Rose F. Kennedy Intellectual and Developmental Disabilities Research Center (IDDRC) Seminar Series
In association with the Diabetes Research Center

Director: Steven U. Walkley, DVM., Ph.D.  Associate Director: John J. Foxe, Ph.D.

“The lysosome as a control center for cellular clearance and energy metabolism”

Andrea Ballabio
Founder and Director of the Telethon Institute of Genetics and Medicine (TIGEM) in Naples, Italy
Professor of Medical Genetics at the University of Naples, and Professor of Molecular and Human Genetics at Baylor College of Medicine in Houston, Texas

LeFrak Auditorium, Price Center
Friday, February 7th, 2014 1:30-2:30 PM

Bio: Andrea Ballabio completed his medical training and residency in Pediatrics in 1981 at the University of Naples. Thereafter, he spent several years working in the field of genetics in Italy, and in the US where he eventually became Professor of Molecular Genetics and Co-director of the Human Genome Center at the Baylor College of Medicine in Houston, Texas. Professor Ballabio’s research interests focus on the biological mechanisms underlying genetic diseases, using both traditional and state of the art genomic approaches. Prof. Ballabio’s team has identified a host of critical genes whose mutations are implicated in the expression of many human diseases. In addition to his many gene discoveries Prof. Ballabio was instrumental in the development of the “expression atlas” of the human genome. Prof. Ballabio has served as President of the European Society of Human Genetics and Council member of the European Molecular Biology Organization (EMBO).

Abstract: Recent evidence indicates that the importance of the lysosome in cell metabolism and organism physiology goes far beyond the simple disposal of cellular garbage. This dynamic organelle is situated at the crossroad of the most important cellular pathways and is involved in sensing, signaling and transcriptional mechanisms that respond to environmental cues, such as nutrients. A main mediator of these lysosomal adaptation mechanisms is the TFEB transcription factor. TFEB is a master regulator of lysosomal biogenesis and autophagy and mediates a lysosome-to-nucleus signaling pathway. This pathway provides the lysosome with the ability to adapt to extracellular cues and control its own biogenesis. Modulation of lysosomal function by acting on TFEB has a profound impact on cellular clearance and energy metabolism and is a promising therapeutic target for a large variety of disease conditions, such as lysosomal storage disorders and neurodegenerative diseases.

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