

## **Age-related Changes to Stem Cells and the Stem Cell Niche**

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We would like to present our latest findings on the followings [1]. Abstract template is available  
Adult stem cells support tissue homeostasis and repair throughout the life of an individual. Numerous changes occur with age that result in altered stem cell behavior and reduced tissue maintenance and regeneration. Changes can be cell autonomous including changes in cell cycle progression, decreased bioenergetic efficiency, increased DNA damage, and epigenetic alterations. In addition, poorly understood changes to the local and systemic environments occur that result in decreased stem cell activity or alterations in commitment or differentiation potential. We use *Drosophila melanogaster* and mammalian models to uncover conserved mechanisms regulating stem cell aging and to explore how cellular and tissue aging impact longevity. More recently we have focused on how acute and chronic changes in metabolism can affect stem cell behavior and cell fate decisions. Understanding the mechanistic basis for intrinsic and extrinsic age-related changes will facilitate stem cell based therapies to treat age-onset and degenerative diseases in older individuals.