Description of Externship:

The Division of Comparative Medicine (DCM) in the Department of Pathology, Microbiology, and Immunology offers current veterinary students, residents, and fellows an in-depth externship experience in an active, university-hospital-based biomedical research environment. The focus of the externship can be tailored to the student’s interests and level of experience. Space is available on a first-come, first-served basis. The DCM has a faculty of seven veterinarians, including two ACVP Diplomates and four ACLAM Diplomates. The externship program is designed to be an introduction to Comparative Pathology, involving a short project with a final presentation of results to the DCM faculty and staff. The number of positions available and the schedule are dependent on mentor availability. Individuals accepted for an externship at Vanderbilt will have additional requirements for Vanderbilt University’s Occupational Health and Safety program.

Vanderbilt University Medical Center’s comprehensive Animal Care and Use Program supports cutting-edge research in multiple disciplines. These include unique animal models and state-of-the-art core capabilities such as the Translational Pathology Shared Resource (TPSR), which functions as the home laboratory for Comparative Pathology externs. The TPSR is a 3500sf, full-service pathology laboratory with the mission of supporting basic research in animal models and human tissue. TPSR service divisions described below comprise Comparative Pathology and Research Histology. The TPSR has two Veterinary Pathologists and two M.D. Pathologists on faculty and a staff of six histologists, two comparative pathology technicians, one research assistant, and a laboratory coordinator, all with expertise in the biomedical research setting.

**Comparative Pathology** offers diagnostic testing for animal models with assays specifically designed for mice. Hematology is performed on the ForCyte (Oxford Science) hematology analyzer, which provides a complete blood count and differential on 20µl of blood. Clinical chemistry analysis is performed on the ACE Axcel (Alfa Wassermann), which provides high-throughput customizable assay panels on small volumes of serum or plasma. The laboratory is equipped with a necropsy suite with three downdraft tables custom designed for high-throughput mouse phenotyping projects. Additional services include cytology, microbiology, parasitology, reproductive phenotyping, investigator training, and send-out
services for tests not performed in-house. Consultation with a Veterinary Pathologist is also available through this service division.

**Research Histology** provides high-throughput routine histology and immunohistochemistry for animal and human tissue. The laboratory is fully-automated and equipped with six automated microtomes (Leica), two cryostats (Leica), a Gemini H&E stainer (Thermo Shandon), six SlideMate (Thermo Fisher) slide writers, one automated coverslipper (Sakura), an Artisan (Dako) special stainer, three Bond-Max (Leica) automated immunostainers, an Arcturus laser capture microdissection microscope, and a TMA Grandmaster-Panoramic 250 automated tissue microarray instrument. The immunohistochemistry service has over 50 on-demand biomarkers validated in human and mouse. On-demand antibodies include markers for immunophenotyping, proliferation, apoptosis, neovascularization, and extracellular matrix characterization. In addition, TPSR maintains a library of approximately 800 biomarkers that have been optimized on human and/or mouse tissue.

To apply for an externship, please provide the following documents:

1. A copy of your most recent Curriculum Vitae.
2. A letter of intent which includes a focused area of interest or your goals for the experience and proposed dates and duration of the externship.
3. A letter of good standing from your institution’s Office of Academic Affairs.
4. A letter of reference from faculty/veterinary colleague who is knowledgeable about your professional experience.

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