

# Davis College of Agriculture, Natural Resources, and Design

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The Davis College offers students career paths that are exciting and rewarding. Through our diverse academic programs, students and faculty team up to discover agricultural practices that increase yields while improving the environment, producing bio-based energy alternatives, creating more nutritious and flavorful foods, restoring degraded ecosystems, conserving forests and natural resources, and designing both built and natural environments. Graduates of the Davis College pursue scientific and management careers that foster the wise management, utilization, and conservation of our soils, water, forests, wildlife, domestic animals, food, fiber, and living spaces, as we work toward our vision of a world sustainably fed, clothed, and sheltered.

The Davis College helps students adjust to their major and get to know their fellow students and professors. Distinguished faculty share their knowledge through hands-on learning in the field, classroom, and lab, and through academic advising. In the Davis College, we are committed to helping students succeed through a strong academic support system. Whether students are interested in animals, design, the environment, biosciences, or food and health, the Davis College is the perfect place for academic and personal growth.

## Majors

At the WVU Davis College of Agriculture, Natural Resources and Design, we pride ourselves on our small-school environment and high-quality undergraduate education – while offering all of the resources of a large university.

We're more than a college – we're a community. At the Davis College, we'll know your name (and your major – and probably your hometown, too). You'll get a personalized education with the quality and opportunities of a top research university.

## SCHOOL OF AGRICULTURE AND FOOD

- Animal and Nutritional Sciences
- Environmental Microbiology
- Biochemistry
- Environmental, Soil and Water Sciences
- Horticulture
- Human Nutrition and Foods
- Sustainable Food and Farming

## SCHOOL OF DESIGN AND COMMUNITY DEVELOPMENT

- Agricultural and Extension Education
- Design Studies
- Environmental and Community Planning
- Fashion, Dress and Merchandising
- Interior Architecture
- Landscape Architecture
- Sustainable Design and Development

## SCHOOL OF NATURAL RESOURCES

- Agribusiness Management
- Energy Land Management
- Environmental and Energy Resources Management
- Environmental and Natural Resource Economics
- Forest Resources Management
- Recreation, Parks, and Tourism Resources
- Wildlife and Fisheries Resources
- Wood Science and Technology

## About the College

As WVU's oldest academic unit, the Davis College is central to the University's mission to advance the people and places of West Virginia and beyond. The College offers a wide range of undergraduate and graduate degree programs that cover life sciences, applied and basic research, and economic

and social relationships among people as they live and work in a wide variety of settings. With an extensive research portfolio in areas related to food, water quality, natural resource and landscape management, the College is a leader in making discoveries that change lives.

The Davis College is named for two Morgantown sisters, Gladys Gwendolyn Davis and Vivian Davis-Michael, in recognition of their \$18.4 million gift. The College offers 22 undergraduate majors, as well as 18 masters programs and seven doctoral degree programs. It maintains thousands of acres of farmland and forests throughout the state which provide opportunities for learning beyond the classroom, research and facilitate valuable community service.

## Accredited Programs

The following programs within the College are accredited by nationally or internationally recognized organizations:

- Agricultural and Extension Education (National Council for Accreditation of Teacher Education)
- Biochemistry (American Chemical Society and American Society for Biochemistry and Molecular Biology)
- Forest Resources Management (Society of American Foresters)
- Human Nutrition & Foods (Accreditation Council for Education in Nutrition and Dietetics)
- Interior Architecture (National Association of Schools of Art and Design)
- Landscape Architecture (Society of Landscape Architecture)
- Recreation, Parks and Tourism Resources (Society of American Foresters)
- Wood Science and Technology (Society of Wood Science and Technology)

## Honoraries and Student Organizations

You're encouraged to become active in honoraries and student professional associations and organizations. Within the College, outstanding students may be chosen for membership in Alpha Tau Alpha, Gamma Sigma Delta, Phi Upsilon Omicron or Alpha Zeta. There are over twenty student clubs and organizations that you can get involved with.

## Multidisciplinary Studies Major

The Davis College offers a Multidisciplinary Studies major that requires completion of three minors – two from the Davis College and one in another WVU college. This major provides flexibility in defining an academic program that fits your career goals.

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## ADMINISTRATION

### DEAN

- Darrell Donahue - Ph.D (North Carolina State University)  
Director, West Virginia Agricultural and Forestry Experiment Station

### ASSOCIATE DEAN OF ACADEMIC AFFAIRS

- Kimberly M. Barnes - Ph.D. (University of Nebraska-Lincoln)  
Academic Affairs

### ASSOCIATE DEAN FOR RESEARCH AND OUTREACH

- Matthew Wilson - Ph.D. (Iowa State University)  
Associate Director, West Virginia Agricultural and Forestry Experiment Station

### SCHOOL/DIVISION DIRECTORS

- Alan Collins - Ph.D. (Oregon State University)  
Division of Resource Economics and Management
- Sven Verlinden - Ph.D. (Perdue University)  
Division of Plant and Soil Science
- Robert Burns - Ph.D. (Pennsylvania State University)  
Division of Forestry and Natural Resources
- Christopher Ashwell - Ph.D.  
Division of Animal and Nutritional Science
- Peter Butler - MLA (Iowa State University)  
School of Design and Community Development

## Degree Designation Learning Outcomes

### BACHELOR OF SCIENCE (BS)

Upon graduation, students will have attained the following knowledge bases, and career competency skills:

- A working knowledge of the basic sciences and scientific methods.
- A working knowledge of their discipline.
- The ability to write and present scholarly information.
- The ability to integrate knowledge and possess problem solving/critical thinking skills necessary for professional and social development and life-long learning and civic engagement.

### BACHELOR OF SCIENCE IN AGRICULTURE (BSAGR)

Upon graduation, students will have attained the following discipline knowledge bases, and career competency skills:

- Graduates will acquire a high level of competency in the basic sciences required for disciplinary competency.
- Graduate will integrate basic knowledge and managerial skills related to the animal, plant, nutritional and food sciences disciplines.
- Graduates will acquire sufficient written and oral communication skills, problem solving and critical thinking skills to effectively impact lifelong societal and professional developments critical to their respective discipline of interest.
- Graduates will attain depth of knowledge relative to the scope of subfields of the animal, food and nutritional sciences disciplines.

### BACHELOR OF SCIENCE IN FORESTRY (BSF)

Upon graduation, students will have attained the following knowledge bases and career competency skills:

- Ability in preparing and delivering effective oral presentations.
- Proficiency in English composition, technical/business writing, and writing for non-professional audiences.
- Ability to read with comprehension a variety of documents, and critically evaluate opposing viewpoints.
- Understanding of the components, patterns, and processes of biological and ecological systems across spatial and temporal scales.
- Understanding of molecular biology, cells, organisms, populations, species, communities, and ecosystems.
- Understanding of physical and chemical properties, measurements, structure, and states of matter.
- Ability to understand and use the basic approaches and applications of mathematics and statistics for analysis and problem solving.
- Understanding of, and an ability to address, moral and ethical questions and an ability to use critical reasoning skills.
- Understanding of human behavior and social and economic structures, processes, and institutions of importance across a broad range of societies.
- Understanding of the diverse dimensions of the human experience and culture.
- Understanding of taxonomy and ability to identify forest and other tree species, their distribution, and associated vegetation and wildlife.
- Understanding of soil properties and processes, hydrology, water quality, and watershed functions.
- Understanding of ecological concepts and principles including the structure and function of ecosystems, plant and animal communities, competition, diversity, population dynamics, succession, disturbance, and nutrient cycling.
- Ability to make ecosystem, forest, and stand assessments.
- Understanding of tree physiology and the effects of climate, fire, pollutants, moisture, nutrients, genetics, insects and diseases on tree and forest health and productivity.
- Ability to identify and measure land areas and conduct spatial analysis.
- Ability to design and implement comprehensive inventories that meet specific objectives using appropriate sampling methods and units of measurement.
- Ability to analyze inventory data and project future forest, stand, and tree conditions.
- Ability to develop and apply silvicultural prescriptions appropriate to management objectives, including methods of establishing and influencing the composition, growth, and quality of forests, and understand the impacts of those prescriptions.
- Ability to analyze the economic, environmental, and social consequences of forest resource management strategies and decisions.
- Ability to develop management plans with specific multiple objectives and constraints.
- Understanding of the valuation procedures, market forces, processing systems, transportation and harvesting activities that translate human demands for timber-based and other consumable forest products into the availability of those products.
- Understanding of the valuation procedures, market, and non-market forces that avail humans the opportunities to enjoy non-consumptive products and services of forests.
- Understanding of the administration, ownership, and organization of forest management enterprises.
- Understanding of forest policy and the processes by which it is developed.
- Understanding of how federal, state, and local laws and regulations govern the practice of forestry.

- Understanding of professional ethics, including the Society of American Foresters Code, and recognition of the responsibility to adhere to ethical standards in forestry decision making on behalf of clients and the public.
- Ability to understand the integration of technical, financial, human resources, and legal aspects of public and private enterprises.

## **BACHELOR OF SCIENCE IN LANDSCAPE ARCHITECTURE (BSLA)**

Upon graduation students will have attained the following knowledge bases and career competency skills.

- The competencies required for entry level positions in the profession of landscape architecture.
- Critical and creative design thinking and the ability to understand, apply and communicate the subject matter of the professional curriculum
- Application of a design process including project definition, problem identification, information collection, analysis, synthesis, conceptualization and implementation.

## **BACHELOR OF SCIENCE IN RECREATION (BSR)**

Upon graduation, students will have attained the following knowledge bases and career competency skills:

- Ability in preparing, and delivering effective oral presentations.
- A proficiency in English composition, technical/business writing, and writing for non-professional audiences.
- Ability to read with comprehension a variety of documents, and critically evaluate opposing viewpoints.
- Understanding of the components, patterns, and processes of biological and ecological systems across spatial and temporal scales,
- Understanding of molecular biology, cells, organisms, populations, species, communities, and ecosystems.
- Understanding of physical and chemical properties, measurements, structure, and states of matter.
- Ability to understand and use the basic approaches and applications of mathematics and statistics for analysis and problem solving.
- Understanding of, and an ability to address, moral and ethical questions and an ability to use critical reasoning skills.
- Understanding of human behavior and social and economic structures, processes, and institutions of importance across a broad range of societies.
- Understanding of the diverse dimensions of the human experience and culture.
- Knowledge of the elements of botany, zoology, entomology, plant pathology, plant physiology, and genetics essential to an understanding of higher-order ecological processes.
- Understanding of taxonomy and systematics and ability to identify dominant and/or ecologically significant components of the flora and fauna of ecosystems at regional to continental scales.
- Knowledge of the important life history characteristics of dominant and special-concern species.
- Knowledge of soil properties and processes, hydrology, water quality, and watershed functions.
- Understanding of ecological concepts and principles including the structure and function of ecosystems, plant and animal communities, competition, diversity, population dynamics, succession, disturbance, and nutrient cycling.
- Understanding of the effects of climate, fire, pollutants, moisture, nutrients, insects and diseases, and other environmental factors on ecosystem health and functioning at local and landscape scales.
- Ability to identify, measure, and map land areas and conduct spatial analyses.
- Ability to design and implement accurate inventories and assessments of dominant or critical ecosystem components and services, ecosystem properties, and indicators of ecosystem health, including trees and other vegetation, vertebrate fauna, biodiversity, soil and water resources, timber, and recreational opportunities.
- Ability to summarize and statistically analyze inventory and assessment data, evaluate the status of important ecosystem components, describe and interpret interactions and relationships, and project future ecosystem conditions.
- Understanding of the valuation procedures, including market and nonmarket forces that apply to ecosystem goods and services such as timber, water, recreational opportunities, carbon and nutrient cycling, and plant and animal biodiversity.
- Ability to explain the relationships between demand, costs of production, and availability of those goods and services.
- Ability to describe procedures for measuring stakeholder values and managing conflicts in the evaluation and establishment of management objectives.
- Ability to evaluate and understand the economic, ecological, and social trade-offs of alternative land uses and ecosystem management decisions at local, regional, and global scales.
- Knowledge and understanding of environmental policy as applied to ecosystems and the processes by which it is developed.
- Ability to develop and apply prescriptions for manipulating the composition, structure, and function of ecosystems to achieve management objectives, and understand the impacts of those prescriptions at local and landscape scales.
- Ability to identify and control or mitigate specific threats to ecosystems such as insects, diseases, fire, pollutant stressors, and invasive plants or animals.
- Knowledge of the methods and procedures unique to the production of ecosystem goods and services such as timber, recreation, water, and wildlife populations.
- Ability to describe the process of adaptive management and its application to the management of ecosystems.

- Understanding of how federal, state, and local laws and regulations apply to management practice.
- Ability to develop management plans with specific objectives and constraints that are responsive to ownership or stakeholder goals and demonstrate clear and feasible linkages between current condition and desired future condition.
- Understanding of professional ethics, including the Society of American Foresters Code, and recognition of the responsibility to adhere to ethical standards in the practice of ecosystem management on behalf of clients and the public.
- Ability to integrate the knowledge, understanding, and skills from prior coursework in the development of collaborative solutions to realistic management problems.

## BACHELOR OF MULTIDISCIPLINARY STUDIES (BMDS)

Upon graduation, students will have attained the following knowledge bases and career competency skills:

- Knowledge of and aptitude with principles, practices, facts, concepts, theories and tools in three minor areas
- The ability to write and present information
- The ability to analyze problems from different perspectives, recognize uncertainties, propose options, construct predictions, and make sound decisions using appropriate information resources and analytical tools

## Davis College of Agriculture, Natural Resources, and Design Minors

There are a wide variety of approved minors in the Davis College. Minors can be combined with major fields to broaden or further focus the student's academic studies. In addition, three minors can be combined in a Multidisciplinary Studies (MDS) major. You can earn an MDS degree in the Davis College or in other WVU colleges.

### SCHOOL OF AGRICULTURE AND FOOD

- Applied and Environmental Microbiology ([http://catalog.wvu.edu/undergraduate/minors/applied\\_and\\_environmental\\_microbiology/](http://catalog.wvu.edu/undergraduate/minors/applied_and_environmental_microbiology/))
- Environmental Protection ([http://catalog.wvu.edu/undergraduate/minors/environmental\\_protection/](http://catalog.wvu.edu/undergraduate/minors/environmental_protection/))
- Equine Studies ([http://catalog.wvu.edu/undergraduate/minors/equine\\_management/](http://catalog.wvu.edu/undergraduate/minors/equine_management/))
- Family and Consumer Science ([http://catalog.wvu.edu/undergraduate/minors/family\\_and\\_consumer\\_sciences/](http://catalog.wvu.edu/undergraduate/minors/family_and_consumer_sciences/))
- Food Science and Technology ([http://catalog.wvu.edu/undergraduate/minors/food\\_science\\_and\\_technology/](http://catalog.wvu.edu/undergraduate/minors/food_science_and_technology/))
- Food Service Production ([http://catalog.wvu.edu/undergraduate/minors/food\\_service\\_production/](http://catalog.wvu.edu/undergraduate/minors/food_service_production/))
- Horticulture (<http://catalog.wvu.edu/undergraduate/minors/horticulture/>)
- Nutrition and Food Studies (<http://catalog.wvu.edu/undergraduate/minors/nutritionandfoodstudies/>)
- Pest Management ([http://catalog.wvu.edu/undergraduate/minors/pest\\_management/](http://catalog.wvu.edu/undergraduate/minors/pest_management/))
- Soil Science ([http://catalog.wvu.edu/undergraduate/minors/soil\\_science/](http://catalog.wvu.edu/undergraduate/minors/soil_science/))

### SCHOOL OF DESIGN AND COMMUNITY DEVELOPMENT

- Design Thinking (<http://catalog.wvu.edu/undergraduate/minors/designthinking/>)
- Fashion Merchandising ([http://catalog.wvu.edu/undergraduate/minors/fashion\\_merchandising/](http://catalog.wvu.edu/undergraduate/minors/fashion_merchandising/))
- Landscape Studies ([http://catalog.wvu.edu/undergraduate/minors/landscape\\_studies/](http://catalog.wvu.edu/undergraduate/minors/landscape_studies/))
- Rural Community Development ([http://catalog.wvu.edu/undergraduate/minors/rural\\_community\\_development/](http://catalog.wvu.edu/undergraduate/minors/rural_community_development/))
- Sustainable Design ([http://catalog.wvu.edu/undergraduate/minors/sustainable\\_design/](http://catalog.wvu.edu/undergraduate/minors/sustainable_design/))
- Sustainable Trails Development ([http://catalog.wvu.edu/undergraduate/minors/sustainable\\_trails\\_dev/](http://catalog.wvu.edu/undergraduate/minors/sustainable_trails_dev/))

### SCHOOL OF NATURAL RESOURCES

- Agribusiness Management ([http://catalog.wvu.edu/undergraduate/minors/agribusiness\\_management/](http://catalog.wvu.edu/undergraduate/minors/agribusiness_management/))
- Agriculture and Natural Resources Law (<http://catalog.wvu.edu/undergraduate/minors/agriculturalandnaturalresourceslaw/>)
- Arboriculture (<http://catalog.wvu.edu/undergraduate/minors/aboriculture/>)
- Conservation Ecology ([http://catalog.wvu.edu/undergraduate/minors/conservation\\_ecology/](http://catalog.wvu.edu/undergraduate/minors/conservation_ecology/))
- Environmental Economics ([http://catalog.wvu.edu/undergraduate/minors/environmental\\_economics/](http://catalog.wvu.edu/undergraduate/minors/environmental_economics/))
- Forestry Resource Management ([http://catalog.wvu.edu/undergraduate/minors/forest\\_resource\\_management/](http://catalog.wvu.edu/undergraduate/minors/forest_resource_management/))
- Land Reclamation ([http://catalog.wvu.edu/undergraduate/minors/land\\_reclamation/](http://catalog.wvu.edu/undergraduate/minors/land_reclamation/))
- Recreation, Parks, and Tourism Resources ([http://catalog.wvu.edu/undergraduate/minors/recreation\\_parks\\_and\\_toursim\\_resources/](http://catalog.wvu.edu/undergraduate/minors/recreation_parks_and_toursim_resources/))
- Sustainable Low-Rise Residential Construction (<http://catalog.wvu.edu/undergraduate/minors/sustainablelowriseresidentialconstruction/>)
- Wildlife and Fisheries Resources ([http://catalog.wvu.edu/undergraduate/minors/wildlife\\_\\_fisheries\\_resources\\_management/](http://catalog.wvu.edu/undergraduate/minors/wildlife__fisheries_resources_management/))
- Wood Science and Technology ([http://catalog.wvu.edu/undergraduate/minors/wood\\_science\\_and\\_technology/](http://catalog.wvu.edu/undergraduate/minors/wood_science_and_technology/))

## **Accreditation**

Agricultural & Extension Education- Agricultural Teacher Education within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the National Council on Accreditation of Teacher Education.

Biochemistry, an intercollegiate program shared with the Eberly College of Arts and Sciences, has accreditation from both the American Chemical Society (ACS Track) and the American Society for Biochemistry and Molecular Biology (ASBMB Track)

Forest Resources Management within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the Society of American Foresters.

Human Nutrition & Foods within the Davis College of Agriculture, Natural Resources and Design has accreditation through the Accreditation Council for Education in Nutrition and Dietetics.

Interior Architecture within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the National Association of Schools of Arts and Design.

Landscape Architecture within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the Landscape Architecture Accreditation Board of the American Society of Landscape Architecture.

Recreation, Parks & Tourism Resources within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the Society of American Foresters.

Wood Science & Technology within the Davis College of Agriculture, Natural Resources, and Design has specialized accreditation through the Society of Wood & Technology.