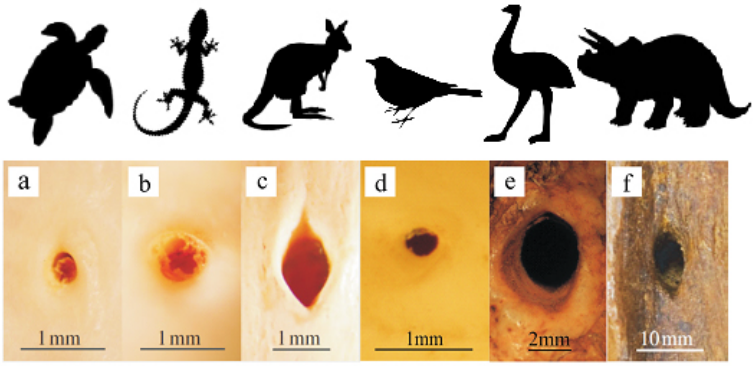
岩手大学農学部附属寒冷バイオフロンティア研究センター主催

95 th CRC Seminar

The effect of body size on the structure and function of the circulatory system of mammals, birds and fossils

Prof. Roger S. Seymour

University of Adelaide, Australia



Body size has an overwhelming effect on the biology of all organisms. Prof. Seymour has been studying how body mass affects the metabolic rates, blood flow rates and the structure of the heart and circulation in vertebrate animals. This lecture shows how the metabolic rate of an organ governs the size of the arteries that supply oxygen to it. It shows why locomotion affects the blood supply to bones to repair micro-fractures, why warm-blooded animals require larger hearts and blood vessels than cold-blooded ones, why the blood flow to the brain is related to brain size and cognitive ability. The knowledge of the structure and function of the circulatory system can be used for the first time to evaluate the metabolic rates of fossils, because some fossil bones have holes (foramina) where blood vessels once passed through. The sizes of the foramina indicate the metabolic intensity of ancient organs. This technique has been applied to fossil dinosaur bones, fossil birds of New Zealand, and fossil skulls of our human ancestors.

日時：４月５日（火）　１５：００ ～１６：３０

場所：総合教育研究棟　１F　遠隔講義室（生命系スペースC）

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