University of Maryland College Park Combined Research and Extension Plan of Work
2020-2024

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I. Plan Overview

1. Executive Summary

The Strategic Plan for the UMCP states that, "The University of Maryland will be an institution with sweep and impact, where new ideas and ways of thinking make a difference." University of Maryland Extension (UME) and the Maryland Agriculture Experiment Station (MAES), in alignment with the University and the College of Agriculture and Natural Resources, are also focused on sweep, impact, and making a difference through outcomes that benefit Maryland's agro-ecosystem, community, youth and adults. This will be achieved by implementing relevant research and extension programs in the areas of genomics, sustainable (e.g., environmentally and economically) plant and animal production systems, healthy and nutritious food, and development of resilient communities and families. University of Maryland Extension will tackle the big, critically important societal issues and those that are the "most challenging and vexing." To determine what are the most challenging and vexing issues, UME engages stakeholders in dialog, scans the environment for changing conditions, analyzes data available from multiple, trusted sources, and relies upon the expertise and leadership of impact teams made up of field-based educators, researchers, campus-based Extension Specialists, and stakeholders that guide program development and delivery. Coupled with the exemplary research through MAES, UME can achieve measurable impacts that build strong and resilient economies, communities, families, and individuals. The MAES in partnership with UME, coordinates the research arm of the College of Agriculture and Natural Resources (AGNR) and responds to the state and national questions related to the agro-ecosystem at all levels (e.g., genomics, plant and animal systems, community, ecosystem level, etc.) through well thought-out research and extension programs. It fosters science-based basic and applied research that ranges from plant and animal biology/physiology to animal health, food safety, ecosystem health, and economic viability of the agro-ecosystem.

The University of Maryland Extension and MAES have identified six "grand challenges" in this 2020 Plan of Work which represent major programmatic and research initiatives that UM will direct resources to accomplish. These areas are in alignment with the Experiment Station Committee on Organization and Policy (ESCOP)'s grand challenges and with the College of Agriculture and Natural Resources (AGNR)'s strategic initiatives. The six grand challenges and AGNR and UME initiatives are aligned as such:

ESCOP Grand Challenge 1: Sustainability, Competitiveness, & Profitability of Food and Agriculture

AGNR Strategic Initiative: Advance Innovative, Profitable, and Sustainable Agricultural Production Systems

ESCOP Grand Challenge 2: Adapting to & Mitigating the Impacts of Climate Change

AGNR Strategic Initiative: Improve Human, Animal, & Environmental Health

ESCOP Grand Challenge 4: Ensuring a Safe, Secure & Abundant Food Supply

AGNR Strategic Initiative: Establish a Healthy Food System and Ensure Global Food & Nutritional Security

ESCOP Grand Challenge 5: Improving Human Health, Nutrition & Wellness

UME Family & Consumer Sciences Strategic Initiative

ESCOP Grand Challenge 6: Environmental Stewardship & Sustainable Practices

AGNR Strategic Initiatives: Optimize Urban Environments through Design, Green Technology, and Community Engagement & Ensure a Clean and Healthy Chesapeake Bay

ESCOP Grand Challenge 7: Strengthening Individual, Family & Community Resilience

UME 4-H Youth Development Strategic Initiative

2. FTE Estimates

Year	1862 Extension	1862 Research
2020	167.0	115.0
2021	167.0	115.0
2022	170.0	115.0
2023	170.0	115.0
2024	175.0	115.0

II. Merit / Peer Review Process

Extension Faculty Reviews:

The merit review process for UME faculty occurs annually when the faculty member is formally evaluated by the Program Leader (Assistant Director) or Director as appropriate. The AG Program Leader evaluates AG Educators and Specialists; FCS Program Leader, the FCS Educators; the Environment & Natural Resources/Sea Grant Program Leader, the ENR/SG Educators and Specialists; and the 4-H Program Leader, the 4-H Educators and Specialists. Input is obtained from the Area Extension Director (AED). Emphasis is placed on program impacts and the difference made to constituents and the residents of Maryland during the preceding 12 months. Each faculty member is evaluated on individual merit. Documents used for the merit review are approved Individual Extension Plans (IEP), Curriculum Vitae, University of Maryland Extension Reporting Systems (UMERS) reports, self-evaluations, and Teaching Effectiveness Summary. For UMES the reviews are conducted by the respective Department Chair. Extension Specialists housed in academic departments are also reviewed by their respective Program Leaders and input is given to the Department Chair on those faculty members' performance review.

Research Faculty Reviews:

All research faculty have a departmental home, and while there are subtle differences between the departments, they all have a peer-review system (for UMCP) wherein assigned faculty or a faculty committee review the annual performance criteria of each faculty member and assign a merit ranking. The criteria are evaluated, in general, on grantsmanship, publications, the quality of the journal (based on a citation index), research graduate student training, and invited and/or contributed scientific talks and seminars. These are also the same criteria that are used to evaluate promotion and tenure decisions. For UMCP, the peer committee recommendations are reported to the respective department chair who provides his/her input and then provides a final ranking. This process is followed for tenured, tenure-track, and research faculty appointments.

Programmatic Reviews:

Programmatic reviews are conducted at the departmental level at the request of the respective deans, associate deans, and/or department chairs for both UMCP and UMES. They generally range in the five-to-ten year cycle. These reviews are conducted by a panel of external reviewers from prestigious departments, institutions, or federal agencies that have similar departmental or agency diversity in programmatic issues. Individual programs are rarely reviewed independently but within the context of how they fit in the mission of the college and department.

Project Reviews:

All research projects funded through the Maryland Agriculture Experiment Stations (MAES) undergo both internal and external reviews. There is an internal review of federal projects by at least two faculty with knowledge of the discipline, a review by the associate dean for research and associate director for MAES, and USDA. The one exception is that MAES offers an internal competitive grant program for faculty within the college and UMES to afford preliminary research findings that increases competitiveness for these faculty to be successful in competing for external competitive grants such as AFRI and other funding sources. The panel evaluations are a set of standardized criteria such as clarity of objectives, relationship to college's mission, quality of proposed research, deliverables, etc. Currently, this process is conducted for Hatch funding only. Plans are being considered for the same internal process for McIntire-Stennis and Animal Health and Disease funding.

III. Stakeholder Input

1. Actions to Seek

Stakeholder participation is encouraged through the State Extension Advisory Council (SEAC), local Extension Advisory Councils, 4-H Club leaders (volunteers), and various surveys (including needs assessments) targeted to UME clients. On an annual basis, approximately 50-75 surveys are conducted with UME clientele to solicit feedback and encourage participation in UME programs. Surveys are deployed either via paper or electronically, depending on the best strategy to reach the particular clientele. Social media strategies (Facebook, web sites, blogs, Twitter, Instagram) are also now being used to solicit feedback, as are text messages.

Inclusive and diverse mailing lists are maintained by all Extension units. These lists include a variety of ways to reach stakeholders, either via mail, telephone, email, or a web site. Traditional methods (outside of using technologies) are still important strategies for soliciting stakeholder feedback. Extension Educators and Area Extension Directors (AEDs) are visible and accessible in local communities through face-to-face engagement. In addition, UME administrative leaders connect with many other stakeholder groups outside of agriculture, such as with local departments of health and many nonprofit organizations that provide direct service to stakeholders, including public schools, and civic and community groups.

The administrative officers of the Maryland Agriculture Experiment Station (MAES) and University of Maryland Extension (UME) sit on and attend a wide array of committees with the State's agricultural leaders. Such continuous contact with the agricultural leadership, including the Maryland Secretaries of Agriculture, Natural Resources, and Environment, provides additional contact to keep current the research and education issues examined by research and extension in the State's two land-grant universities. The groups include the Maryland Agricultural Commission, the Maryland Grain Producers Association, the Delmarva Poultry Industry, the Southern Maryland Agriculture Commission, the Maryland Association of Soil Conservation Districts, Department of Housing and Community Development, and many other similar groups. Both research and extension faculty also seek stakeholder inputs through their participation and presentation of their projects to stakeholder audiences in state, regional, and national workshops and conferences.

2. Methods to Identify
Input from Maryland's residents will be solicited through the Statewide Extension Advisory Council (SEAC) and local, county-based advisory councils. Program Leaders meet twice a year with SEAC representatives in their specific program area and then again the entire Council. The College of Agriculture and Natural Resources utilizes a Dean's Leadership Council consisting of a broad cross-section of agricultural industry leaders to provide input on major directions for the College's research, teaching and Extension agenda. The Advisory Council meets periodically to discuss rising issues in the State.

The Maryland Agriculture Experiment Station (MAES) has established a "Faculty Research Council" and has formed research teams around vital topics such as sustainable bioenergy, watershed sustainability and climate change, and nutrition and health, food safety and security, genomics and biotechnology, etc. that will provide a platform for scientists to debate the integrated research and extension programs. These groups hold meetings and are central in attracting other faculty to join.

3. Methods to Collect

Face-to-face meetings with stakeholder groups
Web sites, Twitter, Facebook, Instagram, Pinterest, and Linked In social media sites
State and local advisory council meetings
Needs assessments across all program areas' existing and new clientele
Community forums
Focus groups and listening sessions
Strategic planning committees
Volunteer feedback (4-H, Master Gardener, Master Naturalists, etc.)
Involvement in civic organizations

4. How Considered
Stakeholder input will be utilized in a variety of ways to include:

Informing the budget process, particularly at the local level.
Identifying emerging issues through understanding the most critical needs that can be addressed by educational programs.
Re-directing Extension & Research programs by understanding critical needs and defining new priorities.
Hiring faculty and staff that are the best professionals available to affect change in an ever-changing society.
Working in communities to affect positive change and to set priorities for impacting the future.

IV. Critical Issues

1 Food and Agriculture

Description:

ESCOP Grand Challenge 1: Sustainability, Competitiveness, & Profitability of Food and Agriculture

AGNR Strategic Initiative: Advance Innovative, Profitable, and Sustainable Agricultural Production Systems

Increase plant and animal productivity.
Improve and conserve soil health and water quality.
Contribute to the success of agricultural businesses.
Prepare the next generation for careers in agriculture.

Maryland has a strong traditional agriculture base with grain crops, dairy, poultry, vegetables, fruits, and aquaculture. In addition, urban agriculture and the green industry have added to the Maryland economy. Focus areas include production agriculture with an emphasis on soil health and water quality. Business success, profitability, and training the next generation of farmers, researchers and agricultural professionals are also key areas of focus.

Term: Long

Science Emphasis Areas
Agroclimate Science
Environmental Systems
Food Safety
Sustainable Agricultural Production Systems

2 Climate Change
Description:

ESCOP Grand Challenge 2: Adapting to & Mitigating the Impacts of Climate Change

AGNR Strategic Initiative: Advance eco-system health in a changing world, specifically agro-ecosystems affecting the health of the Chesapeake Bay

Design land use management strategies to minimize negative environmental impact.
Develop stormwater management technologies to improve water quality.
Safely apply fertilizer, manure, and other nutrients to protect soil health and water quality.
Evolve in the face of climate change to address sea-level rise and extreme weather.

Create environmentally aware communities and promote increased interest and participation. Focus will be on helping producers plan and make decisions in adapting to changing environments, ensuring economic viability, and translating cutting-edge ecosystem-based research into innovations and economic opportunities offered by climate change mitigation technologies. UME and MAES will develop research and education programs that generate knowledge to develop agricultural systems that maintain high productivity in the face of climate change and variability, and efforts that will ensure the protection and health of the Chesapeake Bay. Extension workshops will educate stakeholders on the indicators and importance of ecosystem health. Workshops will focus on both agricultural and urban ecosystems.

Term: Long

Science Emphasis Areas
Agroclimate Science
Education and Multicultural Alliances
Environmental Systems
Sustainable Agricultural Production Systems

3 Safe, Secure, Abundant Food Supply
Description:

ESCOP Grand Challenge 4: Ensuring a Safe, Secure & Abundant Food Supply

AGNR Strategic Initiative: Establish a Healthy Food System and Ensure Global Food & Nutritional Security

Encourage entrepreneurship in food production, accessibility, availability, and processing.
Improve the health and well-being of populations through sharing knowledge of food production, processing, access, and consumption.
Inform policy based on sound research.

AGNR has the expertise to identify issues pertaining to inequality in food and nutritional security and the ability and creativity to explore innovative solutions. Our research, academics, and Extension programs are educating the next generation of food systems researchers, professionals, and educators. Our wide-ranging research and Extension activities help devise innovative and creative solutions to guarantee a healthy food system in Maryland. Moreover, our existing expertise, partnerships, programs, and geographic location place us in a unique position to assess needs, provide solutions, and have an impact on a global scale. Our healthy food systems initiatives encompass all the processes that are required to produce and deliver food in a socially, economically, and ecologically sustainable manner to promote and protect human health. This is achieved through sustainable production, safe processing, consumer accessibility to nutritious food, and requires knowledge, access, resources, education, innovative technologies, and entrepreneurship.

Term: Long

Science Emphasis Areas
Environmental Systems
Family & Consumer Sciences
Food Safety
Human Nutrition
Sustainable Agricultural Production Systems

4 Human Health, Nutrition, & Wellness
Description:

ESCOP Grand Challenge 5: Improving Human Health, Nutrition & Wellness

AGNR Strategic Initiative: Improve Human, Animal, and Environmental Health

Decrease chronic diseases and diseases transmitted from animals to humans.
Promote and support healthy and livable communities through education.
Investigate links between human, animal, and environmental health.
Analyze environmental and agricultural policy and inform decision makers.

The UME Family & Consumer Sciences is engaged in making sure that all Maryland residents are healthy and economically successful at every stage of life. We accomplish this by working with people to prevent and manage chronic diseases through healthy food and physical activity choices, having basic financial literacy, and safe and healthy places to live, work, play, and learn. Our work is based on the latest research from the University of Maryland to help inform public policy decisions.

Term: Long

Science Emphasis Areas
Education and Multicultural Alliances
Environmental Systems
Family & Consumer Sciences
Food Safety
Human Nutrition
Sustainable Agricultural Production Systems

5 Environmental Stewardship
Description:

ESCOP Grand Challenge 6: Environmental Stewardship & Sustainable Practices

AGNR Strategic Initiatives: Optimize Urban Environments through Design, Green Technology, and Community

Engagement

Create sustainable energy solutions.
Improve understanding of agriculture and environmental awareness in urban areas.
Improve the performance of built environments.
Manage climate change in urban and urban-rural interface

This initiative addresses the improvement of healthy environments, urban resilience in conditions of climate change, social justice, impacts of built environments on community health, maintenance of human dignity, equitable access to nutritious food, and access to formal/informal agricultural and environmental design. The health of non-tidal waters and the Chesapeake Bay depend on improved land use practices.

Term: Long

Science Emphasis Areas
Agroclimate Science
Bioeconomy, Bioenergy, and Bioproducts
Environmental Systems
Sustainable Agricultural Production Systems

6 Family & Community Resiliency
Description:

ESCOP Grand Challenge 7: Strengthening Individual, Family & Community Resilience

AGNR-UME Strategic Initiative: 4-H Youth Development

Maryland 4-H provides safe, welcoming, and affirming environments where young people engage in age-appropriate, meaningful educational programs and experiences that allow them to build positive life skills, supportive adult and peer relationships, and understanding and connections to their communities.

Term: Long

Science Emphasis Areas
Education and Multicultural Alliances
Family & Consumer Sciences
Human Nutrition
Youth Development

7 Renewable Energy Resources
Description:

The development of a secure, and sustainable renewable energy framework that will support the rapidly expanding human population is a critical goal for Maryland and the nation. This will be an essential step in the efforts to wean consumers from an over dependence on fossil fuels and the other challenges associated with their use, such as pollution. Renewable energy sources have the potential to boost the ‘green economy’, thus contributing to job creation, regional development, and long-term economic growth. Biomass is one of the most important sources of renewable energy especially when its production does not compete with food production. Thus the importance of bioenergy and bio-based products in the US is expected to increase over the coming

decade, and fundamental and applied research on biomass sources and conversion technologies for sugars and biofuels and process technologies will pave the path to achieve a more self-reliant bio-based economy.

Term: Long

Science Emphasis Areas
Agroclimate Science
Bioeconomy, Bioenergy, and Bioproducts
Environmental Systems