THE ERNEST W. GOODPASTURE LECTURE
IN INVESTIGATIVE PATHOLOGY

SPONSORED BY:
Department of Pathology

Mario R. Capecchi, Ph.D.
“Gene Targeting into the 21st Century:
Mouse Models of Human Disease from
Cancer to Neuropsychiatric Disorders”

March 14, 2011
12:00 pm
214 Light Hall
Ernest William Goodpasture, M.D.

Visionary pathologist, consummate investigator, practical idealist, and gracious colleague, Ernest Goodpasture furthered the cause of humanity through seminal discoveries in the research laboratory and exemplary conduct as an academician.

The chick embryo technique for culturing viruses is Goodpasture’s best-known contribution to medical science, for which he earned international renown as well as numerous honors and awards. This landmark discovery led to the development of vaccines for yellow fever, influenza, smallpox, and typhus, while serving as an essential laboratory tool for the study of viral and bacterial diseases for more than a decade. His proudest accomplishment was discovering in 1934 that mumps, a disease known since the time of Hippocrates, was caused by a virus. With this success Dr. Goodpasture showed that he had mastered the study of disease through controlled experimentation.

Dr. Goodpasture’s accomplishments were a key factor in establishing the legitimacy of Vanderbilt Medical School after its reorganization in 1925. Significantly, his department so emphasized the importance of teaching that the pathology course has consistently ranked as one of the best in the medical school—a legacy that continues to the present. He served as dean of the school from 1945 to 1950, a period during which he dealt with crises caused by fiscal constraints and the personnel imbalances resulting from World War II. His loyalty to the University during this time may well be responsible for the survival of its medical school. The attendant drop in his research productivity probably reduced his chance to receive a Nobel Prize.

Ernest Goodpasture had a life-long association with Vanderbilt University. After receiving his B.A. degree from Vanderbilt in 1907 and his M.D. from Johns Hopkins in 1912, he trained at Hopkins, Harvard, University of the Philippines and the Singer Research Laboratory in Pittsburgh. In 1924 he accepted an appointment at Vanderbilt as the chair of pathology. He held this position until 1955 when he became the Scientific Director of the Armed Forces Institute of Pathology in Washington, D.C. From 1956 until 1959 he was on the Vanderbilt Board of Trust. Dr. Goodpasture died in 1960, shortly after resuming research at Vanderbilt on a pox virus. In his honor the Ernest W. Goodpasture Chair in Experimental Pathology and this Goodpasture Lectureship were established by his friends, colleagues, and the Pathology Department.

Dr. Mario Capecchi was born in Verona, Italy in 1937. He received his B.S. in chemistry and physics from Antioch College in 1961 and his Ph.D. in biophysics from Harvard University in 1967. He completed his thesis work under the guidance of Dr. James D. Watson. From 1967-69 he was a Junior Fellow of the Society of Fellows at Harvard University. In 1969 he became an Assistant Professor in the Department of Biochemistry, Harvard School of Medicine and was promoted to Associate Professor in 1971. In 1973 he joined the faculty at the University of Utah as a Professor of Biology. Since 1988 Dr. Capecchi has been an investigator of the Howard Hughes Medical Institute; since 1989, a Professor of Human Genetics at the University of Utah’s School of Medicine; and since 1993, Distinguished Professor of Human Genetics and Biology.

Dr. Capecchi is best known for pioneering the technology of gene targeting in mouse embryo-derived stem (ES) cells that allows scientists to create mice with mutations in any desired gene by choosing which gene to mutate and how to mutate it. This gives the investigator virtually complete freedom in manipulating the DNA sequences in the genome of living mice, and allows detailed evaluation of any gene’s function during its development or post-developmental phase. Research interests include the molecular genetic analysis of early mouse development, neural development in mammals, production of murine models of human genetic diseases, cancer and factors affecting life expectancy, homologous recombination and programmed genomic rearrangements in the mouse.