

Dr. Randy Klabacka

Brigham Young University, USA

Disentangling the effects of hybridity and clonality on mitonuclear coadaptation and its role in sexual reproduction

Sex and mitochondria are inextricably linked in the eukaryotic tree of life, a confounding situation given the uniparental inheritance of mitochondria and the biparental inheritance that sexual reproduction entails. Unisexual vertebrate lineages, which arise via hybridization and asexually pass on their genetic material to clonal descendants, provide a uniquely powerful glimpse into the longstanding symbiosis between mitochondria and the eukaryotic cells that house them. Hybridity



IQCB EVENTS

and clonality set unisexual vertebrates apart from other vertebrates and establish a unique genetic environment that shapes their evolution, especially dynamics between mitochondrial and nuclear genomes. Using approaches in genomics, phylogenetics, bioenergetics, and simulated evolution, my lab and collaborators have taken a new angle on the age-old evolutionary question: "Why sex?"