Project acronym: MSV-S

Project title: Association of mating system variation with sex-specific immune function in shorebirds

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Discipline: Life Sciences & Biotech: Veterinary sciences

Station(s): Rif Field Station (Iceland)

Mating systems reflect sex-specific levels of mating success, investment in mate attraction and intra-sexual competition. The competing sex –commonly males– invests heavily on mate attraction in order to maximise their chances of finding a mate. Such investments include, for example, ornamentation, territoriality and agonistic behaviour, and are generally considerably stronger in polygamy than in monogamy. Because this intense intra-sexual competition can lead to physical damage, it raises the question whether this could drive selection of traits that help repairing physical damage, such as inflammation and innate immunity. Here, using predictions from life-history theory and backed up from preliminary data, we intend to conduct an ambitious across-species analysis in order to determine if mating system variation predicts sex-specific indices of immune defence, and how immune defence interacts with gut microbiota. Our work will consist of searching for breeding birds in the field to capture them and sample blood and faeces. The members of the team have extensive experience conducting shorebird fieldwork in different environments and dominate the sampling procedures which are minimally invasive and can be done swiftly to decrease disturbance. These samples will be used to estimate sex-specific immune parameters and as well as gut microbiome. The expected outcomes include answering key question in evolutionary biology, that will have an important impact in wild bird research.