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Veterinariae Medicinae Doctoris (V.M.D.) Degree

Continuing Education Opportunities for Graduate Food Animal Veterinarians

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after surgery to allow for complete healing of this delicate area.

The results of a study of this problem were presented by Dr. Dana King, a surgery resident working with Dr. Tulleners at New Bolton Center, at the 1997 annual Scientific Meeting of the American College of Veterinary Surgeons in Orlando, Florida. Dr. King reported that complications were not encountered, and healing was uniformly unremarkable. Laser surgery definitely improved racing performance on 73% of racehorses and eliminated noise in 75% of horses. In comparison, horses with ADAF that did not undergo surgery and that were rested for less than two months usually did not improve in racing performance when training was resumed.

As an example, ADAF was diagnosed in a talented horse who was the winner of multiple races and had earnings in excess of \$400,000. The trainer recognized a breathing problem after the horse atypically performed poorly in a race. Working carefully with the local track veterinarian, they were able to localize the problem to the throat region, but could not pinpoint the exact site. A high-speed treadmill evaluation at New Bolton Center performed by Dr. Eric Parente, a member of the Section of Sports Medicine and Imaging, confirmed the problem of ADAF. Standing laser surgery was performed to correct the problem, and the horse convalesced without complications. In the first start back the horse was back to usual form, winning handily.

While ADAF has been recognized only in recent years, it does illustrate the need for a high-speed treadmill evaluation in horses with suspected breathing problems.

"A comprehensive high-speed treadmill performance evaluation is a time-consuming, labor-intensive test which is not inexpensive to conduct due to the equipment and professional expertise needed. However, these caveats aside, I am convinced that the examination is an incredibly valuable diagnostic tool which is a worthwhile investment for owners and trainers with a horse which is not training up to its potential due to a suspected breathing or cardiovascular problem," commented Dr. Eric Tulleners. ■

The University of Pennsylvania School of Veterinary Medicine participates in a number of Food Animal Continuing Education (CE) programs. The content of these courses reflects the on-going change in food animal agriculture and the demands of veterinarians to address these emerging issues.

• **Dairy Production Medicine**

Certificate Program: This joint program sponsored by Penn State and the University of Pennsylvania involves ten three-day modules given over a period of three years, including nutrition (heifer, dry cow, and lactating cow), housing and facility design, mastitis control programs, reproductive management, farm finances, and herd expansion. Many experts from throughout the country, including faculty from both the University of Pennsylvania School of Veterinary Medicine and Pennsylvania State University, teach in this CE program which results in a Dairy Production Medicine Certificate.

• **Software Development:** Faculty members at the School of Veterinary

Medicine's New Bolton Center are continuously involved in software development which can be used to teach veterinary students and post-graduate veterinarians.

• **Penn Annual Conference:** Two-day seminars have been given on Culling, Nutrition, Economics, Reproduction, Pregnancy Wastage, and Heifer Management with national and international speakers.

• **M.B.A. Program:** The School's CAHP has a joint MBA program with Penn's Wharton School that integrates the underlying principles of animal health and economics in livestock production systems. Through the Wharton MBA program, basic fundamental skills and principles in economics, finance, cost accounting, and operations research are covered. Students also complete an application project that explores the use of these principles to a problem in animal production. (n.b. There is also a concurrent VMD/MBA degree program at Penn.) ■

Veterinariae Medicinae Doctoris (V.M.D.) degree

It takes four years of graduate studies to earn a V.M.D. degree. The first two years are spent in lecture and laboratory, covering such basics as anatomy, biochemistry, physiology, embryology, pathology, and nutrition to lay the foundation for the clinical exposure in the third and fourth years. During the third year the students are increasingly exposed to clinical teaching and begin to have hands-on experience with animal patients. At the end of the third year each student selects one of five "tracks": Small Animal, Large Animal, Large and Small Mixed, Equine, or Food Animal. During the fourth year students experience clinical rotations consisting of six foundation and 18 elective blocks.

For students interested in both veterinary medicine and business, the school of Veterinary Medicine and Penn's Wharton School offer a combined course leading to the joint degrees of V.M.D. and M.B.A. This rigorous joint program involves five to six years of study. (There is also a M.B.A. program for graduated veterinarians; please see "Continuing Education Opportunities.") A six-to-seven year program of study leading to both a V.M.D. and Ph.D. degree is available for a small number of highly-motivated, highly-qualified students interested in in-depth research.