

## R. Palmer Beasley, MD

### *Recipient of the 2011 Maxwell Finland Award for Scientific Achievement*

For his trailblazing research on the cause and prevention of hepatitis B and liver cancer, R. Palmer Beasley is the recipient of the 2011 Maxwell Finland Award from the National Foundation for Infectious Diseases.

Through extensive investigations, Dr. Beasley and his colleagues proved that hepatitis B virus (HBV) is a primary cause of liver cancer, and the driving force in the transmission from mothers to infants during childbirth. As a result of Dr. Beasley's findings, immunization programs around the world have prevented untold numbers of deaths.

"Dr. Beasley has saved countless lives from cirrhosis and liver cancer through his work on the epidemiology and prevention of hepatitis B," according to Dr. Herbert L. Du Pont, Director of the Center for Infectious Diseases at the University of Texas School of Public Health. "He is a giant in the field of infectious diseases."

This award marks another monumental milestone in a long, fruitful and continuing journey.

Born in Glendale California in 1936 to Robert Seth Beasley and Bernice Palmer Beasley, Palmer Beasley was raised in the world of finance. "I grew up in West Los Angeles in a banking family," he says. "My grandfather and father were bankers and my mother was a lecturer, a profession that seems to have disappeared."

Even at an early age, Dr. Beasley knew he wouldn't become a banker. "I was an outdoors kid fascinated by nature," he says. "I was an Eagle Scout and did a lot of camping, hiking and diving."

"Our parents believed deeply in the importance of education, science and public service." Dr. Beasley says he was

"pretty sure by sometime during high school" that medicine was his calling.

Both Palmer Beasley and his younger brother—by three years—Bruce Miller Beasley, attended public schools. And they both chose to go to college on the East Coast at Dartmouth College. Today Bruce is an internationally recognized sculptor who lives and works in Oakland.

In 1958, Palmer Beasley received a degree in philosophy focusing on causation from Dartmouth College. After graduating from Harvard Medical School—where he was a student of Maxwell Finland—Dr. Beasley received a masters degree in preventive medicine at the University of Washington in 1969.

Dr. Beasley interned at King County Hospital in Seattle and from 1963 to 1965 he worked in the Epidemic Intelligence Service at the Centers for Disease Control and Prevention in Atlanta. He returned to Seattle in 1965 to serve his residency at the University of Washington Hospital, and in 1967 he became a senior fellow in preventive medicine at the University of Washington School of Medicine.

From 1969 to 1986, Palmer Beasley served first as assistant professor, then associate professor, then professor of preventive medicine in the department of epidemiology at the University of Washington. Also in 1979 he became director of the American University Medical Center in Taipei, Taiwan.

Between 1969 and 1971 he participated in the field trials of the new rubella vaccines in Taiwan, where a large epidemic was occurring. Those studies established the efficacy of the rubella vaccine and led to its eradication from the United States and many Western countries. He also learned

that Taiwan had the highest HBV carrier rate in the world.

Dr. Beasley moved to Taiwan in 1972, where he did full-time research on HBV for the next fourteen years.

He told the *Houston Chronicle* in a 2000 interview that “I decided what we now call hepatitis B looked like the most poorly understood and least controlled infectious disease problem in the world, and, therefore, the most important frontier.” In 1976, Dr. Beasley led a study of 23,000 Taiwanese civil servants.

He told the newspaper that his work was nearly shut down in 1978 when President Jimmy Carter altered the United States official recognition from Taiwan to mainland China and withdrew US military from Taiwan. Fortunately the National Institutes of Health and the Taiwanese government provided necessary funding to continue Dr. Beasley’s work.

During his research, Dr. Beasley found a marker that pinpoints which infected mothers will pass the hepatitis B virus on to their offspring and he established that hepatitis B human immune globulin (HBIG) could protect children from the virus. “This was really a breakthrough,” he told the *Chronicle*, “because it showed for the first time that intervention was possible.”

A vaccine program was launched in Taiwan in 1984. Eight years later, following Dr. Beasley’s leadership, the World Health Assembly designated it as the seventh global vaccine. The vaccine is now used in more than 100 countries, and at that time was the only immunization to prevent a major human cancer.

Dr. Cladd E. Stevens of the National Cord Blood Program recalls being a graduate student in the University of Washington School of Public Health and Dr. Beasley’s first fellow. “I was a member of Dr. Beasley’s team at the incep-

tion of his studies on the epidemiology and prevention of hepatitis B virus infection in Taiwan starting in 1972.”

Together, Drs. Beasley and Stevens made the critical discovery that HBV is transmitted from mothers to infants, usu-

ally during labor and delivery. In Taiwan, Dr. Stevens says, “we began the studies of HBV transmission from mother to infant, demonstrating that most transmission was perinatal rather than in utero, documenting the risks for transmission, including viral load, as well as the lack of genetic component to familial clusters of HBV infection.”

Dr. Beasley and his colleagues conducted other significant research, Dr. Stevens says, and “completed the picture of the epidemiology of HBV infection in Taiwan and China with several studies of the incidence of infection in special populations such as pre-school children and college students and, through a study among

immigrants to Taiwan from mainland China, mapped the prevalence of HBSag (the surface antigen of the hepatitis B virus) in China, province by province.”

He delivered the prestigious Maxwell Finland Lecture in 1987—the year Dr. Finland died—to the Infectious Diseases Society of America.

Over the years, he has been awarded a raft of prizes, including the King Faisal International Prize in Medicine in 1985 and the Charles S. Mott General Motors Prize for Research on Cancer in 1987. In 1999, he won Thailand’s Prince Mahidol Award for Medicine, in 2000, he received the Health Medal of the First Order in Taiwan for his hepatitis B research, and in 2010 the HBV Foundation’s Distinguished Scientist Award.

Palmer’s abundant achievements, writes Dr. Samuel L.



Katz, chairman emeritus of the Department of Pediatrics at the Duke Children's Hospital and Health Center, "are highlighted most by his 14 years in Taiwan, where he was responsible for a succession of investigations—clinical, epidemiological and laboratory—which led to a full understanding of the spectrum of hepatitis B virus infection. These studies elucidated its virology, immunology, transmission and clinical manifestations, including its causal link to chronic hepatitis, cirrhosis and hepatocellular carcinoma."

Beyond Taiwan, Dr. Katz concludes, Dr. Beasley "brought his knowledge to multiple nations and through the World Health Organization to all those by the Expanded Program on Immunization to prevent hepatitis B infections among infants in those nations with high endemicity. With the emergence of HIV/AIDS he initiated and stimulated programs in sub-Saharan Africa and Southeast Asia where he collaborated with in-country medical leaders to establish enduring, productive programs dealing with pathogenesis, clinical manifestations and prevention."

According to Dr. Stevens, "Dr. Beasley's work has led to the thorough understanding and effective prevention of HBV infection and its long-term consequences on a global scale, making hepatocellular carcinoma and cirrhosis of the liver—one of the primary causes of death for much of the developing world of Asia, Africa and the Middle East—a thing of the past for current and future generations."

When Dr. Beasley received the Hepatitis B Foundation's Distinguished Scientist Award in 2010, Roberta T. Ness,

dean of the University of Texas School of Public Health, said in *The Medical News*, "Dr. Beasley's contributions to understanding the link between hepatitis B and liver cancer have saved hundreds of thousands of lives. His work not only transformed our understanding of the cause of liver cancer, but then spearheaded the solution through vaccination." And, Dr. John Mendelsohn, President of the MD Anderson Cancer Center says "Dr. Beasley has saved more lives from cancer of the liver world wide than the MD Anderson has from all cancers."

Today Palmer Beasley continues as the Ashbel Smith Professor, Epidemiology, Dean Emeritus, and is Director of the Center for International Training and Research at the University of Texas School of Public Health in Houston. He is married to Dr. Lu-Yu Hwang. They have three children: Fletcher, Monica and Bernice.

Fletcher, who lives in Los Angeles, is a composer. He is married to a painter and they have one daughter. Monica is married to an attorney. They live in Seattle and also have one daughter. Bernice is a college senior majoring in history and philosophy.

The groundbreaking work that Beasley did in Taiwan "is sort of a world classic," Dr. Mark Kane, former head of the World Health Organization's hepatitis B immunization program, told the *Houston Chronicle*. "Before his work, people didn't really know what the major cause of liver cancer was. They thought it had to do with a fungus that grows on grain, or alcohol. He really is a towering figure in this field."