



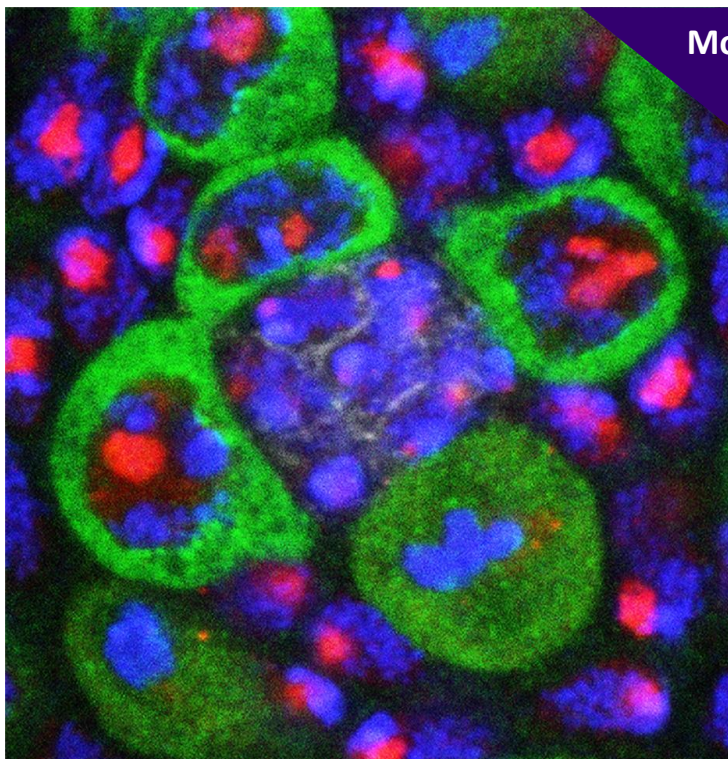
Biology Seminar

By: Yukiko Yamashita

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Asymmetric stem cell division and germ cell immortality



Monday, January 22, 2018 | 12:00pm
HCK 132 Refreshments at 11:45am

Asymmetric cell division is a fundamental mechanism to diversify cell fates. Adult stem cells often divide asymmetrically to generate one stem cell and one differentiating cell to maintain tissue homeostasis. Non-random sister chromatid segregation has been proposed as a potential mechanism utilized by stem cells to protect the genome from mutations or to confer distinct epigenetic information to daughter cells. However, the underlying mechanisms or the biological significance of such a phenomenon has never been directly demonstrated. Previously, the Yamashita

lab has shown that X and Y chromosomes exhibit non-random sister chromatid segregation during asymmetric divisions of *Drosophila* male germline stem cells. Here Dr. Yamashita describes the first identification of cis- and trans-elements that confer non-random sister chromatid segregation to X and Y chromosomes: they found that rDNA loci are critical for non-random sister chromatid segregation and further identified an uncharacterized zinc-finger protein as rDNA binding protein required for non-random sister chromatid segregation. Dr. Yamashita will further discuss the biological meaning of this phenomenon.

