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**Aging, Regeneration, and Cancer: Understanding Tissue Evolution to Inform
Experimental Strategies for Intervention**

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The interplay between aging, tissue regeneration, and cancer is emerging as a central theme in our understanding of disease pathogenesis. Accumulating evidence supports the view that compromised tissue contexts (e.g., those altered by aging, smoking, or other chronic insults) not only impair regenerative capacity but also create selective conditions that promote the emergence and expansion of preneoplastic clones. I will present findings from our research that illustrate how such altered tissue environments can simultaneously support both regenerative processes and early neoplastic growth, revealing a shared set of permissive mechanisms. This convergence suggests that regenerative biology and cancer evolution may be governed by overlapping cellular principles, such as fitness-based selection and tissue remodeling. Finally, I will highlight potential conceptual and experimental approaches for investigating these phenomena, and discuss how insights from regenerative medicine might be harnessed to develop strategies for cancer prevention and tissue rejuvenation. This integrative framework aims to bridge fundamental biological understanding with translational potential.