Address to Explore Relationship of Autophagy and Metabolic Disease

Autophagy and Metabolic Diseases” is the title of a state-of-the-art lecture to be presented by one of the founders of the autophagy field on Sunday, Nov. 16.

Beth C. Levine, MD, is the director of the Center for Autophagy Research and the Charles Cameron Sprague Distinguished Chair in Biomedical Science at the University of Texas Southwestern.

Dr. Levine’s laboratory has made fundamental discoveries that have helped to open up a new field of biomedical research—the role of autophagy in human health and disease. Autophagy is an essential, homeostatic process by which cells break down their own components. Dr. Levine’s laboratory identified the mammalian autophagy gene, beclin 1, and defined a role for it and the autophagy pathway in tumor suppression, antiviral immunity, development, cell death regulation, lifespan regulation, and exercise-induced metabolic effects.

For example, Dr. Levine demonstrated how Akt, a gene in the insulin-signaling pathway activated in many cancers, inhibits autophagy by inactivating beclin 1, allowing unregulated tumor cell growth. She has also shown that the epidermal growth factor receptor, which is expressed at abnormally high levels by many types of cancer cells, deactivates autophagy by binding the protein beclin 1, leading to increased rates of tumor growth and chemotherapy resistance in non-small cell lung cancer.

Dr. Levine joined the faculty at Columbia University College of Physicians and Surgeons as associate professor of medicine in 1993. In 2004, she became the Jay P. Sanford Professor and chief of the division of infectious diseases at the University of Texas Southwestern Medical Center. In 2011, she became the director of the newly created Center for Autophagy Research. She has been a Howard Hughes Medical Institute Investigator since 2008.

Dr. Levine is a member of the American Society for Clinical Investigation, the American Association of Physicians, and the National Academy of Sciences. She received the 2014 Stanley J. Korsmeyer Award from the American Society for Clinical Investigation as well as an award for outstanding research from the American Cancer Society.

She received her MD from Cornell University Medical College and completed her postdoctoral training in infectious diseases and viral pathogenesis at the Johns Hopkins University School of Medicine.