

FOCUS

Teaching, Research and Outreach in
the Division of Agriculture, Forestry
and Veterinary Medicine

Diversity Draws Students to Division's Academic Programs

Mississippi State University is noted for its academic programs in the Division of Agriculture, Forestry and Veterinary Medicine, but those programs go far beyond row crops, livestock and tree farms.

Programs in the division range from conservation law enforcement to apparels, textiles and merchandizing. While there are plenty of degree programs in the traditional areas of agriculture, including horticulture, agronomy, dairy science and forestry, there are others that can lead to careers in

medicine, floral design, dietetics and many other fields.

The following stories are about students in the division and their reasons for choosing their particular courses of study. They are representative of about 2,400 students enrolled in the academic programs of the College of Agriculture and Life Sciences, the College of Forest Resources and the College of Veterinary Medicine. They all have stories about their reasons for choosing MSU and for selecting their particular course of study.

Soul-Searching Brings Major Satisfaction with IPM



James McPherson (right) is pictured with associate professor of weed management Alfred Rankins.

James "Wes" McPherson had his mind set on veterinary school when his freshman year began at Mississippi State University, but biology classes and a family-farm summer intensified some soul-searching.

"I had been living and working on my stepfather's row-crop farm for almost 13 years," said the junior from Inverness. "When I went home to work corn and soybeans that summer, I decided that farming was what I wanted to do for the rest of my life."

At stake were personal satisfaction and scholastic success for McPherson. After mulling over the future, he decided to change majors and pursue integrated pest management, an interdisciplinary study of entomology, plant pathology and weed science. He has not looked back since.

While McPherson admits his family farm background influenced his decision, he also is convinced IPM will create opportunities for him to develop into a better farmer and start a crop consulting business.

"Since I changed majors, I have really enjoyed all of my course work," McPherson said. "I feel I have learned things from each class that I can use on the farm."

MSU began offering an IPM major in the early 1990s as farmers sought agricultural consultants well-versed in managing insect, disease and weed pest problems. Students can choose among five areas of concentration: agricultural resources, agricultural business, applied precision agriculture, environmental resources and urban resources.

McPherson is one of 15 students majoring in IPM, and he selected agricultural resources as a means to enhance his future in crop consulting. The good news for IPM majors is the potential for employment after graduation. There are more positions open than IPM graduates to fill them. Job placement is close to 100 percent.

After graduation, McPherson plans to go back to Inverness to continue farming with his stepfather. At present, McPherson said he relishes the opportunity as a student to soak up every scrap of knowledge from his instructors. One of his favorite courses in the curriculum has been "Introduction to Weed Science" taught by Alfred Rankins, associate professor of weed management with the MSU Department of Plant and Soil Sciences.

"I really liked that class because I could apply what Dr. Rankins covered to situations occurring on the farm,"

McPherson said. "At home, everything we do is related to agriculture in some way and must be practical."

IPM faculty adviser Fred Musser inspired McPherson to enhance the practical aspects of IPM by selecting co-op internships that offer challenge and variety.

"Dr. Musser strongly urged me to do my summer co-op somewhere other than at home on the farm," McPherson said. "I discovered a huge opportunity in soybean consulting after I followed his advice."

With his eye on the future, McPherson has some sage advice for other students. He said he believes that all areas of agriculture are open to students considering IPM.

"Do the required co-ops in different areas of agriculture," he said. "This is the best way for a student to learn how research, consulting and farming all relate within the scope of agriculture."

Biological Engineering Allows Student to Focus on Prosthetics

Rehabilitation from two major injuries suffered while playing basketball and running cross-country for New Albany High School put Charla Lindley on the fast track to a biological engineering degree at Mississippi State University.

Lindley is typical of individuals who enroll in a technical field because they enjoy mathematics and science. Many students who want to become medical doctors often major in biological engineering because the curriculum is suited for that goal.

Like those other young people, Lindley dreamed of a career using her talents to help others. However, she had no desire to go to medical school.

The physical demands of athletics caused Lindley to develop a stress fracture in her right femur, the primary bone in the thigh that supports the body. Although the arches in her feet and the structure of her ankles did not provide adequate support, she successfully ran track until mobility problems started.

"I was fascinated by the rehabilitation equipment used to help me recover, such as the addition of orthotics in my shoes," Lindley said. "When I learned that I could invent stuff like that with a biological engineering degree, I was sold."

She investigated several biological engineering programs and settled on MSU. The university's Department of Agricultural and Biological Engineering offers a biomedical concentration devoted to prosthetics. Being a fourth-generation Bulldog fan made the decision satisfying.

"I love the beauty of State's campus, especially the Junction," Lindley said. "I get a lot of use from all of the available green space playing 'Ultimate Frisbee,' and I don't miss any football or basketball games."



Charla Lindley works with a skeletal model (above) and with computer simulation (following page).

Jim Lytle

With her path set, Lindley enjoyed calculus and chemistry. She quickly advanced to the upper-level engineering courses and performed well. The toughest, by her own admission, was “Biomedical Materials.” Students in the class learn to solve problems by understanding how different implant materials react within the biological systems of the body.

“Engineering has not been that difficult because I put time, energy and hard work into my studies,” Lindley said. “My motto—it’s just math.”

Biological engineering offers a dazzling array of career opportunities for students willing to make an educational commitment. The curriculum can accommodate specialization in biofuels, genetics, stem cells, implants, prosthetics, drug research and tissue engineering, as well as professional degrees in law, medicine or veterinary science.

“If an individual likes the idea of engineering but wants to do something that emphasizes the science of the human body, then biological engineering is a perfect choice,” she said.

Lindley graduated with top honors in May, and she did not have much time to reflect. She immediately joined her sister Chelsea, a sophomore biological engineering major at State, and 11 other MSU students on a Wesley Foundation mission trip to Ghana, West Africa. She enters Arizona State University this fall to work on a doctorate in biomedical engineering that incorpo-



Jim Lytle

rates prosthetics design and rehabilitation engineering.

“I want to provide low-cost prosthetics for children in Third World countries,” she said. “I feel extremely passionate about improving the lives of others. Without that purpose, my education would be pointless.”

Passion for Fashion, Agriculture Combine in Merchandising Option



Samantha Webb (left) and associate professor of human sciences Wanda Cheek discuss the apparel, textiles and merchandising major.

Samantha Webb dreams of opening a women’s specialty boutique that features clothing made from agricultural materials produced in Mississippi.

She is learning the fashion business as an apparel, textiles and merchandising (ATM) major in the School of Human Sciences at Mississippi State University. With merchandising as her area of concentration, Webb visualizes a career that incorporates her love of clothing and sense of fashion with a desire to promote the importance of agriculture.

“Without agriculture, there would be no wool, cotton or silk in fashion,” she said. “I want to emphasize that connection through my work.”

Webb has been immersed in agriculture all of her life. Her father, Bob Webb, an MSU graduate, raises poultry, beef cattle, sheep and timber on the family’s farm in Forest. Her mother, Anita Webb, served as 4-H youth agent in Scott County and is Extension county director there. She and her sister, Holly, produced several Grand Champion market lambs while participating in the 4-H sheep project.

“I grew up on a farm, and I enjoyed showing lambs, but one of my favorite 4-H projects was cloth-



Jim Lytle

ing selection,” Webb said. “My enjoyment and success with the clothing project influenced my decision of what I wanted to do with my life.”

When Webb graduates in December 2008, she hopes to become a visual merchandiser for a large department store. She plans to acquire the fashion industry experience she needs to plan her boutique.

“My studies at MSU have provided me with the knowledge to help me reach my goals and obtain success,” Webb said. “I feel confident that my ATM courses have thoroughly prepared me for my future career.”

The ATM major offers a variety of classes in apparel design, textile science, computer-aided design, promotion strategies, consumer economics, and fashion and visual merchandising. The School of Human Sciences designed the program to give ATM students a thorough understanding of the fashion business. Webb said her professors encouraged her to take classes outside of the ATM core curriculum to develop a greater knowledge base for her ambitious goal of a specialty boutique.

“I would recommend that ATM majors take marketing classes offered through the College of Business and Industry to obtain a minor in marketing,” Webb said. “This step will make ATM students more marketable to future employers.”

Employers also look for students who are motivated by a challenge. When Webb enrolled in the ATM “Merchandise Planning and Buying” course, she found her test. The class required students to think like merchants and be realistic in creating a prototype store.

“Students must research the demographics and economic status for the store’s location in order to plan sales and, select a target customer,” she said. “We also develop the store’s floor plan, atmosphere, merchandise assortment, product categories and other elements necessary to operate a store.”

High school students interested in studying fashion should visit MSU to see the fun and the importance of such classes.

“All of the ATM instructors go above and beyond to give their students a boost toward success,” she said. “I have learned much from them about professionalism.”

Student Practices Law of the Land

A love for the great outdoors, appreciation for wildlife and respect for law enforcement drives Joe Goddard. The Byram native grew up hunting and fishing in his backyard and at the Copiah County Game Management Area.



Joe Goddard

"My father is a medical entomologist and helped me to discover all the wonders of the outside world," Goddard said. "I think my love for the outdoors was instilled by him."

Goddard and his father have been hunting and fishing since he was 5 years old. His admiration for the outdoors shaped Joe's career choice in conservation law enforcement.

"I have always been interested in law enforcement and have great respect for law officers of all types," Goddard said. "The older I get, the more I want to serve and give back to my community and state."

This desire to serve has led the senior wildlife and fisheries major to intern this summer for the Mississippi Department of Wildlife, Fisheries and Parks.

"I look forward to working alongside the conservation officers and getting a feel for what they do," Goddard said. "My ultimate goal is to provide a safe and enjoyable experience when people take their kids out hunting, fishing or boat riding. That is what I encountered growing up and I want to extend that same opportunity to future generations."

While the curriculum is challenging—forestry, fisheries, wildlife and sociology courses—Goddard found that when pursuing a dream, nothing is impossible.

"My favorite course and instructor was 'Dendrology,' taught by forestry professor David Evans," Goddard said. "He held the highest academic standards yet had a passion for students to learn and was very encouraging. At first, I thought there was no way I was going to learn all the trees and scientific names during the semester, but Evans had a unique way of teaching, and I did it."

Goddard is not alone in his pursuit of a degree in wildlife and fisheries conservation law enforcement. The option averages 20 students each semester, and all hope to work as law officers.

"The conservation law enforcement program has been offered at Mississippi State University since 1999," said Bruce Leopold, wildlife and fisheries department head. "The College of Forest Resources is one of about 10 colleges offering the option as a four-year program."

This is one of the only wildlife and fisheries options where students can obtain employment with a bachelor's degree. The other wildlife and fisheries options usually require an advanced degree, Leopold added.

Goddard said he believes the option will fulfill his goals of serving in a natural resource law enforcement position.

"Not only will I have the opportunity to serve my state, but I will also receive certification as an associate wildlife biologist by The Wildlife Society," Goddard said. "I would encourage anyone who has a passion for the outdoors and law enforcement to follow their dreams and help make hunting, fishing and outdoor recreational pursuits safe and fulfilling."

CVM Degree Opens Doors for Public Health Career



Summer Westbrook

Tom Thompson

“A number of my extended family members are in the medical field as nurses, but I was drawn to veterinary medicine.”

SUMMER WESTBROOK

Summer Westbrook’s decision to apply to graduate school has placed her at the forefront of an effort by the College of Veterinary Medicine to fill a demand for more professionals in public health practice.

Westbrook, who graduated magna cum laude from MSU in 2006 with a bachelor’s degree in animal and dairy science, is pursuing a master’s in veterinary medical science. However, Westbrook’s scholarly ambitions do not end with obtaining the master’s degree. Westbrook, a Summit native, also has wanted to become a veterinarian since she was a child, and she begins her studies for the Doctor of Veterinary Medicine degree, this fall.

“A number of my extended family members are in the medical field as nurses, but I was drawn to veterinary medicine,” she said.

Upon Westbrook’s first visit to MSU, she fell in love with the friendly atmosphere and decided to attend. As an undergraduate, she enjoyed the classes that provided hands-on experience with livestock, as well as her student job at the MSU dairy.

“The experience at the dairy, which started at 3 a.m. each day, allowed me to learn firsthand the interaction between animal health and safe food production,” she said.

The path to attending veterinary school has not been as direct as Westbrook planned. When she was not accepted the first time she applied, she began working at a local veterinary clinic to gain more experience. Following a second unsuccessful attempt, she became even more determined and looked at other avenues to blend her interests in veterinary medicine and food safety, which she developed as an undergraduate.

She met with food safety associate professor Hart Bailey of the CVM Department of Pathobiology and Population Medicine to discuss her future. Westbrook began to rethink her path and decided to enroll in the master’s degree program.

During graduate school, Westbrook has taken specific courses that will provide her the additional tools necessary to pursue a career in the area of public health practice after veterinary school.

“Food safety, zoonotic diseases and epidemiology are among the disciplines that connect veterinary medicine with human medicine and are linking the two professions into a new concept of ‘one world, one health, one medicine’ for future medical professionals,” she said.

Westbrook said she hopes to work with the U.S. Department of Agriculture in Washington, D.C., or the Centers for Disease Control and Prevention in Atlanta to fulfill her externship requirement as a veterinary student. This experience will enhance her marketability as a veterinarian and public health professional.

“I feel that working on the master’s degree has uniquely prepared me for veterinary school, as well as for what I want to accomplish in my career,” Westbrook said. “There is a need for veterinarians to work with other health professionals to protect our food supply and public health.”

Westbrook said she hopes to set an example for other students.

“If you want to do something in life, don’t give up,” she said. “Keep your eyes open for any opportunity that will help you achieve your dream.”