

# Bellwether

University of Pennsylvania

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## New Laboratory at New Bolton Center

A dedication ceremony was held on June 17 at New Bolton Center, the large animal facility of the University of Pennsylvania School of Veterinary Medicine, to mark the completion of The Richard S. Reynolds, Jr. Comparative Orthopedic Research Laboratory.

The new laboratory is named as a tribute to Richard S. Reynolds, Jr., a former University Trustee. Housed in a 2,800 square-foot addition to the C. Mahlon Kline Orthopedic and Re-

habilitation Center, it includes a mechanical testing facility, a computer and microscope viewing room, a bone morphology unit and an orthopedic engineering and machine shop.

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*Microradiograph of a cross section of a cannon bone.*

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The work in the mechanical testing facility focuses on an Instron 1331 dynamic materials test system, used to apply stress to bone and thus to determine fatigue levels in bone and in various materials used for fixation of bone in treating fractures.

The computer and microscope viewing room is the center for all computer facilities in the C. Mahlon Kline Center and will be especially utilized for the histology and mechanical testing programs of bone.



Judy Lloyd, research assistant, and Mrs. Georgiana Ducas and Mr. Glenn Pew look at histology equipment in the new laboratory.

The bone morphology unit, made possible by gifts in fond memory of Mrs. Joan Ferguson Pew, a former member of the School's Board of Overseers, provides special information on the microscopic structure of bone in both the healthy state and in fractures. The laboratory is used to prepare calcified and noncalcified bone sections and is equipped for microradiography and photomicrography.

The orthopedic engineering and machine shop contains a milling machine and lathe along with other machines needed for construction of new sophisticated devices for the fixation of equine fractures.

Since its founding in 1981 the Comparative Orthopedic Laboratory (CORL) has been under the direction of Dr. David M. Nunamaker, Jacques Jenny Professor of Orthopedic Surgery. Despite its make-shift space in the Kline Center, CORL has had remarkable success in limiting traditional

threats from loss and injury of the racehorse:

- The development of bone remodeling techniques and training regimens that show promise in reducing the incidence of bucked shins in young Thoroughbred racehorses. These training regimens are being implemented at training facilities throughout the country.
- A designed and patented external skeletal fixation device that can be used to save the lives of horses that have catastrophic breakdown injuries, including fractures that occur during racing.
- The development of several revolutionary techniques to improve the surgical treatment of fractures including:
  - plate-luting, a method that improves the fatigue resistance of internal fixations using plates and screws up to 200%.
  - tension band wiring, pin and wire, and cerclage wiring procedures that allow fixation of elbow fractures without interference with the growth plate in young animals.
  - similar wiring techniques for suc-

cessful treatment of mid-body and base sesamoid fractures.

- new surgical approaches to fracture fixation that decrease surgery time and reduce the infection rate of patients.



Attending the dedication were members of the Reynolds family, (l to r) Mrs. Julie Swords, Ms. Julia Swords, Mr. David Reynolds, Mrs. Dorothy Brotherton, shown here with Dr. Kelly and Dr. Nunamaker.

CORL, one of five research laboratories in the Mark and Lila Allam Center for Equine Sports Medicine, continues the School's long tradition in comparative medicine, advancing not only veterinary medicine but also human medicine.

The new facility became a reality because of the generosity of many people, among them the Richard S. Reynolds Foundation; Mr. Robert H. Crompton III; Mrs. Kathleen Crompton; Mrs. Georgiana Ducas; Doris Duke; the Estate of Louise B. Barclay; The Hunt Foundation; Mr. and Mrs. Robert P. Levy; Mr. Henry S. McNeil, Jr.; Mrs. J. Maxwell Moran; David M. Nunamaker, V'68; Mrs. Roberta Odell; 1993 Pennsylvania Hunt Cup; Ms. Joan E. Pew; Mrs. E. Miles Valentine; Mrs. Charlotte C. Weber; and Mr. and Mrs. George Strawbridge, Jr. The mechanical testing facility was made possible by a gift from the Thoroughbred Retirement Foundation, Inc.; the computer and microscope viewing room was made possible by the 1994 An Evening in Old Saratoga.



Dr. Corinne Sweeney, associate professor of medicine, explains equipment in the new laboratory to Robert Kane from State Senator Bell's office and to State Representative Chris Ross.