

**AU College of Veterinary Medicine  
Undergraduate Research in Veterinary Biomedical Sciences (VBMS)**

**VBMS 4980 – Undergraduate Research**

**Available: Spring, 2010**

**Credit:** Variable (1-3h/Semester; Maximum 9h)

**Graded:** Yes (See below)

**Prerequisites:** Undergraduate Juniors / Seniors in good academic standing  
Approval by AU-CVM faculty mentor  
Approval by Associate Dean for Research & Graduate Studies

**Environment:** Students will work with AU-CVM faculty mentors in established research environments as approved by the Associate Dean for Research and Graduate Studies at the AU-CVM.

**Learning Outcomes:** Undergraduate research experiences will be structured on a student-by-student basis by AU-CVM/VBMS faculty mentors. Expected outcomes for each research experience must be defined, in writing, by the mentor and a document, signed by both student and mentor, must be filed in the Office of the Associate Dean for Research and Graduate Studies (ORGS) in the AU-CVM in advance of the initiation of all undergraduate research programs.

Broadly, learning outcomes will include, but will not necessarily be limited to: (1) introduction to/experience with the scientific method and hypothesis testing; (2) development and/or refinement of a technical skill set(s) appropriate to the scientific discipline (ex. animal-handling skills, laboratory safety, validation of one or more analytical biotechniques); (3) development/refinement of written and oral communication skills associated with maintenance of a laboratory notebook and preparation of formal written and oral summaries of research activities.

**Course Content:** Each research experience for undergraduate students (REU) will be unique. Therefore, content cannot be standardized. However, AU-CVM/VBMS faculty mentors will be required (see above) to define - in writing - the goals and aims of proposed REUs with a breakdown of basic activities, definition of all deliverables and a timetable. This 'syllabus' and research plan will be signed by mentor and student and filed in the Office of the Associate Dean for Research and Graduate Studies (ORGS).

**Project Requirements for Students:** Students will be required to: (1) maintain a laboratory notebook (to remain as property of the mentor/PI laboratory); (2) compose and submit a brief (~5 pages plus references as appropriate) summary of the research experience; and (3) prepare and deliver an oral presentation (10-20 minutes using Powerpoint or equivalent software) in review of the research experience. The latter will be presented to the AU-CVM/VBMS mentor, members of the sponsoring laboratory and guests as deemed appropriate by the mentor.

**Grading:** Attendance and overall work ethic 25%; Laboratory technique and lab notebook quality 25%; Written research summary report 25%; Oral research summary presentation 25%; Grades: 90-100 (A), 80-89 (B), 70-79 (C), 60-69 (D), <60 (F).