be encouraged to make this goal a priority in the training, mentoring and evaluation of faculty.

Accomplishments or Completion of Goals to Date

Strategy A: Each department will have a core of nationally prominent research faculty contributing to relevant focus areas.

In the fall of 2012, we conducted a survey of all departments and centers in the college asking for a list of significant areas of need in terms of research programs as well as any redirection of existing research areas. We also asked for a prioritized list of future hires and the support to address these needs. Many of these positions fit within the focus areas described in the strategic plan. Others may be outside of the areas, but may be important topics for the college to consider. A summary of these responses is posted separately in the Appendix.

Strategy B: Identifying the most effective funding model to support research.

We have looked at examples of this type of office at other universities and have shared this work with the Goal 6 committee. In November 2012, colleagues from several southeast universities provided basic information on the grant submission support system at their institute. The following were the comments received:

- North Carolina State University – (Basically they received the same level of support we have received in the past in planning and preparation phases.) The investigator(s) bear most of the responsibility to prepare the material and shepherd it through up to the final submission step. If a proposal large (\$1 million+) is being prepared, their sponsored program group provides staff support to tend to the pre-proposal financial information, forms, etc. and shepherds the proposal through to submittal
- Virginia Tech - (Basically they received the same level of support we have received in the past in planning and preparation phases.) The investigator(s) bear most of the responsibility to prepare the material and shepherd it through up to the final submission step. If a proposal large (\$1 million+) is being prepared, their sponsored program group provides staff support to tend to the pre-proposal financial information, forms, etc. and shepherds the proposal through to submittal
- University of Florida – Varies from program to program. A unit (e.g., college or department) may have a staff position or partial position to tend to the pre-proposal financial information, forms, etc. and shepherds the proposal through to submittal. The positions are funded through indirect funds. (One unit for example has 1.5 EFT to work with ~50 faculty.)
- University of Tennessee – They have a staff of 8 in the Institute of Agriculture (more or less equivalent to our CAES with 8 EFT to work with ~130-140 faculty). Sponsored Program Office (This is not at the university-level; <http://agriculture.tennessee.edu/sponsoredprograms/default.asp>). For each faculty member who contacts the office about a developing a proposal a grant coordinator is assigned to work with the faculty member to help develop the financial information, and shepherd the proposal through to submittal. The coordinator will review the RFA in detail and establish a timeline so the proposal package is fully complete and ready for submission three business days prior to the sponsor's due date. They assist in arranging subcontracts to another institution; deal with cost share; etc. Milestones with due dates are established for each component. If a milestone date is not met, an e-mail is sent to the faculty member, department head and department business manager. At that point, a plan will be developed among all those involved to bring the proposal/contract development back on timeline. The funding for the office appears to be at the Institute-level.

- Additional universities that have grant preparation support at the departmental, college, or university levels include:
 - Auburn
 - Mississippi State
 - Ohio State
 - UC Davis
 - University of Utah
 - Baylor Medical School
 - University of Missouri
 - University of Texas at Austin

Strategy C and D: Collaborative relationships between basic and applied researchers.

The Action Committee has not addressed this topic.

APPENDIX

2020 CAES Strategic Plan Goal 4: Basic and Applied Research Programs

Strategy A: Significant Areas of Need and Future Hires and Support

During the fall of 2012, the Goal 4 committee conducted a survey of the departments and centers in the CAES to identify significant areas of research needs. In addition, each department and center was asked to prioritize their future hires and support to address research deficiencies. The following are the responses from departments and centers.

Agricultural and Applied Economics

The department can substantially contribute to three of the four focus areas identified in the College's Strategic Plan. In addition, we have considered positions related to those areas in our recent priority discussions, so, for the purposed of the Strategic Plan, we should highlight those priorities. Specifically I propose that we list three positions:

1. Environmental Economics and Management with emphasis on the interface between sustainable food production systems and environmental stewardship.
2. Applied Economics/Agribusiness with emphasis on the economic and business aspects of regional and local food production, processing and distribution systems.
3. Consumer Economics/Marketing with emphasis on the economics of food choices, nutrition and health.
4. Regional Economic development/rural entrepreneurship.

In addition to salaries (\$85,000 for a promising assistant, \$140,000 for a very solid associate, and \$180,000 for a highly renowned full professor), we usually need to provide startup packages in the range of \$70,000 to \$100,000.

Animal and Dairy Science

Significant Areas of Need for Research Program

- Create Critical Mass of Ruminant Nutrition Faculty. This will be accomplished by putting together groups in both Athens and Tifton that will cover both beef and dairy. The goal is to form a core group of 5-6 scientists that can conduct applied nutrition/management research in both beef and dairy. The hope is to be able to meet the applied research needs of GA and U.S. producers for research geared toward profitability and sustainability, to provide a critical mass to be able to train and offer PhD courses for graduate students, and to be able to conduct research that can obtained funding from both government and industry sources. Creating this critical mass of ruminant nutrition faculty will cover the strategic plan's areas of environmental stewardship and sustainable food production systems. ADS is in the process of hiring a beef faculty in Tifton in the area of Beef Extension/Management. The plans are to add two new ruminant nutrition faculty (1 in beef and 1 in dairy) in Tifton in the future. There could also be shifting of current faculty EFT to this area as faculty retires.
- Create Critical Mass of Animal Genetics Faculty. There are currently two excellent ADS faculty members in the area of animal breeding and genetics in Athens. In addition, there is a very good animal geneticist in the Poultry Science Department that works cooperatively with ADS faculty on several projects. There will be a push to hire a third faculty member in animal breeding and genetics within ADS. Additionally there will be a push to hire one more faculty member to complement the group with the goal of strengthening the ability to train graduate students and to obtain government grants. The critical mass of animal genetics faculty will cover the strategic plan's area of breeding and genetics and could have some impact on the other three focus areas.

- Create Critical Mass of Regenerative Biology Faculty. There are currently two ADS faculty members in the areas of stem cell and regenerative biology. ADS has been provided an opportunity to hire a third faculty member for this group through the President's Third Faculty Hiring Initiative. The scientists in this Group will also be part of the Regenerative Biosciences Center, which will provide a great opportunity for collaboration with scientists across the University. Also, some scientists in the animal genetics critical mass group will be able to cooperate with the regenerative biology group on some projects. The regenerative biology faculty will fit best under the strategic plan's focus area of food, health and wellness.
- Create Critical Mass of/Meats and Muscle Biology /Growth and Development Faculty. There are currently two applied research faculty members in the area of meats and muscle biology. There is also a DW Brooks Professor in the area of obesity. Although further down on the list of priorities, there could be the addition of a basic scientist in growth of development/molecular genetics to provide a collaborative team in the meats and muscle biology group to be more competitive in obtaining extramural funding and to provide a better training opportunity for graduate students. The extra scientists could also work in other areas such as obesity and/or with the stem cell scientists in the regenerative biology group. The scientist in this group will fit under the strategic plan's focus areas of food, health and wellness and sustainable food production systems.

Prioritized list of future faculty hires (includes all faculty, not just those primarily in research)

1. Beef Extension/Teaching Faculty Member in Tifton (Person has been hired and will start July 1, 2013).
2. Dairy Teaching/Extension Faculty member in Athens (Position is currently being advertised with a projected starting date of July 1, 2013).
3. Regenerative Biologist (Research/Teaching) in Athens (Search committee has been appointed, job description has been formulated, and position announcement will go out soon. A projected starting date is July 1, 2013).
4. Animal Breeding and Genetics (Research/Teaching) Faculty Member in Athens (Activity for this position will occur beginning in January, 2013).
5. Beef Extension Faculty member Position in Calhoun. Requested permission to fill—have not received permission to fill yet.
6. Dairy nutritionist/heat stress management (Research/Extension) faculty member position in Tifton. Requested permission to fill—have not received permission to fill yet.
7. Beef nutritionist (Research/Extension) faculty member position in Tifton. Requested permission to fill—have not received permission to fill yet.
8. Animal Geneticist (Research/Teaching) in Athens. At this time, position has not been requested.
9. Ruminant Nutrition (Research/Teaching) in Athens. At this time, position has not been requested.
10. Meats and Muscle Biologist/Growth and Development (Research/Teaching) in Athens. At this time, position has not been requested.

Crop and Soil Science

The Department of Crop and Soil Sciences is a multi-functional, inter-disciplinary, multi-locational department committed to supporting outstanding research, teaching, and extension programs at the Athens, Griffin and Tifton campuses. Programs focus on crop breeding, genetics and genomics; crop and weed management, ecology and physiology; environmental sciences; and sustainable agronomic systems. Faculty work on a diverse array of row crops, vegetables and forages; water quality; soil, water and waste management; climatology; pesticide fate; and carbon flux in crop canopies. Faculty strive, through their research

programs, to discover new knowledge and evaluate innovative concepts and technologies to enhance science, help ensure a sustainable and profitable agricultural and functional natural and managed ecosystems and provide for the training of students.

The department is responsible for managing many core facilities and staff that support faculty research programs:

- Manage the plant science farm
- Manage greenhouse and growth chambers
- Manage the State-wide Variety Testing program
- Manage the State-wide Weather network
- Provide administrative and accounting support
- Manage graduate student programs
- Provide other logistical support

Over the last 9 years our department has lost a significant amount of state research support:

- Several technician positions
- NPS funding
- Staff positions
- Operational support for farm, greenhouse and laboratories
- Faculty positions
- IT support

Significant areas of need:

- Increase NPS funding and PS funding to the department to directly support research activities. Over the last several budget cuts faculty have been asked to replace lost state support with extramural funds. Direct replacement of state funds with extramural funds is often not possible (e.g., farm and greenhouse staff and operating costs; administrative and IT staff).
- Replace salary and benefits of valuable soft funded tenure track faculty, research scientists, public service faculty and staff. The funding use to pay salary and benefits could be used for other purposes thus increasing research productivity. Also, soft funded faculty cannot obtain many types of competitive grants because they cannot cost-share salary. This reduces their effectiveness and the amount of IDC available.

Prioritized list of future hires:

1. Irrigation Specialist- 20% research and 80% extension
2. Director of the State-wide variety testing program-Public Service
3. Grain and Bioenergy Extension Specialist-20% research and 80% extension
4. IT professional-classified staff position
5. Environmental Soil Scientist-70% research and 30% teaching
6. Small Grain Breeder-80% research and 20% teaching
7. Soil fertility/plant nutrition-70% research and 30% teaching
8. Stress physiologist/metabolomics-70% research and 30% teaching
9. Quantitative geneticist-70% research and 30% teaching
10. Peanut Physiologist

Entomology

Significant Areas of Need

- Technical support for six faculty members working in Integrated Pest Management of several of Georgia's most significant commodity areas: Cotton, Peanuts, Pecans, Soybeans and Corn, Peaches, and Blueberries and other small fruits.
- Laboratory space in Athens for two research programs and office space for two faculty members and several postdoctoral scientists.
- Six replacement vehicles to replace vehicles that up to 20 years old in applied research programs.
- Two teaching vans to replace dilapidated vehicles that are unsafe for student transportation.
- Information Technology Support

Prioritized List of Faculty Hires

1. Integrated Pest Management Coordinator/Pesticide Education Coordinator. Support needs: – Technician at \$55,000 in salary and benefits; startup costs \$100,000.
2. Invasive Species Insect Pest Management Blue Berries and Small Fruits. Support needs: - Technician at \$55,000 in salary and benefits; startup costs \$150,000
3. Horticultural Entomologist Floriculture and Greenhouse production. Support needs: Technician at \$55,000 in salary and benefits; startup costs \$150,000
4. Crop Pest Management Plant Breeding Support. Support needs: \$150,000 startup costs.
5. Crop Pest Management – Peanuts. Support needs: Technical support at \$55,000 in salary and benefits; startup costs \$150,000
6. Insect Host/Pathogen Relationships/Vector Biology: Technical support at \$55,000 in salary and benefits; startup costs \$150,000.
7. Insect Host/Pathogen Relationships/Immunology. Technical support at \$55,000 in salary and benefits; \$150,000 startup costs.
8. Forensic Entomologist. Support needs: Technical support at \$55,000 in salary and benefits; \$150,000 startup costs.

Food Science and Technology

Areas of Need: The Department of Food Science and Technology is dedicated to have internationally recognized programs in food, health and wellness category. Several years of budget cuts have left us with limited number of faculty, technical staff and equipment funds to sustain top quality program. The most critical need is to fill some faculty lines which are listed separately but the shortage of technical support and funds to repair aging equipment put us at disadvantage to compete for grants. Our departmental strategic goals include the following research priorities:

- Food Products, Functional Foods and Nutraceuticals: Research is needed to meet consumer demands for new foods that offer convenience along with maximum quality and health benefits. Study on nutritional role of food and food ingredients in managing chronic diseases, such as inflammation, obesity and diabetes will be a new initiative to focus.
- Processing and Packaging: Research to develop innovative food products, processes (thermal as well as non-thermal) and packaging systems for converting raw products into new products and reduce waste. Studies are needed on the efficacy and safety, best processing methods, and shelf-life of such foods, specially plant-based foods. Nanotechnology as a processing tool will be our new research initiative and an area of needed development.
- Commercialization and Economic Development: Research will be conducted to contribute to economic growth of Georgia by creating new food products and adding value to existing and

underutilized or less competitive agricultural commodities including research and development to assist with commercialization.

- Applied Microbiology research is needed to ensure the wholesomeness and safety of our food supply, and particularly to guard against threats from non-conventional sources. Such research will require an integration of chemical, biological, environmental, microbiological, engineering, packaging and systems approaches for maximum effectiveness. This are will further include probiotics and prebiotics to develop healthy foods and ingredients.

Prioritized List of Future Hires (Athens)

1. Food Processing (60T/40R, currently being advertised) This position is a replacement of a Distinguished Professor position because of retirement as of June 1, 2013. It will be a tenure track at Associate Professor level, and will also serve as Undergraduate Coordinator. The person in this position will teach about 3 or 4 courses per year (40% load) and advise graduate students in her/his laboratory. The research load of 40% for this position will focus in the area of plant-based product processing which is critical for our department and the college because we have lost the expertise in this area over the years.
2. Nutritional Chemist/Biochemist (35T/65R): The focus of research will be to elucidate how nutrients and phytochemicals in foods affect human health on a molecular level. This research is critical to the understanding of functional, nutritional and allergenic behavior of foods or ingredients. The position will closely collaborate with food science faculty working in the area of isolation (extraction) of functional ingredients, vitamin analysis and food processing. It will also work with plant scientists in the CAES to provide input on selection of beneficial attributes for plant breeders since claims are being made that differences in genotype should result in differences in the diet and health relationship. It is also expected that there will be collaborative research program with faculty in foods and nutrition, school of public health, and pharmacy.
3. Applied Microbiology (35T/65R): This will be a replacement and redirection in 4 years when an existing faculty retires. The focus of this position will be to conduct research in the area of fermented foods for probiotic or prebiotic purposes. The area of probiotics is growing and the research on isolation/identification of appropriate microorganisms as well as the product made from them will enhance our research program and make us more competitive.

Prioritized List of Future Hires (Griffin)

1. Sensory Scientist (10T/90R) - This position will be 90% research and 10% instruction on the Griffin Campus. The research will be in the area of sensory/consumer science and candidates who also have a strong background in nutrition and food regulations will be favored. The position will work with food companies and entrepreneurs to develop their products and processes for the consumer market as part of the University's Food Product Innovation and Commercialization (FoodPIC) Center. The teaching component will include advising two to three graduate students and guest lecture in advanced courses within the department. There are opportunities to collaborate with other departments in the college as well as with Agriculture Innovation Center in Tifton.
2. Food Processing Engineer (10T/90R) - This position will be 90% research and 10% instruction on Griffin campus. The research will be in the area of food processing and packaging. Familiarity with food processing unit operations and equipment used to perform them is essential. Research will include processing and packaging of Georgia commodities, such as peanuts, small fruits and vegetables. This position will work with food companies and entrepreneurs to develop their products and processes for the consumer market as part of the University's Food Product Innovation and Commercialization (FoodPIC) Center. The teaching component will include advising two to three graduate students and guest lecture in

advanced courses within the department. There are opportunities to collaborate with other departments in the college as well as with Agriculture Innovation Center in Tifton.

3. Food Chemist/Biochemist - This position will be 90% research and 10% instruction on Griffin campus. The research will be on the functional role of chemical constituents in foods, and on the chemical changes accompanying post-harvest handling, processing, packaging, and storage of foods and ingredients. This position will work with food companies and entrepreneurs to develop products and processes for the consumer market as part of the University's Food Product Innovation and Commercialization (FoodPIC) Center. The teaching component will include advising two to three graduate students and guest lecture in advanced courses within the department. There are opportunities to collaborate with other departments in the college as well as with Agriculture Innovation Center in Tifton.

Horticulture

Positions:

1. Vegetable Extension (in process)
2. Fruit Extension (in process)
3. Post-Harvest Physiology (on FY13 legislative request list)
4. Sustainable Horticulture Practices (Provost Initiative)

Plant Pathology

Position priorities for Plant Path (not ranked) in regards to information requested.

- Environmental Stewardship
Plant Pathologist – Biofuel Crops. The current knowledge of disease issues for some crops being considered for production for biofuels in Georgia, e.g. corn and soybeans, is quite good. However, for other crops that may be grown with the goal of biofuel production, e.g. switch grass and Miscanthus, there is a significant void in knowing what diseases and how to manage those diseases if these crops are to be grown under conditions in Georgia that has an environment very conducive for most plant diseases. Hence, disease management will likely be a significant issue for any crop produced in the state. Thus, if GA is to be successful in producing quality feedstocks for biofuels this position is warranted. An increase in the production of crops for biofuels has been a priority in USDA competitive grants portfolio, and disease management programs are necessary to lessen the impact of disease on crop yield and quality. Reducing the environmental and economic impact of crop production by reducing the need for inputs would significantly benefit growers in both direct production expenses and improved marketing. Additionally, alleviating dependence on foreign oil imports will help with the nation's export/import trade imbalances.
- Food, Health and Wellness
Plant Pathologist - Plant Associated Microbes- Food Safety. Fresh produce contaminated with human pathogens causes more human illness and outbreaks than any other contaminated food, with recalls and litigation costing the produce industry millions. UGA is well known for its breadth of expertise in food safety in the processing and manufacture of food products. However, greater significance is now being placed on the association of human pathogens that are food borne as the plant is grown in the field. Understanding this aspect of the "field-to-fork" food production chain is lacking at UGA and this position adds this aspect of the food safety spectrum to the UGA portfolio. As plant pathologists have a long history of studying plant associated microbes, this position is requested for the Department of Plant Pathology. Filling this gap will capitalize on the considerable opportunities and needs in contemporary food safety and microbial biology. The incumbent in this position will primarily focus on the biology, ecology, and evolution of plant associated microbes that are fresh produce borne human pathogens, but also pathogens of plants. With nearly unprecedented opportunities to garnish funds at the Federal level, the

successful candidate for this position will enhance the utility of new molecular approaches to address plant health-food safety issues and strengthen UGA competitiveness.

- **Sustainable Food Production Systems**
Plant Pathologist - Etiology (Bacteriology / Virology; primarily vegetables). Phytopathogenic bacteria and plant infecting viruses are recurring and emerging threats to the agricultural crops grown in Georgia, particularly vegetables. Pathogen detection and understanding how disease develops are primary knowledge gaps that are necessary to fill before management strategies can be implemented. This position will focus on understanding the cause and nature of recurring and emerging diseases in crops grown in Georgia currently of unknown etiology, with an emphasis on vegetables, to facilitate the translation of new findings into effective management strategies for producers.

Poultry Science

Our overall research need is more faculty positions. We have lost so many positions during the budget cuts of the last several years that we are in desperate need of new faculty. We cannot continue to serve the needs of the poultry producers of the state or educate our students as effectively as they need to be to succeed in the future without filling the positions listed below.

Poultry Science Research Position Priorities:

1. Nutrition position - This position has been approved to be filled. Announcement closed Dec 1, 2012. We are currently screening applicants and will begin interviews in Jan. 2013. Advertised as a research position in poultry nutrition as it relates to genetics, immunology, disease, reproduction, or developmental biology. Support needed will be startup funding (\$150,000), lab renovation (\$50,000), research tech for 3 years (\$120,000), 2 grad student stipends for 3 years (\$90,000).
2. Poultry processing / food safety position – This is a chaired position (John Bekkers Endowed Chair). Behind the Nutrition position above, it is the department's highest priority. Support needed would be salary for the position and start up funding (\$150,000), lab renovation (\$50,000), research tech for 3 years (\$120,000), 2 grad student stipends for 3 years (\$90,000).
3. Sustainable poultry position – This position needs a little explanation. We discussed the need for a faculty member to work in the general areas of animal welfare, alternative poultry production systems, economics and environmental issues. Few of us like the sustainable descriptor, but we failed to come up with a better word, so in deference to the CAES strategic plan, we will stay with that until we can define it better. Support needed will be salary for the position and start up funding (\$150,000), lab renovation (\$50,000), research tech for 3 years (\$120,000), 2 grad student stipends for 3 years (\$90,000).
4. Poultry health / immunology – We have lost our parasitology program due to retirements. It has been a unique strength in the past and one we still think is important. We have broadened the focus to poultry health / immunology in general. This position might be a joint position with the Poultry Diagnostic Research Center in the College of Vet Med. Support needed will be salary for the position and startup funding (\$150,000), lab renovation (\$50,000), research tech for 3 years (\$120,000), 2 grad student stipends for 3 years (\$90,000).

Center for Agribusiness and Economic Development

The Center for Agribusiness and Economic Development has two areas of need. We need at least one additional faculty member. We are down to three full time faculty and are struggling to meet the demand from our constituents. We are in need of an agribusiness faculty member to cover the southern part of the state. The rise of the local and sustainable food movements has generated demand for information and services specific to these topic areas. Currently, at our current staffing levels, we have a difficult time addressing these emerging needs.

Secondly, we are down to part-time support staff. The Center no longer has a full time secretary and or accountant. The Center relies on outside funding for support and we engage in numerous contracts over the course of a year. These contracts are both for services provided and services we need to successful complete projects. This creates a unique set of circumstances and thus the Center requires an accountant/office manager position. The Center currently has a retire/rehire person fulfilling this very important role.

A prioritized list of future hires (include those that are currently in process) and the support to address these needs.

- The Center for Agribusiness and Economic Development does not currently have any hires in process. Our priority would be a new agribusiness faculty member. We do not have any commodity groups or a specific set of constituents that we can seek support from as we work with all agribusinesses and producers across the state.

Center for Food Safety

Positions:

1. Applied Molecular Food Microbiologist (in process)
2. Microbial Genetics-Foodborne pathogens-Ecological niches
3. Microbial Ecology-*Salmonella* and enteric pathogens-dried foods and food processing facilities
4. Food Microbiology-Rapid methods for pathogen detection-foodborne bacterial pathogens

Center for Soybean Improvement/CAGT

For graduate student training we are still in need of faculty in the areas of quantitative genomics/bioinformatics as it applies to crop improvement.

Research focus area on genotype to phenotype. Being better able to predict phenotypes based on high resolution genotypic data. Is applicable for animal and human health too. I could see a cluster hire in this area with Animal Science, Genetics and the new Human Health college.

A prioritized list of future hires included

- Wheat breeding position to fulfill industry needs, train students and participate in teaching needs.
- Quantitative geneticist to support breeding programs, train students, teach needed courses and push the research envelope.

FoodPIC

Significant areas of need

We anticipate that future research by Food Science and Technology faculty on the Griffin campus will be guided by our commitment to assist the food industry in Georgia and beyond to develop and improve products and processes while investigating the underlying scientific bases for food quality attributes. These might include

- More efficient (lower costs, less fossil fuels, less waste and by products, more creative use of co-products) processing and products
- Innovative products to address health concerns of the regional and national populations including products with lower glycemic index, lower digestible energy, increased pre- and pro-biotic content.

- Increased emphasis on Georgia commodities from poultry (better utilization of low-value fractions) to increasingly important fruits and vegetables (novel products, improved, quality enhancing packaging).

Prioritized list of faculty – Positions and priorities are described and listed under Food Science and Technology (Griffin)

Institute of Plant Breeding, Genetics and Genomics

Our activities in the Institute are relevant to all of the focus areas identified during strategic planning, but the most obvious is breeding and genetics. In order to remain competitive with similar programs at other institutions, we need to increase the number of tenure-track faculty in the Institute. This would enhance our teaching capabilities and possibly enable expansion of programs to the undergraduate level.

- An immediate deficiency and our highest priority in terms of “nationally prominent faculty in breeding and genetics” is a quantitative geneticist with expertise in genome-wide association studies. This area requires extensive fundamental knowledge of genomics but applying genomic selection has the potential to lead to a paradigm shift in breeding.
- Another deficiency identified is faculty level expertise in metabolomics/proteomics as they relate to crop production and food quality. While this would be a desirable disciplinary area, it is a much lower priority than quantitative genetics.
- In addition to faculty level needs, strong opinions were voiced for filling voids in and retaining support personnel who are deemed essential to maintain continuity of applied breeding programs and to maximize productivity of faculty. Particular needs across programs are for statistics and branch station personnel support.