

Yale's Horwich shares \$1 million life science prize

Yale UniversityYale University



Arthur Horwich of the Yale School of Medicine was named co-winner of the Shaw Prize in Life Science and Medicine, announced the Shaw Prize Foundation in Hong Kong.

Horwich, Sterling Professor of Genetics, professor of pediatrics, and a Howard Hughes Medical Institute investigator, will share the \$1 million prize with Franz-Ulrich Hartl of the Max Planck Institute of Biochemistry. The two were honored for their contributions to the understanding of the molecular mechanism of protein folding.

The Shaw Prizes are dedicated to furthering societal progress, enhancing quality of life, and enriching humanity's spiritual civilization.

Horwich and Hartl were previous named co-winners of the prestigious 2011 Albert Lasker Basic Medical Research Award. Since the inception of the Lasker Awards in 1945, 80 winners of the award have gone on to win the Nobel Prize — 28 in just the last two decades.

Proteins are produced from DNA's instruction manual and manufactured in cellular structures called ribosomes, emerging single-file in a chain of amino acids. Proteins are crucial to the function of all life but become biologically active only when they

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fold into complex, origami-like structures. Scientists used to think that proteins folded into shape by themselves, without any cellular energy input. Over more than two decades of work, Horwich and Hartl showed that proteins fold in the cell with the assistance of specialized proteins called chaperonins, which form a sort of a dressing room in which nascent proteins are assisted into their functional shapes.

Today, scientists know that malfunctions of protein-folding activity can cause proteins to clump together, a process implicated in neurodegenerative illnesses such as Parkinson's disease, Alzheimer's disease, Huntington's disease, mad cow disease, and amyotrophic lateral sclerosis.

The Shaw Prize consists of three annual awards in astronomy, life science and medicine, and mathematical sciences. These international awards honor individuals who have achieved distinguished breakthroughs in academic and scientific research.

The Shaw Prizes were established under the auspices of Run Run Shaw, a Hong Kong film producer and chair of Television Broadcasts Limited, the largest Chinese program producer in the world. The Shaw Prize is accompanied by a medal displaying a portrait of Run Run Shaw and the imprint of a Chinese phrase that translates as "Grasp the law of nature and make use of it."

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