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2010 LASKER AWARDS HONOR TRAILBLAZERS IN
MEDICAL RESEARCH AND CLINICAL CARE

Douglas Coleman and Jeffrey M. Friedman, for the Discovery of Leptin, a Breakthrough
that Revealed New Insight into the Genetic Basis of Obesity

Napoleone Ferrara, for Using His Discovery of VEGF to Devise an Effective Treatment
for Wet Macular Degeneration, a Leading Cause of Blindness in the Elderly

David J. Weatherall, for Discoveries Concerning Genetic Diseases of the Blood and Improving
Clinical Care for Children Throughout the Developing World.

New York, Sept. 21, 2010 - The Albert and Mary Lasker Foundation, which for 65 years has championed the greatest advances in medical research, announced today the winners of the 2010 Lasker Awards: **Douglas Coleman** and **Jeffrey M. Friedman** for basic medical research, **Napoleone Ferrara** for clinical research and **David J. Weatherall** for special achievement. The three awards—recognized as the most prestigious medical research awards in the United States today—honor four visionaries whose insight and perseverance have led to dramatic advances that will prevent disease and prolong life.

The Lasker Awards, which carry an honorarium of \$250,000 for each category, will be presented at a ceremony on Friday, October 1, at the Pierre Hotel in New York City. Since 1945, the Lasker Awards program has recognized the contributions of scientists, physicians, and public servants internationally who have made major advances in the understanding, diagnosis, treatment, cure, and prevention of human disease.

Coleman of Jackson Laboratory in Bar Harbor, Maine and Friedman of Rockefeller University in New York City will receive the 2010 Albert Lasker Basic Medical Research Award for discovering leptin, a hormone that regulates appetite and body weight, a finding that firmly established the tie between obesity and genetics. Ferrara of South San Francisco-based Genentech will receive the 2010 Lasker~DeBakey Clinical Medical Research Award for the discovery of Vascular Endothelial Growth Factor (VEGF), a key to blood-vessel formation, which led to his creation of a treatment that restores sight to people blinded by the effects of wet age-related macular degeneration. David Weatherall, the Regius Professor of Medicine Emeritus and retired Honorary Director of the Weatherall Institute of Molecular Medicine at the

University of Oxford, will receive the 2010 Lasker-Koshland Special Achievement Award in Medical Research for five decades of statesmanship in biomedical sciences exemplified by his discoveries concerning genetic diseases of the blood and for leadership in improving clinical care throughout the world benefitting children afflicted with the genetic blood disorder thalassemia.

“The 2010 Lasker Awards dramatically illustrate how the connection between innovative genetic and molecular research fosters bold advances that improve the health of people globally,” said Maria Freire, President of the Lasker Foundation. “It’s with great pride that the Lasker Foundation marks its 65th anniversary by recognizing these four Laureates whose courage and dedication exemplify all that our organization seeks to honor. They unlocked medical mysteries that are leading to successful new treatments for some of the world’s most perplexing diseases.”

“In granting these awards, the Lasker Foundation honors those who were willing to defy conventional wisdom and blaze new trails of inquiry that led to a startling new treatment for blindness, a solid understanding of the genetic causes underlying obesity and profound advances in clinical care for blood disorders that afflict children throughout the world’s poorest countries,” said Joseph L. Goldstein, Chair of the Lasker Medical Research Awards Jury.

Coleman and Friedman Honored for Basic Medical Research on Obesity

The 2010 Albert Lasker Basic Medical Research Award goes to Coleman, 78, and Friedman, 56, whose discovery of a fat cell-produced protein launched new understandings of the roles genetics and brain chemistry play in obesity, a major, costly public-health problem. The Centers for Disease Control and Prevention estimates that about 34 percent of U.S. adults are currently obese.

In the 1960's, Coleman began studying mice with disturbances in metabolism that resembled those that occur in humans with obesity and type 2 diabetes. Some of the mice carried a mutation in a gene called *db*, while others carried a mutation in a gene called *ob*. In a series of ingenious experiments in which he conjoined the circulatory systems of normal and *db* mice, Coleman discovered that *db* mice released a substance that restrained the appetite in normal mice, but which the *db* mice themselves did not respond to, even though they could produce it. In striking contrast, *ob* mice did not produce the weight-suppressing substance, although they had the ability to react to it.

Employing new technology to build on Coleman’s research, in the mid-1990s Friedman found and isolated the protein encoded by the human *ob* gene and dubbed it leptin from *leptos*, the Greek word for thin. Subsequent investigation showed that *db* mice lack the brain receptor that senses leptin and that triggers a feeling of satiation, meaning hunger persists no matter how much food is consumed. The research also showed that fat cells make leptin, which directs normal mice to curb their food intake. Friedman’s breakthroughs fueled intense research into the implications for humans, which led to the discovery of rare people with massive obesity caused by mutations in the leptin gene that cause them to make too little leptin. Such patients experienced significant weight loss after undergoing leptin-replacement therapy. Researchers are now seeking solutions to the problem of obese people who are not adequately responsive to their own leptin.

Ferrara Cited for Clinical Research Leading to Treatments for Blindness

The 2010 Lasker-DeBakey Clinical Medical Research Award honors Napoleone Ferrara, 54, of Genentech, who discovered Vascular Endothelial Growth Factor (VEGF), a key to blood-vessel formation, and used this knowledge to invent an effective treatment for wet age-related macular degeneration (AMD), a leading cause of severe, irreversible vision loss in the elderly. These advances led to an anti-VEGF antibody therapy that for the first time can significantly improve the sight of people with this illness, and reduce the risk of further vision loss. Upwards of a million AMD patients worldwide have already received the therapy and scores more will likely benefit in the coming decades, as the world's population ages.

Ferrara's journey to unlocking the lynchpin for one of the body's most important physiological processes and creating a novel approach to combating AMD began in the early 1980s with his study of cells linked to blood-vessel development. At Genentech in 1989, Ferrara discovered a substance in humans that spurs growth of vascular endothelial cells and began to investigate whether quelling what he dubbed "VEGF" could thwart troublesome blood vessel formation. Ferrara subsequently proved that shutting down VEGF receptors could stem blood vessel formation and went on to develop an antibody to neutralize human VEGF, which choked off the flow of blood, helping stem tumor growth. This led to the creation, in 2000, of an anti-VEGF treatment that slows blood vessel formation in the eye, retards vision loss and improves sight in many patients.

Weatherall Lauded for Scientific Statesmanship and Discoveries Tied to Blood Diseases Afflicting the World's Poor

The 2010 Lasker-Koshland Special Achievement Award in Medical Research honors physician-scientist David J. Weatherall, 77, for merging astute, compassionate patient care with relentless scientific investigation that over five decades led to countless advances in the diagnosis and treatment of genetic blood disorders, especially thalassemia, an inherited form of anemia which predominantly affects children living in the world's poorest nations. Weatherall made global health a priority long before it was in vogue, and inspired generations of young physicians and researchers to apply the power of molecular medicine to the treatment of their patients.

Weatherall began exploring thalassemia in the 1950s and by the 1970s had unraveled the biochemical underpinnings of the disease and provided one of the first descriptions of gene deletion causing a human disease. Applying his findings to the treatment of patients, he developed diagnostic tests and therapies for thalassemic children and established a robust network of clinical and research collaborations with workers in developing countries to manage and study the disease. In 1989, Weatherall established Oxford University's Institute of Molecular Medicine, which was renamed in his honor upon his retirement in 2000.

Additional information:

The Albert and Mary Lasker Foundation fosters the prevention and treatment of disease and disabilities by honoring excellence in basic and clinical science, by educating the public, and by

advocating for support of medical research. Founded in 1942, the Lasker Foundation presents the prestigious Lasker Awards, which recognize the world's leaders in basic and clinical medical research, and individuals with outstanding public service. For much of the 20th Century, the Foundation was led by Mary Lasker, who was America's most prominent citizen-activist for public investment in medical research. She is widely credited with motivating the White House and the Congress to greatly expand federal funding for medical research, particularly through the National Institutes of Health.

About the Lasker Awards: The Lasker Awards are among the most respected science prizes in the world. Recipients of the Lasker Medical Research Awards are selected by a distinguished international jury chaired by Joseph L. Goldstein, recipient of the 1985 Lasker Award for Basic Medical Research and the Nobel Prize in Medicine. Lasker Laureates receive a citation highlighting their achievements and an inscribed statuette of the Winged Victory of Samothrace, the Lasker Foundation's traditional symbol representing humanity's victory over disease, disability, and death. Seventy-nine Lasker Laureates have received the Nobel Prize, including 30 in the last two decades. More details on the 2010 Lasker Award recipients, the full citations for each award category, video interviews and photos of the awardees and additional information on the foundation are available at www.laskerfoundation.org.