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**Description of Research:**

The sonic hedgehog (Shh) signaling pathway is fundamental during mammalian foregut development, but a surprising discovery is that Shh is also expressed in the developed stomach. Studies demonstrate that loss of the Shh signaling pathway causes abnormalities in glandular development and differentiation of the stomach, suggesting that Shh may be involved in the maintenance of adult gastric tissue homeostasis. Among the cells in the gastric epithelium, the acid secreting parietal cell is known to be central to maintaining the differentiated state of the adult gastric mucosa, although the basis for this effect remains unknown. Studies in Dr. Zavros' laboratory have shown that Shh is expressed and secreted from the acid-secreting parietal cell. What is unknown is the mechanism by which Shh is secreted from the parietal cell, and whether Shh is directly required for gastric epithelial cell differentiation. Thus, the current focus of Dr. Zavros' research is to define the function of Shh as a morphogen in the developed stomach.

**Collaborations:**

Dr. Zavros is collaborating with Dr. Shull who has experience in mouse genetics and gastric biology. Additionally she is working with Dr Malinowska and Dr. Cuppoletti on experimental design, interpretation of data and the biology of the parietal cell.