

**Institute of Aerospace Medicine**  
**Institute Seminar, May 16, 2017, *Abstract***

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**Molecular exploitation of an extremophile mammal: No oxygen, no problem**

Gary Lewin has a longstanding interest in somatosensation and pain, in particular how sensory neurons detect and then transmit sensory stimuli. In the last 15 years, his lab has been working on an unusual model organism, the African naked mole-rat. His lab identified molecular changes that allowed these animals to discard some types of pain. The African naked mole-rat also has many extraordinary physiological features including extreme longevity, extremely low metabolic rate, complete lack of thermogenesis, cancer resistance and an amazing resistance to low oxygen environments. Gary Lewin will describe recent work identifying molecular changes in this species that enable them to cope with the extremes created by living in a bee-like colony, underground, with extremely scarce food resources.