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The sudden death of Dr. Robert E. Davies, Benjamin Franklin Professor and University Professor Emeritus, left many in the University struggling for words to define the loss of a world figure in science, a prize-winning teacher and University citizen who was, Provost Michael Aiken said simply, "one of those remarkable people that a university cannot do without."

Dr. Davies, a lifelong explorer who had scaled the Matterhorn, Mt. Robeson and Fujiyama– and survived being struck by lightning on the peak of the Grand Teton- had gone during Spring Break to revisit a favorite climb of his youth. He died on March 6 of a heart attack in Golspie, Scotland, at his hotel en route to his chosen site in the Cairn Gorm Range near Aberdeen.

Far from retired at 73, Dr. Davies was teaching biochemistry in the School of Veterinary Medicine; co-teaching the popular Astro 6 course in General Honors; chairing the Committee on Open Expression; and heading a task force to revise Just Cause procedures.

"Bob Davies was the quintessential good citizen of the University community," said President Sheldon Hackney. "A scholar of international stature, he found time to contribute mightily to Penn's becoming a more caring and open community. Undaunted by detail, he nonetheless appreciated the broad context of world events as they affected our campus. I know I speak for the whole campus when I extend our sympathy to Helen and their family."

Dr. Davies was born in Barton-upon-Irwell, Lancashire, on August 17, 1919. He earned the B.Sc., M.Sc. and D.Sc. from Manchester and the Ph.D. from Sheffield, and later received the honorary M.A. from Oxford's Keble College and from Penn. After serving on the faculties of Oxford, Manchester and Sheffield in England, and as visiting professor at Heidelberg, he came to the U.S. as professor of biochemistry in Penn's School of Medicine in 1955, continuing on the Board of the Faculty of Medicine at Oxford until 1959. He joined the School of Veterinary Medicine in 1966 as chair of the department of animal biol-

ogy. In 1970 he was named Benjamin Franklin Professor of Molecular Biology, and 1977 also became University Professor.

Dr. Davies belonged to a worldwide cadre of academic activists with impeccable scholarly credentials who marched, spoke and wrote for academic freedom for colleagues behind the iron curtain during the Cold War. He went further, and joined the handful who volunteered to serve as hostages if the USSR would allow Dr. Yelena Bonner (Mme. Sakharov) to seek medical treatment in the West.

Meanwhile his research was prolific and his graduate teaching had produced, at last count, a dean and five department chairs, at least 11 professors, and two Fellows of the Royal Society.

Dr. Britton Chance, the Eldridge Reeves Johnson Professor Emeritus of Biophysics and Biochemistry at the School of Medicine, said of Dr. Davies: "We have lost a world-renowned innovator in physiology and biochemistry. Among his many outstanding scientific contributions are the elaboration of the mechanism of acid secretion in the stomach, a final solution to the riddle of energy sources for muscle contraction, and the development of the basic theory linking ion transport to cell energetics (chemiosmotic theory): An inspirational teacher, a leader in the development of new ideas in science and society, and a driving force for innovation and social conscience in the academic community and in our University."

A Fellow of the Royal Society since 1966, Dr. Davies was also an Affiliate of the Royal Society of Medicine and honorary life member of the New York Academy of Sciences, and a member of over 20 other scholarly organizations. In 1978 the Association for Women in Science created the Helen and Robert Davies Award in recognition of the Penn couple's efforts to eliminate sexual and racial bias in faculty appointments.

Winning the Lindback Award for Distinguished Teaching in 1984, Dr. Davies was cited for teaching that was "demanding, stimulating, and permanent in effect" and for "unstinting work to improve curriculum and teaching." Later he headed two task forces on the quality of teaching, and with Dr. Ann Matter compiled a history of the Lindback Awards at Penn.

Dr. Davies took part in virtually every phase of campus life over the years, heading the John Morgan Society, Sigma Xi and Faculty Research Club, and chairing the Faculty Senate, Senate Committee on Academic Freedom and Responsibility, Faculty Grievance Commission and numerous Senate and Council committees.

He held primary or secondary appointments in six schools, and taught in 17 departments. He published over 260 scientific papers and gave more than 100 scientific presentations in the U.S., Great Britain, Germany, Hungary, Sweden, China and Japan. He published still another hundred articles and letters here and abroad on issues such as academic freedom, affirmative action, and the measurement of teaching quality– and on his avocations of climbing, white-water rafting, cave exploration, underwater rescue, and parachuting. (In younger days he also held championships in pole vault and the javelin.)

One of his avocations led to one of the most unusual requests an administration could make of a faculty member, as Chaplain Stanley Johnson and others recall: In October 1969, during a Vietnam War protest, Vice Provost John A. Russell, Jr., called Dr. Davies late at

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night to ask if he would undertake to scale the flag-pole on College Green. The Administration had agreed to fly the flag at half-staff on the one-day national Moratorium, but a faction of the protesters demanded it be kept that way until the War ended. And consultation with faculty, and a petition by hundreds of staff, indicated consensus for returning it to full staff. By day officials announced this decision, but that night on patrol campus police found the halyard cut. Though he opposed the War, Dr. Davies believed in consensus; though he had never before climbed a flagpole he had a book that told how; and though he was, as he jokingly said, a Britisher who had been on the "other side" of a war some two centuries before – nevertheless in a high wind before dawn Bob Davies went up the rusting pole and restrung the halyard so that the U.S. flag could fly at sunrise. (A few years later when Penn was in a budget crisis, he did it again – to preserve funds for academic needs.)

Other friends remember that Dr. Davies helped create the legal defense fund of WEOUP (Women for Equal Opportunity at the University of Pennsylvania); served as an expert witness in grievance cases and lawsuits involving women and minorities; and, with Dr. John deCani and Nancy Geller of the Wharton School, helped develop and publish statistical measures of faculty quality through which discrimination could be challenged.

"Bob Davies has fought for the rights of students, faculty and staff; he supported critical sit-ins and worked tirelessly to advance the status of women and minorities," said his longtime colleague at the Vet School, Dr. Adelaide Delluva.

"Affirmative action had a powerful ally in Bob Davies, not only at Penn but throughout academia," added Dr. Phoebe Leboy of the Dental School, a former Senate chair who was the first head of WEOUP and is active in the Association of Women in Science. "As a teacher and scholar of the first rank, he was determined to see quality recognized in all people regardless of color or gender, and he believed in changing the system from within. Bob Davies helped revolutionize the admission of women and minorities in his school, and spent untold hours working to support individual women and people of color for appointment and promotion, both here and on other campuses. In individual cases he was University collegue to staff grievants as well as faculty; and in the meantime he spearheaded those meticulous, time-consuming studies that laid the groundwork for new policies and procedures to make the system fairer," she continued. "WEOUP and the University have lost a friend who not only spoke eloquently for equity and diversity, but who worked as hard as he talked."

Dr. Davies is survived by his wife of 32 years, Dr. Helen C. Davies, professor of microbiology and associate dean of the Medical School; two sons, Daniel J. Conrad of Vancouver and Richard D. Conrad of Philadelphia; and a foster daughter, Lisa Edwards of Philadelphia.

The Robert E. Davies Memorial Fund has been established. Gifts may be made to it via checks to the Trustees of the University of Pennsylvania, designating this Fund and mailed to Room 627A Franklin Building, University of Pennsylvania, Philadelphia, PA 19104-6205.

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Twenty-third Annual Canine Symposium

The 23rd Annual Canine Symposium was held January 23 at VHUP. Following are summaries of the talks presented.

Canine Hyperthyroidism

Thyroid hormones affect nearly every system of the body. Often referred to as "the great impersonator," hypothyroidism, the most prevalent thyroid disorder in dogs, manifests itself in many different ways. Dr. Carole Zerbe, assistant professor of internal medicine at VHUP, discussed the disease process, symptoms, diagnosis and treatment of hypothyroidism.

Hypothyroidism is characterized by reduced levels of thyroid hormones, triiodothyronine (T3), and thyroxine (T4). Both are produced by the two thyroid glands located in the neck. Hormone production is regulated by signals sent by the brain in the form of thyroid releasing hormone (TRH) and by the pituitary gland produced in the form of thyroid stimulating hormone (TSH). Iodine is also very important for thyroid hormone production.

Thyroxine circulates in the blood in several forms. Usually bound to proteins, about 0.1% exists free in the blood. It is the free hormone that is biologically active. Most of the free T4 is converted into T3 in the blood or within the cells, where it works on the intracellular level to increase oxygen consumption and heat production.

Thyroid hormones increase basal metabolic rate, blood flow to a variety of tissues, and cardiac output. They directly or indirectly increase the rate of breakdown of protein, fat, and carbohydrates. Additionally, thyroid hormones are important in the development of young animals. These hormones are necessary for normal bone growth and maturation