

The Melov lab takes a multidisciplinary geroscience approach to better understand the core mechanisms that drive aging. This includes a heavy reliance on multiple model systems, including invertebrate models, mammalian models (the laboratory mouse), human cell lines and tissues, and state-of-the-art genomic technologies that rely on heavy computational methods to better understand how cells and tissues change with age and/or pharmacological intervention.

We must constantly question our own models and data to gain genuine insights into the mechanisms that drive the degenerative changes arising from intrinsic aging processes. A key philosophy of the lab is that it is not enough to enhance healthspan through simple dietary or lifestyle interventions. We argue that such approaches merely fine-tune an organism to survive in its current environment. While worthwhile for generally improving health, such paradigms will do little to uncover the key drivers that limit lifespan. In contrast, we hope to develop novel multidisciplinary approaches in geroscience to develop therapeutics that are effective in reducing or ameliorating the cellular damage arising from endogenous aging processes. Such an approach will pay massive dividends to improve the health and longevity of a rapidly aging world.

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