**Summarized Review of the Ph. D. Program in Pathobiology**

***1. Mission, Centrality, Uniqueness***

The mission of the Pathobiology Graduate Program is to provide a broad based graduate education (instruction and teaching) to students seeking a Doctor of Philosophy in the areas of bacterial and viral pathogenesis, clinical and diagnostic pathology, epidemiology, food safety, security, and policy, immunology and immuno-modulation, parasitology, toxicology (clinical and environmental), and production animal medicine and management. The teaching mission is to provide instruction using the most current information in a variety of media and teaching methodologies. The research mission is to develop highly visible and competitive research programs that discover new information that benefits both food and companion animal industries. The Pathobiology Graduate Program at Kansas State University is an interdepartmental and interdisciplinary program that offers Ph.D., and combined D. V. M./Ph. D. degrees and is supported primarily by faculty in the Department of Diagnostic Medicine/Pathobiology (DMP). It is the only program that offers a Ph. D degree in disciplines of Veterinary (or Comparative) Bacteriology, Epidemiology, Food Safety, Security, and Policy, Immunology, Parasitology, Pathology (Anatomic and Clinical), Toxicology, Virology, and Production Animal Medicine. Additionally, the Pathobiology Graduate Program encourages and offers opportunities to DVM students to concurrently work on a dual degree program (DVM/Ph. D) to gain research experience in their field of interest. The main purpose of this dual degree program is to provide selected professional veterinary students with a better understanding of research and prepare them for careers in academia or health and allied industries. This aspect of the graduate program is unique in the State of Kansas.

***2. Quality of Faculty***

Pathobiology is a multi-disciplinary program with faculty expertise in Bacteriology, Epidemiology and Public Health, Food Safety, Security and Policy, Immunology, Molecular Biology, Parasitology, Pathology (Anatomic and Clinical), Production Animal Medicine and Management, Toxicology, and Virology. Currently, the program has 47 faculty members, including 5 adjunct members from outside Kansas State University. Of the 42 faculty members, 18 are Professors, including four University Distinguished Professors, 7 are Associate Professors, and 14 are Assistant Professors. In addition, the department has two Assistant Professors with part time appointment. Also, 16 faculty members have Kansas Agriculture Experiment station appointments with appointments ranging from 20 to 80% commitment to food animal disease research. Several faculty members in the program have board certification in their areas of specialty. The Department also has 17 adjunct and ancillary Assistant/Associate/Professors with research, teaching and/or service responsibilities. The faculty members in the department/program are involved in a broad range of both applied and basic research programs in the study of all aspects of infectious, parasitic, and noninfectious diseases of animals and humans. They provide highly focused research skills employing molecular biology, biochemistry, statistics, and related disciplines so that investigations of animal or human diseases are conducted at the basic and applied levels.

**3. *Quality of Students***

The multi-disciplinary nature of the program, opportunities for inter-disciplinary interactions and existence of critical mass of faculty in certain disciplines (Infectious diseases, Food Safety,

Toxicology, and Production Animal Medicine and Management) have been major factors in attracting high-quality domestic and international graduate students. The quality of students that the program attracts and admits is also because recruitment is done by individual faculty, often based on their need to match the student's background and research interest. Another measure of the quality of the students in the Pathobiology program is the number of scholarships and awards at various levels. The recognition that is truely reflective of their research contributions are the numerous awards that the students have recieved at National and International Conferences.

**4. *Employer Demand***

The Ph. D. graduates from the program find employment immediately after, and often times before, graduation. The majority of graduates accept post-doctoral positions, particularly if their intention is to have an academic career, or opt for jobs in Animal Health industries.

**5. *Service Provided to the Discipline, the University and Beyond***

The program is committed to excellence in teaching (professional and graduate), research and services in areas related to animal and public health. The department contributes to the advancement of knowledge and the veterinary profession through its experimental and clinical investigations of diseases of animals. In addition, the Veterinary Diagnostic Laboratory (VDL), located in the Department, provides high quality, diagnostic and consultative services to veterinarians, livestock producers, animal owners, public health officials, researchers, and commercial enterprises in and around the state of Kansas. The VDL serves the animal health and biosecurity requirements of Kansas and the surrounding region. The VDL is a full service, American Association of Veterinary Laboratory Diagnostician (AAVLD)-accredited veterinary diagnostic laboratory that has diagnostic responsibilities in both CDC's Laboratory Response Network (LRN) and the USDA/DHS's National Animal Health Laboratory Network (NAHLN). As a NAHLN laboratory, the VDL is involved in the development and implementation of standard diagnostic techniques for identification of select agents, including rapid, high-throughput technologies using modern equipment. In addition, there are experienced laboratory and clinical personnel trained in the detection of emergent, foreign and bioterrorism agents. The Department also has a strong, nationally recognized residency training program. These programs are in Anatomic Pathology, Clinical Pathology and Toxicology. Residency training is a 3-year program of intense study for post-DVM students who desire advanced and expanded training in Pathology or Toxicology, with a goal of board certification by the American College of Veterinary Pathologists (ACVP) or American College of Veterinary Toxicologists (ACVT).

**6. *Cost Effectiveness***

The graduate education in the Pathobiology program, in terms of research support, is largely supported by extramural grants awarded to the faculty. In the year 2008, faculty in the Department of Diagnostic Medicine/Pathobiology has received over $5.0 million in grant support. Only a small fraction of the grant support is intramural (Kansas State University and the State of Kansas). Because the department does not provide salary support for graduate students, their salary (about 25 to 30 students per year and approx. $600,000 per year) is entirely from extramural grants of individual faculty members. Faculty members with primary research appointment are also involved in teaching courses for professional students and graduate students.