UC Davis On Line Mouse Pathology with Genetically Modified Mouse Models

Online training opportunities to advance biomedical research through comparative mouse pathology

To address the critical need for qualified personnel conducting pathology research using mice as a model, the University of California, Davis Extension and the internationally recognized Center for Genomic Pathology developed a series of online courses for those who conduct or support biomedical science research using genetically engineered mouse models. This series of unique, multi-sensory online courses is tiered to benefit scientific personnel at all levels. Course content integrates lectures, lessons, interactive tools and digitized whole slide images.

Tier 1 courses focus on the foundations of mouse pathobiology and are now delivered in a shorter, self-study format so students can learn at their own pace and gain foundational knowledge quickly. Tier 2 is intended for those who design and conduct translational research using genetically engineered mouse models. Each course focuses on a specific disease or condition and includes extensive instructor interaction and guidance.

This spring and summer, UC Davis Extension will offer the following:

Tier 1A: Mouse Husbandry and Biology: The first of a two-part series, this course provides foundational knowledge in the handling of the laboratory mouse, along with mouse biology and general pathology. Topics include history of the laboratory mouse, mouse husbandry, regulations and laboratory accreditation, normal gross anatomy, normal mouse histology and general pathology. Participants gain skills specific to mouse research, including best practices to ensure replicable results.
  • Prerequisite: Experience in general laboratory techniques is highly recommended.
  • Online course runs March 23-May 29, 2015, OR June 1-Aug. 7, 2015.

Tier 1B: Mouse Pathobiology: Building on Tier 1A, this course provides a comprehensive introduction to the pathobiology of genetically engineered mice and the design of research using mouse models, with an emphasis on the correlation of microscopic findings to clinical and gross observations. Topics include gross and microscopic patterns of spontaneous and infectious diseases,
basics of microscopy, gene insertion and removal, systemic tumor pathology, mouse immunology and reproductive physiology, experimental design and responsible use of mouse models.

- Prerequisite: Tier 1A or approval from program faculty. Bachelor’s degree in a scientific discipline highly recommended.

Tier 2A: The Mouse as a Model for Mammary Gland Cancer: This course provides background information needed to function in mammary tumor biology. It includes case examples and interactive conferences and is designed for the trained scientist (Ph.D., M.D., D.V.M.) with exposure to but limited training in comparative pathology and the use of genetically engineered mice to model human mammary disease. Participants learn to recognize and interpret the significance of the clinical, gross and microscopic findings in mice and to compare and contrast diseases found in mice to those found in other animals, including humans.


For additional information, please contact Howard Mahoney at hsmahoney@ucdavis.edu or visit us online at www.extension.ucdavis.edu/genomic.

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UC Davis Extension, the continuing and professional education division of UC Davis, has been an internationally recognized leader in educational outreach for individuals, organizations and communities for more than 50 years. With more than 50,000 annual enrollments in classroom and online university-level courses, UC Davis Extension serves lifelong learners in the growing Sacramento region, all 50 states and nearly 100 countries.

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