"Regulatory mechanisms of heart valve development and disease"

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Lecture: 9:00 AM-10:00 AM
ENGINEERING CENTER
ROOM EC 2300
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Abstract: The focus of Dr. Katherine Yutzey’s research program is the examination and manipulation of molecular regulatory mechanisms of heart development and disease. Her lab’s work over the past few years has established striking parallels in the regulatory hierarchies that control heart valve development and those that control the development of other connective tissue cell types including cartilage, tendon, and bone. In addition they have demonstrated that pediatric and even adult valve disease are characterized by reactivation of developmental gene regulatory programs. The combined analyses of mouse, avian and human systems have led to the discovery that the regulatory mechanisms that control cell proliferation and extracellular matrix organization in the developing heart also are induced in adult valve disease and heart failure. It is not known if these changes in gene expression, matrix composition, and cell signaling reflect the regenerative potential of the diseased valves or contribute to pathogenesis and dysfunction. A current goal of the work is to elucidate mechanisms of heart valve disease by combining studies investigating the regulatory pathways controlling normal heart development with analysis of the molecular progression of disease in animal models as well as human explanted tissue. The long-term goal is to identify new therapeutic targets to treat heart valve disease.

Biography: Katherine E. Yutzey, PhD, Professor, joined the Division of Molecular Cardiovascular Biology at Cincinnati Children's Hospital Medical Center in 1995. She currently holds an endowed research chair from the Cincinnati Children’s Research Foundation. Dr. Yutzey is the first recipient of the Fifth Third Bank/Charlotte R. Schmidlapp Women Scholars Award and was also a recipient of a Children's Hospital Medical Center Trustee Award. Her work is also supported by grants from National Institutes of Health (NIH) and the American Heart Association.

The focus of Dr. Yutzey's research program is the regulation of normal and abnormal heart development with applications to cardiovascular disease. Current areas of research include heart valve development and disease, mechanisms of cardiomyocyte proliferation, epicardial lineage development and cardiac fibrosis.

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