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# Biomimicry -- What we can learn from animals living in stressful environments: lions, dragons, bears and other critters

Hank Harlow

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**University of Wyoming – National Park Service  
2015 Harlow Summer Seminars at the AMK Ranch**

**THURSDAY, JULY 16<sup>TH</sup> 2015, 5:30pm**

***“Biomimicry – What we can learn from animals living  
in stressful environments:  
lions, dragons, bears and other critters”***

**Dr. Hank Harlow, Professor Emeritus  
Department of Zoology & Physiology  
University of Wyoming**

Physiological ecologists take an organ-systems approach to understanding animal adaptations to stressful environments and the natural history of animals in seemingly hostile conditions. Dr. Harlow investigates how the heart, kidneys and muscle are uniquely constructed in different animals to accommodate specific demands. For example, armadillos have unusual drivers of biorhythms; mountain lions, big horn sheep and copperhead snakes have different immune responses to stress; Komodo dragons and polar bears are top carnivores but use skeletal muscle differently in predation strategies; and hibernating black bears do not urinate for five months in the winter while humans will die in just a few hours if their kidneys fail. Biomimicry is the imitation of natural animal systems for the purpose of enhancing human health and performance. Dr. Harlow will discuss how these and other animals make a living in challenging environments and how we can apply it to such things as PTSD in combat-stressed veterans, long distance space travel, prolonged confinement to a hospital bed and acute kidney failure.



***Barbecue at 5:30 with hamburgers, veggie burgers, hot dogs, chips, salads and dessert for a \$5 donation. The talk starts at 6:30 in the historic Berol Lodge at the AMK Ranch. Turn right when entering Leek's Marina parking lot in Grand Teton National Park. Reservations not required.***