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The research of Professor Abbott is focused on monitoring physiologically relevant, sustainable, human adipose tissues in vitro to gain new insights into metabolic diseases. In Professor Abbott's lab, human adipose microenvironments are being developed and tested for responsiveness to stimuli hypothesized to alter disease mechanisms (i.e. the transition of obese tissues to insulin resistant type II diabetic tissues), metabolic behavior, and therapeutic potential. The lab focuses on integrating systems-based modeling with tissue engineering, perfusion bioreactors, and mechanical studies. Specifically, silk is used as a natural biomaterial to support long term culture of adipose micro-environments in vitro. The ultimate goal is to use these adipose tissue systems to inform preventative and therapeutic measures for patients affected by the metabolic syndrome.

