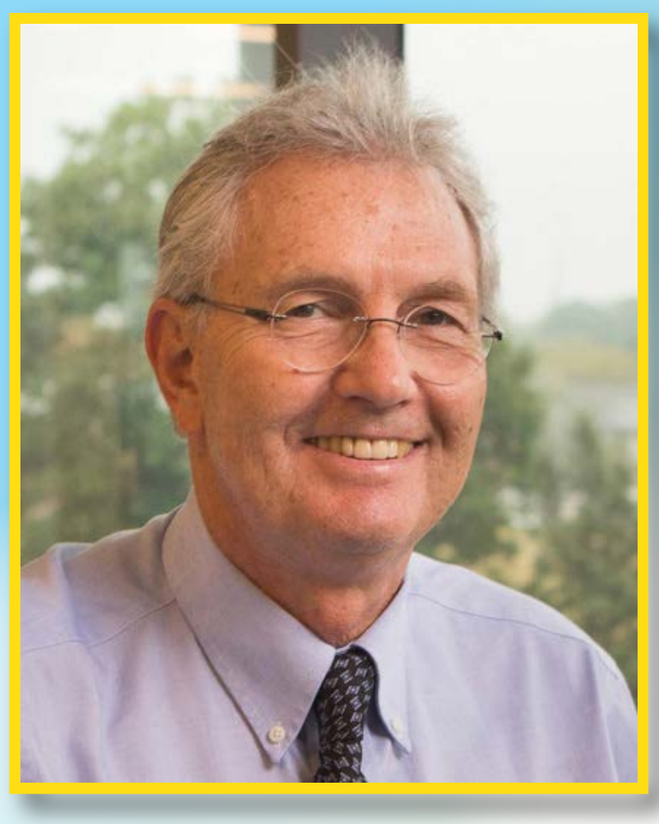
LSU Health NEW ORLEANS

Neuroscience Center of Excellence

School of Medicine

Chancellor's Award Lecture

in Neuroscience



George M. Carman, Ph.D.

Board of Governors
Professor of Food Science;
Chief Scientific Officer of the
New Jersey Institute for Food,
Nutrition, & Health;
Director, Rutgers Center
for Lipid Research
Rutgers University, N.J.

Functions and Regulation of Phosphatidate Phosphatase in Lipid Metabolism

In the yeast *Saccharomyces cerevisiae*, the synthesis of phospholipids in the exponential phase of growth occurs at the expense of the storage lipid triacylglycerol. As cells progress into the stationary phase, the synthesis of triacylglycerol occurs at the expense of phospholipids. PAH1-encoded phosphatidate phosphatase (PAP) plays an important role in this metabolism; the enzyme produces the diacylglycerol needed for the synthesis of triacylglycerol and simultaneously controls the level of phosphatidate for the synthesis of phospholipids. PAH1 expression is induced throughout growth and the induction in the stationary phase is stimulated by inositol supplementation. Pah1p PAP activity is modulated by phospholipids, sphingoid bases, nucleotides, and through the phosphorylation/dephosphorylation of the enzyme. Pah1p phosphorylation is mediated by cyclin-dependent protein kinases Pho85p-Pho80p and Cdc28p-cyclin B, and protein kinases A and C and casein kinase II. The dephosphorylation of Pah1p is mediated by the Nem1p-Spo7p protein phosphatase complex. The location and abundance of Pah1p is governed by phosphorylation/dephosphorylation and the ubiquitin-independent degradation by the 20S proteasome.

Supported by NIH grants R37-GM028140-33 and R01-GM050679-22.

3:00 p.m.
Friday
March 11, 2016

8th Floor
Neuroscience Center
of Excellence
Conference Room

more info: zdavis@lsuhsc.edu