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“Aging, Epigenetics and Colorectal Cancer: Novel therapeutic options for colorectal cancer prevention"

Wednesday, February 5, 2020
9:00 a.m. – 10:30 a.m.
South Campus Research Building 4 (4SCR1.1110)

Synopsis:
Colorectal cancer (CRC) arises from the accumulation of genetic and epigenetic alterations in colon epithelial cells that drive normal colon epithelial cells to undergo an aberrant crypt focus → adenoma → cancer progression sequence. Although virtually all CRCs arise from adenomatous polyps or serrated polyps, it is estimated that only 5% of polyps progress to cancer. Identification of the factors that mediate the malignant initiation and the transformation of polyps into CRC would enhance our ability to prevent CRC by allowing us to identify people at high risk for developing CRC who could then be placed on aggressive surveillance programs or receive chemoprevention therapies. Two prominent candidate age-related processes that may affect polyp initiation and/or progression in the colon are: 1) the pro-tumorigenic effects of senescence via the senescence associated secretory phenotype (SASP) and 2) increased accumulation of aberrantly methylated genes (aka epigenetic drift). We will present the results of studies assessing whether these mechanisms contribute to CRC formation and the mechanisms through which they mediate polyp initiation and progression. Our results suggest novel therapeutic opportunities for colorectal cancer prevention, which will be discussed.

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