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FOR IMMEDIATE RELEASE

Douglas Wallace

Geneticist Douglas C. Wallace, PhD, to Receive the $500,000 Gruber Genetics Prize for Groundbreaking Contributions to Mitochondrial Genetics

June 28, 2012, New Haven, CT –Douglas C. Wallace, PhD, a pioneering genetics researcher who founded the field of mitochondrial genetics in humans, will receive the 2012 Genetics Prize of The Gruber Foundation. Wallace is being honored with this prestigious international award for his groundbreaking achievements in helping science understand the role of mitochondria—the "power plants" of cells—in the development of disease and as markers for human evolution.

Wallace is the director of the Center for Mitochondrial and Epigenomic Medicine at The Children's Hospital of Philadelphia. Currently a professor of Pathology and Laboratory Medicine in the Perelman School of Medicine at the University of Pennsylvania, Wallace previously held academic positions at Stanford University, Emory University, and the University of California Irvine, and is also being honored for training and inspiring numerous pre- and postdoctoral students who have gone on to have distinguished careers of their own.

He will receive the award November 9 in San Francisco at the Annual Meeting of the American Society of Human Genetics, where he will also deliver a lecture titled "A Bioenergetic Perspective on Origins, Health, and Disease."

"Douglas Wallace's contributions to our understanding of mitochondrial genetics have changed the way human and medical geneticists think about the role of mitochondria in human health and disease," said Elizabeth Blackburn, chair of the Selection Advisory Board to the Prize. Blackburn is the 2006 Gruber Genetics Prize laureate and shared the 2009 Nobel Prize in Physiology and Medicine.

Wallace began his research on mitochondrial biology 40 years ago, at a time when few people thought the study of mitochondria and its DNA (mtDNA) would have any significant applications for clinical medicine. In the early 1970s, Wallace and associates demonstrated that the mtDNA coded for heritable traits by developing the cybrid transfer technique and showing that chloramphenicol resistance was cytoplasmically inherited. This system permitted them to delineate the characteristics of cytoplasmic genetics. Then in the late 1970s, Wallace demonstrated that the human mtDNA is inherited solely through the mother. Using maternal inheritance as a guide, Wallace identified the first inherited mtDNA disease, Leber's hereditary optic neuropathy (LHON), and subsequently linked mtDNA mutations to a wide range of clinical symptoms, including deafness, neuropsychiatric disorders, cardiac and muscle problems, and metabolic diseases such as diabetes. Wallace also showed that mtDNA mutations accumulate in human tissue with age, and thus may play a role in age-related

diseases, such as heart disease and cancer. In addition, he found that the levels of these age-related mtDNA mutations are higher in the brains of people with certain neurodegenerative diseases, including Alzheimer disease, Parkinson disease and Huntington disease.

Wallace's research has also made a major contribution to the field of molecular anthropology. Using mtDNA variation, he has reconstructed the origins and ancient migrations of women, tracing all mtDNA lineages back some 200,000 years to a single African origin—the so-called mitochondrial Eve.

"The impact of Doug Wallace's visionary research has been remarkable," said Huda Zoghbi, a member of Selection Advisory Board and the 2011 laureate of the Gruber Neuroscience Prize. "His discovery of the first mtDNA mutations in humans opened up the field of mitochondrial genetics and demonstrated the role of mitochondria in many human diseases. It's an extraordinary legacy—and he is richly deserving of this award."

Additional Information

In addition to the cash award, the recipient will receive a gold medal and a citation.

Laureates of the Gruber Genetics Prize:

- **2011: Ronald Davis,** for his pioneering development and application of recombinant-DNA techniques.
- **2010: Gerald Fink,** whose work in yeast genetics advanced the field of molecular genetics
- **2009: Janet Davison Rowley,** for her seminal discoveries in molecular oncology
- **2008: Allan C. Spradling,** for his work on fly genomics
- **2007: Maynard V. Olson,** for his contributions to genome science
- **2006: Elizabeth H. Blackburn,** for her studies of telomeres and telomerase, and her science advocacy
- **2005: Robert H. Waterston,** for his pivotal role in the Human Genome Project
- **2004: Mary-Claire King,** for three major findings in modern genetics: the similarity of the human and chimpanzee genomes, finding a gene that predisposes to breast cancer, and forensic genetics
- **2003: David Botstein,** a driving force in modern genetics who established the ground rules for human genetic mapping
- **2002: H. Robert Horvitz,** who defined genetic pathways responsible for programmed cell death
- **2001: Rudolf Jaenisch,** who created the first transgenic mouse to study human disease

The Prize recipients are chosen by the Genetics Selection Advisory Board. Its members are:

Elizabeth H. Blackburn, University of California, San Francisco (Chair); **Martin Chalfie,** Columbia University; **Richard Lifton,** Yale School of Medicine; **Maynard Olson,** Genome Center, University of Washington; **Janet Davison Rowley,** University of Chicago; **Allan C. Spradling,** Carnegie Institution, Howard Hughes Medical Institute; and **Huda Zoghbi,** Baylor College of Medicine.

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By agreement made in the spring of 2011 The Gruber Foundation has now been established at Yale University.

The Gruber International Prize Program honors individuals in the fields of Cosmology, Genetics and Neuroscience, whose groundbreaking work provides new models that inspire and enable fundamental shifts in knowledge and culture. The Selection Advisory Boards choose individuals whose contributions in their respective fields advance our knowledge and potentially have a profound impact on our lives.

The Genetics Prize is presented to a leading scientist, or up to three, in recognition of groundbreaking contributions to any realm of genetics research.

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For more information on the Gruber Prizes, visit www.gruberprizes.org , e-mail media@gruberprizes.org or contact A. Sarah Hreha at +1 (203) 432-6231. By mail: The Gruber Foundation, Yale University, Office of Development, PO Box 2038, New Haven, CT 06521.

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