At the end of this lecture, students should be able to master the following:

1) Functions of the autonomic nervous supply to the abdominal viscera
   a) Gastrointestinal tract
      i) Sympathetic: decreases motility and absorption; decreases contraction of the circular and longitudinal muscle fibers; contraction of sphincter muscles; and decreased glandular secretions
      ii) Parasympathetic: increases motility and absorption; contraction and relaxation (peristalsis) of longitudinal and circular muscle fibers; relaxation in sphincter muscles; and increased glandular secretions
   b) Pancreas
      i) Sympathetic: decreased secretion of both insulin and digestive enzymes
      ii) Parasympathetic: increased secretion of insulin and digestive enzymes
   c) Liver
      i) Sympathetic: increased glycogenolysis/gluconeogenesis
      ii) Parasympathetic: increased metabolism and secretions
   d) Spleen
      i) Sympathetic: contraction of capsule

2) Overview of the autonomic innervation of the GI tract
   a) CNS origin
      i) Sympathetics - T5-L2
      ii) Parasympathetics – CN X and S2-S4
   b) Splanchnics – transport autonomic fibers from the sympathetic trunk (sympathetics) or spinal nerves (parasympathetics) to the prevertebral plexus
      i) Sympathetic splanchnic nerves
         1) Greater splanchnic – carry sympathetics from the T5-T9 level of the spinal cord to the prevertebral plexus (celiac and superior mesenteric)
         2) Lesser splanchnic – carry sympathetics from the T10-T11 level of the spinal cord to the prevertebral plexus (celiac and superior mesentric)
         3) Least splanchnic- carry sympathetics from the T12 level of the spinal cord to the prevertebral plexus (aorticorenal and inferior mesentric)
         4) Lumbar splanchnic- carry sympathetics from L1-2 level of the spinal cord to the prevertebral plexus (inferior mesenteric and inferior hypogastric)
         5) Sacral splanchnics - sympathetics from L1-2 level of the spinal cord, down the sympathetic trunk to the sacral ganglia in the sympathetic chain. Sacral splanchnics are post-ganglionic sympathetic fibers that exit the sacral ganglia on route to the hypogastric plexuses.
      ii) Parasympathetic splanchnic nerves
         1) Pelvic splanchnics – transports parasympathetic fibers from the S2-S4 spinal nerves to the prevertebral plexus (i.e., inferior hypogastric plexus)