Dr. Sorrentino's research is focused on unraveling the fundamental principles governing the progression of chronic liver diseases. The overarching objective is to leverage this understanding to create innovative disease models, refine cancer treatments, and advance regenerative medicine therapies. Specifically, his laboratory investigates how metabolic and nutritional signals intricately coordinate mechanical communication within hepatic tissue, influencing the regulation of stemness and cancer development. These basic biological questions are addressed using a multi-disciplinary approach that combines mouse models, tissue engineering techniques, and 3D organotypic cultures derived from both adult tissues and human-induced pluripotent stem cells.

In this seminar, Dr. Sorrentino will discuss innovative ex vivo models designed to capture the multifaceted aspects of hepatic tissue complexity, shedding light on the mechanisms underlying metabolic reprogramming in liver stem cells during chronic hepatic injury.