IMS Seminar
September 25, 2013
201 O'Neill, 3:30 pm

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Ph.D. proposal, Marine Biology

What makes a year-round athlete?: Seasonal changes in Weddell seal (*Leptonychotes weddellii*) physiological condition and links with diving behavior

During most of the year, Weddell seals are active foragers, spending >50% of their time in water, and only hauling out to rest on the sea ice for short periods of time. However, in early October (the austral spring) female Weddell seals haul out on the ice to give birth and nurse their pups for 6-7 weeks, during which time females can lose ~30% of their body mass. Shortly thereafter, the breeding season begins, and is soon followed by the annual molt. All of these activities keep Weddell seals largely hauled out and inactive for ~4 months (October through January). Limited foraging activities throughout the summer breeding season would not only result in decreased mass and body condition (lipid stores), but may also lead to decreases in oxygen storage capabilities. In particular, decreased exercise and hypoxia exposure may result in muscular atrophy with regard to myoglobin loads and muscle fiber composition. If this were the case, post-molt Weddell seal diving capabilities may be constrained once the animals begin actively foraging again in the austral fall. Therefore, my thesis aims to directly assess 1) the extent that Weddell seal physiology changes during the breeding season and molting period and 2) whether physiological differences are reflected in diving behavior, potentially influencing foraging success.