

# COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

0108 Symons Hall  
Phone: 301-405-2078  
<http://agmr.umd.edu>

**Dean:** Wendy Powers, Ph.D.

**Associate Deans:** Jinhee Kim, Ph.D., Puneet Srivastava, Ph.D., and Joseph Sullivan, Ph.D.

**Assistant Deans:** Sarah Balcom, DVM, Frank J Coale, Ph.D., Carolyn Fernandez, and Jessica Vernon

The College of Agriculture and Natural Resources offers a variety of academic programs that apply science, management, design, and engineering to improve the world in which we live and work. Feeding the world's population, developing scientifically-based land-use practices and policies, understanding animal and plant biology, improving nutrition and its effects on human health, conserving and restoring ecosystems, and profitably managing farms and agribusinesses in harmony with the environment are all vital concerns of the college. Integrating the use and protection of natural resources in the production of food and nursery crops is a challenge facing students.

In addition to course work, undergraduates have opportunities to work closely with faculty in state-of-the-art facilities including those for animal sciences, dietetics, environmental science and technology, landscape architecture, plant sciences, and veterinary medicine. The college also serves as the academic home of the Maryland Campus of the Virginia-Maryland Regional College of Veterinary Medicine. Nearby resources such as the U.S. Department of Agriculture's Beltsville Agricultural National Research Center, the National Institutes of Health, the Food and Drug Administration, the Smithsonian Institution and the National Zoo, Maryland's Departments of Agriculture and Natural Resources, and the Patuxent Wildlife Research Center enhance teaching, research, internship, and career opportunities for students. Field study courses offered in Azerbaijan, Brazil, Belize, Costa Rica, Italy, New Zealand, Peru, Taiwan, and Vietnam expose students to other cultures and environments. Learning opportunities are also strengthened through student involvement in such co-curricular activities as the College Honors Program, AGNR Undergraduate Research Program, career programs, leadership workshops, and student clubs.

## DEPARTMENTS

### Departments and Units

- Agricultural and Resource Economics (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/agricultural-resource-economics/>)
- Animal and Avian Sciences (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/animal-sciences/>)
- Applied Agriculture Certificate (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/applied-agriculture/>)
- Environmental Science and Policy (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-policy/>)

- Environmental Science and Technology (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-technology/>)
- International Agriculture and Natural Resources Certificate (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/international-agriculture-natural-resources-certificate/>)
- Nutrition and Food Science (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/nutrition-food-science/>)
- Plant Science and Landscape Architecture (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/>)

## ACADEMIC PROGRAMS

### Majors

- Agricultural and Resource Economics Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/agricultural-resource-economics/agricultural-resource-economics-major/>)
- Agricultural Science and Technology Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/agricultural-science-technology-major/>)
- Animal Sciences Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/animal-sciences/animal-sciences-major/>)
- Environmental Science and Policy Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-policy/environmental-science-policy-major/>)
- Environmental Science and Technology Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-technology/environmental-science-technology-major/>)
- Fermentation Science Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/nutrition-food-science/fermentation-science-major/>)
- Landscape Architecture Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/landscape-architecture-major/>)
- Nutrition and Food Science Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/nutrition-food-science/nutrition-food-science-major/>)
- Plant Sciences Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/plant-sciences-major/>)

### Minors

- Agricultural Science and Technology Minor (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/agricultural-science-technology-minor/>)
- Chesapeake Bay Watersheds and Water Resources Minor (ENST) (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/>)

agriculture-natural-resources/environmental-science-technology/chesapeake-bay-watersheds-water-resources-minor/)

- Global Poverty Minor (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/agricultural-resource-economics/global-poverty-minor/>)
- Landscape Management Minor (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/plant-sciences-landscape-architecture/landscape-management-minor/>)
- Soil Science Minor (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-technology/soil-science-minor/>)
- Sustainability Studies Minor (AGNR) (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-policy/sustainability-studies-minor/>)

## Certificates

- Applied Agriculture Certificate (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/applied-agriculture/>)
- International Agriculture and Natural Resources Certificate (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/international-agriculture-natural-resources-certificate/>)

## ADVISING

Each student in the college is assigned a faculty advisor to assist in selecting courses, accessing academic enrichment opportunities, and making strategic career decisions. Advisors normally work with a limited number of students and are able to give individual guidance. Both freshmen entering with a definite choice of curriculum and transfer students are assigned to departmental advisors for counsel and planning of all academic programs as soon as possible. Students have access to additional advising through their home department's undergraduate program office and through the college's student services office. AGNR Peer Mentors, academically talented and university-engaged upperclassmen, provide an additional advising resource for students in the college.

Specifics of advisor assignment are available in the undergraduate office of each department.

## OPPORTUNITIES

### Living-Learning Programs

The college sponsors, through its Environmental Science and Policy Program, the Environment, Technology and Economy curriculum in College Park Scholars. Admission to College Park Scholars is selective and by invitation only. For further information, see the College Park Scholars Program (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/undergraduate-studies/#programstext>).

### Specialized Academic Programs

The Institute of Applied Agriculture offers 60-credit certificate programs designed primarily for professional development. Options offered include Agribusiness Management, Equine Business Management, Golf Course Management, Golf Course Construction Management, Landscape Management, Ornamental Horticulture, Sports Turf Management, Sustainable Agriculture and Turfgrass Management. Some two-year

program students continue on in regular four-year programs in the college and several of the college's majors allow limited use of Institute courses in their programs.

### Pre-Veterinary Medicine

1409 Animal Sciences Center  
Phone: 301-405-6495  
kpmayo@umd.edu  
<http://ansc.umd.edu/undergraduate/vet-school-faq/>

The College of Agriculture and Natural Resources is the most popular choice at UMD for students who wish to pursue veterinary medicine. Two excellent pre-veterinary options in the Animal and Avian Sciences major are:

1. The Sciences/Pre-Professional option- a four year traditional academic path that includes typically required courses for veterinary school. Students in this option typically apply to veterinary school during the senior year and matriculate after earning the Animal & Avian Science B.S. degree.
2. The Combined Agricultural and Veterinary Medicine option- a three year accelerated academic path that includes typically required courses for veterinary school and the opportunity for high achieving students to apply to veterinary school admission during their junior year. If a student matriculates in an accredited college of veterinary medicine through this route, they may apply the successful completion of the first 30 hours of their professional training towards the completion of their baccalaureate degree. See the Undergraduate Catalog entry for Animal Sciences for more details.

University of Maryland students in any major may prepare for admission to veterinary school by completing the basic science and other courses required by veterinary colleges. Students should consult catalogs from the veterinary schools to which they are interested in applying to determine the specific courses required by each which can be found through the American Association of Veterinary Medical Colleges (<http://aavmc.org>).

Advising for pre-veterinary students occurs at two levels: initially, the pre-veterinary advisor in the Department of Animal and Avian Sciences (1409 Animal Sciences Center; 301-405-6495 or kpmayo@umd.edu), will advise students, regardless of major, about preparing for veterinary school. During the freshmen and sophomore years, advising is done through spring group advising meetings which cover topics such as coursework, grades, finances, extra-curricular activities, gaining animal and veterinary experience, and securing academic and professional references. For students in the process of applying to veterinary school, our preveterinary advisors are available for email and one-on-one consultations. As students progress and establish academic credentials, they should also use the advising resources of the Virginia-Maryland Regional College of Veterinary Medicine, 8075 Greenmead Drive, University of Maryland, College Park, MD 20742-3711.

There is also an active pre-veterinary society (<http://agnr.umd.edu/student-opportunities/clubs-and-organizations/pre-vet-society/>) on campus that provides its members with regular speakers, animal volunteering opportunities, networking, and comradery. Pre-veterinary students are strongly encouraged to join.

Pre-veterinary students are asked to read our Pre-veterinary advising guide (<http://ansc.umd.edu/undergraduate/vet-school-faq/>), as it

answers many common questions about preparing for and applying to veterinary schools.

## Applied Agriculture Certificate

### Institute of Applied Agriculture (60-credit Certificate in Applied Agriculture)

College of Agriculture and Natural Resources  
2123 Jull Hall  
Phone: 301-405-4685  
iaa-request@umd.edu  
<http://iaa.umd.edu>

**Director:** Heather McHale

Through the Institute of Applied Agriculture (IAA) students earn a UMD Certificate in Applied Agriculture. Students may select one of the following concentrations: Agricultural Business Management, Agricultural Leadership and Communication, General Turfgrass Management, Golf Course Management, Landscape Management, Ornamental Horticulture, Sports Turf Management, and Sustainable Agriculture. The IAA provides students with the entrepreneurial and technical skills needed to manage and lead successful agricultural enterprises.

The IAA has a separate admission policy which can be found on its website. Upon completion of the program, most students accept job offers. However, students are welcome to transfer to the University of Maryland, College Park; University of Maryland University College; or other schools.

**Agriculture Forward at the University of Maryland** (Ag Forward) is an accelerated program for first-time university students who are interested in earning dual credentials from the University of Maryland, College Park. Students begin their studies in the Institute of Applied Agriculture (IAA). After successfully completing 30 credits at the IAA with a GPA of at least 3.0., students are eligible to transfer into a bachelor's degree program within the College of Agriculture and Natural Resources. Students continue to earn their Certificate in Applied Agriculture while working on their bachelor's degree.

## College Honors Program

Students may apply for admission to the College Honors program after completing 60 credits with a minimum 3.2 GPA (both in-major and cumulative) in a program within the college. Honors students work with a faculty mentor and must take at least 12 credits of honors courses including a senior thesis. Interested students should contact their faculty advisor and consult the AGNR website for further information (<https://agnr.umd.edu/undergraduate/current-students/academic-honors/>).

## Approved Student Societies and Professional Organizations

Student participation in professional societies, clubs, and interest groups is extensive in the college, and students find opportunity for varied expression and growth in the following organizations:

AGNR Peer Mentors; AGNR Student Ambassadors; AGNR Student Council; Alpha Zeta; Alpha Gamma Rho; Animal and Avian Sciences Graduate Student Association; Block and Bridle; Collegiate 4-H; ENSPIRE, Food and Nutrition Club; Horticulture Club, Landscape Architecture Student Association; Natural Resources Management Society; Sigma Alpha; UM Equestrian Club; UM Food Science Club; UM Student Chapter

of Golf Course Superintendents Association of America; Minorities in Agriculture and Natural Resources and Related Sciences (MANRRS) and Veterinary Science Club.

## Student Engagement and Service Units

### Virginia-Maryland Regional College of Veterinary Medicine, Maryland Campus

College of Agriculture and Natural Resources  
1202 Gudelsky Veterinary Center  
Phone: 301-314-6820  
<http://vetmed.umd.edu>

**Associate Director, Center for Public and Corporate Veterinary Medicine:**  
Nathaniel Tablante, DVM

The Virginia-Maryland Regional College of Veterinary Medicine is operated by the University of Maryland and the Virginia Polytechnic Institute and State University. Each year, 30 Maryland and 50 Virginia residents comprise the entering class of a four-year program leading to a Doctor of Veterinary Medicine (DVM).

The first three years are given at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. The final year of instruction is given at several locations, including the University of Maryland, College Park.

A student desiring admission to the college must complete the pre-veterinary requirements and apply for admission to the professional curriculum. Admission to this program is competitive, and open to all Maryland residents. All Maryland residents' applications are processed at the College of Veterinary Medicine, Maryland Campus, University of Maryland, College Park.

## Financial Assistance

A number of scholarships are available for students entering or already enrolled in the College of Agriculture and Natural Resources. These include:

AGNR Alumni Association Scholarship; AGNR General Scholarship; Arthur M. Ahalt Memorial Scholarship; Attorney General's Agricultural and Natural Resources Scholarship; Professor John Axley Memorial Scholarship; Eileen Barnett Scholarship; Beltsville Garden Club Scholarship; Bruce and Donna Berlage Scholarship; Chester F. Bletch Endowment; Bowie-Crofton Garden Club Scholarship; Frank D. Brown Memorial Scholarship; Joseph Byrd Foundation Scholarship; Jonas and Joan Cash Student Award Scholarship; Chapel Valley Landscape Honorary Scholarship; George Earle Cook, Jr. Scholarship; Ernest T. Cullen Memorial Scholarship; Jaime Dannemann Scholarship; R.F. Davis Memorial Scholarship; Jerry V. DeBarthe Memorial Scholarship; William R. DeLauder Scholarship; Frank J. Duda Turfgrass Scholarship; Mylo S. Downey Memorial Scholarship; Equine Studies Scholarship; Explore AGNR Scholarship; James R. Ferguson Memorial Scholarship; Kenneth S. Fowler Memorial Endowed Scholarship; Thomas A. Fretz Agriculture and Natural Resources Scholarship; James & Sarah Goddard Memorial Scholarship; William D. Godwin Endowed Scholarship; Golf Course Builders of America Association Foundation Scholarship; Manasses J. & Susanna Jarboe Grove Scholarship; Tom Hartsock Animal Management Scholarship; H. Palmer Hopkins Scholarship established by Charles W. Coale, Jr. & Ellen Kirby Coale; Charles & Judy Iager Scholarship; Land Grant Scholarship; James & Gertrude Leamer Scholarship; Donald Leishear International Travel Scholarship; Lee Majeskie Dairy Youth Scholarship; Maryland Greenhouse Growers Association Scholarship; James R. & Patricia M. Miller Outstanding Senior Scholarship; John

and Marjorie Moore International Agriculture & Natural Resources Student Travel Scholarship; James and Dessie Moxley Scholarship; Paul R. Poffenberger Memorial Scholarship; Jennifer Russo Memorial Scholarship; Ross & Pauline Smith Scholarship; J. Herbert Snyder Educational Scholarship; Southern States Cooperative Scholarship; Hiram I. Stine Memorial Scholarship; T.B. Symons Memorial Scholarship; TIC Gums Scholarship; Vansville Farmers Club Scholarship; A.V. Vierheller Scholarship; Siegfried Weisberger, Jr. Memorial Scholarship; Theo & Georgianna Miles Weiss Memorial Scholarship; and the William R. Winslow Scholarship.

The College is privileged to offer additional support in the form of interest-free loans through the Catherine Brinkley Loan Fund which are available to students who are residents of Maryland and progressing in programs within the College of Agriculture and Natural Resources.

## Awards

The Agriculture and Natural Resources Alumni Chapter provides recognition each year for the Outstanding Senior in the two-year and four-year programs.

## Departments and Centers

Undergraduate credit instruction is offered by the Departments of Animal and Avian Sciences (ANSC), Agricultural and Resource Economics (AREC), Environmental Science and Technology (ENST), Nutrition and Food Science (NFSC), and Plant Science and Landscape Architecture (PSLA). Additionally, the Environmental Science and Policy (ENSP) major is based and administered within the College of Agriculture and Natural Resources; it offers specializations advised within this college as well the colleges of Behavioral and Social Sciences, Chemical, Mathematical and Natural Sciences. Also, the Agricultural Science and Technology major within PSLA offers students the opportunity to double major in Agriculture Education. Additional courses are provided through the 2-year certificate program in the Institute of Applied Agriculture.

## Special Advantages and Facilities

Educational opportunities in the College of Agriculture and Natural Resources are enhanced by the proximity of several research units of the federal government. Teaching and research activities in the college are conducted with the cooperation of scientists and professional people in government positions. Of particular interest are the National Agricultural Research Center at Beltsville, the National Agricultural Library, the National Arboretum, and the Food and Drug Administration.

Instruction in the basic biological and social sciences, and landscape design is conducted in modern, technologically-equipped classrooms and laboratories. The application of basic principles to practical situations is demonstrated for the student in numerous ways. In addition to on-campus facilities, the college operates several education and research facilities throughout Maryland. Horticultural and agronomic crops, turf, beef, horses, dairy cattle, and poultry are maintained under practical and research conditions and may be used by our students. These centers, as well as other selected locations on and off campus also serve as living laboratories for environmental studies.

## Research Units

### Maryland Agricultural Experiment Station

The Maryland Agricultural Experiment Station (MAES) supports research conducted primarily by 120 faculty scientists located within the College of Agriculture and Natural Resources. Faculty use state-

of-the-art facilities such as a new Research Greenhouse Complex and Environmental Simulator, as well as 10 off-campus research locations, for research in the science, business, policy, and practice of agriculture. MAES supports research that benefits consumers and producers alike; for example, our significant focus on the environment protects valuable natural resources such as the Chesapeake Bay. Undergraduate students also benefit from mentoring by MAES-supported faculty and instructional use of MAES facilities statewide.

### University of Maryland Extension

The University of Maryland Extension educates citizens in the application of practical, research-based knowledge to critical issues in agricultural and agribusiness including aquaculture; natural resources and the environment; human development, nutrition, diet, and health; youth development and 4-H; and family and community leadership. The statewide program includes more than 180 faculty and support staff located in 23 counties, the City of Baltimore, four regional centers, and the University of Maryland's College Park and Eastern Shore campuses. In addition, more than 15,000 volunteers and citizens in Maryland give generously of their time and energy.

### Center for Food Safety and Security Systems (CFS<sup>3</sup>)

The **Center for Food Safety and Security Systems (CFS<sup>3</sup>)** provides world-class research, education and outreach on issues related to food and water defense, safety and protection. Housed in the Department of Nutrition and Food Science, this new center will provide additional opportunity for students to become involved in issues of significance for homeland security. For information on CFS<sup>3</sup>, please see <http://cfs3.umd.edu> or call 301-405-0773.

### Harry R. Hughes Center for Agro-Ecology, Inc.

The **Harry R. Hughes Center for Agro-Ecology, Inc.** is a private, non-profit 501 (c) 3 organization affiliated with the University of Maryland. The Center brings together diverse interests from the agricultural, forestry, and environmental communities for the purpose of retaining Maryland's working landscapes and the industries they support while protecting and improving the health of the Chesapeake Bay and its tributaries. For further information see <http://agnr.umd.edu/research/research-and-education-centers-locations/harry-r-hughes-center-agro-ecology/> or call at 410-827-6202.

### Joint Institute for Food Safety and Nutrition

The **Joint Institute For Food Safety and Nutrition (JIFSAN)**, established between the US FDA and the University of Maryland in 1996, is a jointly administered research and education program. For information on JIFSAN, see <http://jifsan.umd.edu> or call 301-405-8382.

### Northeastern Regional Aquaculture Center

The **Northeastern Regional Aquaculture Center (NRAC)** is one of five Regional Aquaculture Centers established by the U.S. Congress for the United States. Funded by the USDA, and representing 12 states and the District of Columbia, NRAC develops and sponsors cooperative regional research and extension projects in support of the aquaculture industry in the northeastern United States. For further information see <http://agnr.umd.edu/research/research-and-education-centers-locations/northeastern-regional-aquaculture-center/> or call 301-405-6085.