

2011 Massry Prize

THE MEIRA AND SHAUL G. MASSRY FOUNDATION
KECK SCHOOL OF MEDICINE OF USC

Faculty, staff and students are invited to attend the

2011 Massry Prize Laureates' Lectures

Thursday, October 13th

12 Noon - 1:30 PM

Aresty Auditorium

Harlyne J. Norris Research Tower, Lower Level

A reception will be held in the Aresty Auditorium Foyer at 11:30 AM



F. Ulrich Hartl, M.D.

Max Planck Institute of Biochemistry

“Chaperone-assisted protein folding in health and disease”

The past two decades have witnessed a paradigm shift in our understanding of cellular protein folding. While the three-dimensional structures of functional proteins are determined by their amino acid sequences, we now know that in the crowded cellular environment many proteins depend on molecular chaperones to fold efficiently and at a biologically relevant rate. This role in folding was first demonstrated for the class of chaperones called chaperonins, which provide nano-compartments for single protein molecules to fold in isolation, unimpaired by aggregation. Failure of the chaperone machinery to maintain the conformational integrity of the cellular proteome (proteostasis), may facilitate the manifestation of diseases associated with protein aggregation, such as Parkinson's and Huntington's disease. Motivated by the desire to find a cure for these ailments, researchers are now searching for drugs that can activate the chaperone system, thereby delaying disease onset and prolonging the healthy human lifespan.



Arthur Horwich, M.D.

Yale University

“Chaperonin-mediated protein folding”

A mutant of yeast was originally identified and studied with Ulrich Hartl in which proteins could enter mitochondria but were unable to properly fold. The mutation turned out to affect a large ring assembly, the chaperonin Hsp60. Using the homologous GroEL/GroES system of bacteria we, Ulrich, and others have dissected a mechanism by which this machine provides kinetic assistance through the consumption of ATP to the protein folding process. During the time of our work on mechanism a community of neurobiologists has identified that protein misfolding is associated with a number of neurodegenerative diseases, and we have begun to study a misfolding-induced model of ALS.

Live webcast is available at the following link:

<http://keckmedia.usc.edu/mediasite/Catalog/catalogs/massry.aspx>