



# New Diagnostic Lab

## Provides Veterinary Services

By Linda Breazeale

Photos by Tom Thompson

The long-awaited, state-of-the-art Mississippi Veterinary Research and Diagnostic Laboratory in Pearl is open and providing quicker diagnostics on samples from a broad range of animal species.

The \$18.5 million construction and equipping project started in 2002 with the groundbreaking of the 2,000-square-foot poultry lab with its estimated \$500,000 cost. The second phase of the project started a year later when construction began on the 40,000-square-foot diagnostic facility for all animal species. The poultry unit became the first to enter the larger facility as the initial lab becomes the receiving office for samples from all species.

Dr. Lanny Pace, executive director for the Mississippi Veterinary Research and Diagnostic Laboratory System, said the project includes more than the building itself; it includes the latest in equipment needs for such a facility.

"One example of the new equipment is a robotic microscope that can be used to share microscopic slides with other labs all over the world, as well as with consultants from other universities and laboratories," Pace said. "Rapid diagnoses and responses are the keys to preventing catastrophic losses when a major disease outbreak occurs in an animal industry. Four years ago, we could not have responded to high-path avian influenza. We would have had to send samples to another lab."

The new building has biosecurity and biosafety measures in place, including separate, dedicated air handling systems for public areas and laboratory space, limited-access areas and numerous biological safety cabinets and fume hoods to protect lab personnel.

"Most routine diagnostic work can be done in biosafety level 2 laboratories, but biosafety level 3 is needed for work on disease agents that are more highly contagious to animals and humans and for agents that could be used as bioterrorism agents," Pace said. "Part of the lab is designed as a biosafety level 3, but it has not been commissioned yet. Once approved for that level, the staff will be able to work on diseases, such as highly pathogenic avian influenza and eastern Equine encephalitis, in a secure and safe laboratory environment."

Pace, a professor of veterinary pathology with Mississippi State University's College of Veterinary Medicine, oversees the four-laboratory system. Accredited by the American Association of Veterinary Laboratory Diagnosticians, the MSU lab network includes the poultry lab in Pearl, the diagnostic lab in Jackson that will soon move to Pearl, the aquatic lab in the Thad Cochran National Warmwater Aquaculture Center in Stoneville and the veterinary college lab in Starkville.

Before the completion of the new diagnostic lab, most nonbird or nonfish samples were sent to the state-owned building on North West Street in Jackson. The building, which is more than 60 years old, lacked space, proper ventilation for adequate biosafety measures and some of the state-of-the-art equipment to meet future diagnostic needs.

"We could do our job, but now we can do it better," Pace said.

Dr. Jim Watson, state veterinarian with the Mississippi Board of Animal Health, said access to the latest in diagnostic tests and the highly skilled and trained staff greatly improve the ability to provide quality animal health care within the state.



The new Mississippi Veterinary Research and Diagnostic Laboratory in Pearl has state-of-the-art facilities for routine procedures and for diagnosing new and emerging diseases in a variety of animals.

“Whether it is a beloved pet, a valuable breeding or performance animal, or food-producing animal, it is critical to have a diagnostic laboratory that can provide the support veterinary practitioners need to provide quality veterinary care for animal owners,” Watson said. “We need to have the diagnostic capability to rapidly diagnose new and emerging diseases, as well as the ability to screen for foreign animal diseases that do not normally occur in our country.”

Watson said with the emergence of new diseases and continued threats of diseases such as foot-and-mouth disease, it is vital to the economic interests of Mississippi to detect diseases if they enter the country.

Dr. Danny Magee, director of the Poultry Research and Diagnostic Laboratory in Pearl, said the timing for this new facility is very good.

“We started this process before the Sept. 11 terrorist attacks in 2001 and before fully recognizing the degree of the threat of bioterrorism and agroterrorism,” Magee said. “Events like the West Nile virus’s arriving in the state have emphasized the need for a facility like this to respond to health crises.”

Magee said poultry diagnostic services began to change in the mid-1990s, and the MSU poultry lab opened in November 2000. Increased concerns about avian influenza, foot-and-mouth disease and exotic Newcastle disease emphasize the need for this diagnostic lab.

“It has increased our ability to serve the industry in Mississippi. Improvements are being made continuously,” Magee said. “This will help us better protect agricultural industries and human health.”

## At a Glance...



### The Mississippi Veterinary Research and Diagnostic Laboratory System

#### Laboratory Facilities

The system is composed of four laboratories administratively housed within the Department of Pathobiology and Population Medicine, College of Veterinary Medicine, Mississippi State University.

The CVM Diagnostic Laboratory Services (CVM-DLS) is a full-service, all-species laboratory that provides diagnostic laboratory support to the college’s Animal Health Center, serves as the teaching laboratory for professional and graduate students, and serves as the research and development laboratory for the system

The Mississippi Veterinary Research and Diagnostic Laboratory (MVRDL) in Pearl is a full-service, all-species laboratory and serves as the central reference laboratory for the system. The MVRDL provides regulatory tests to satisfy state and federal regulatory requirements in regard to animal health, animal health and export regulations.

The Poultry Research and Diagnostic Laboratory in Pearl provides diagnostic services including necropsy, microbiology and field services to the poultry industry of the state.

The Aquatic Research and Diagnostic Laboratory in Stoneville provides diagnostic service to the commercial catfish industry.

Through the network of these four laboratories, essential services in microbiology, pathology, clinical pathology, molecular diagnostics, serology, toxicology and virology are provided. All 82 counties in the state are served by the laboratory system. More than 70,000 case accessions requesting diagnostic services are received each year.