Vocalization is one of the most studied features of birds. So far birds' vocalization has been examined mostly in the context of sexual selection, where a vocalizing individual (usually male) defends a territory or tries to attract a breeding partner. Few recent studies, however, highlight the importance of vocalization in communication between the breeding partners in further parental activities. All these studies have been carried out on species with specific life characteristic (short living, with short-term pair bonds, often sexually promiscuous). Yet, to fully understand all the aspects of vocal communications, it is necessary to study different birds' groups. Seabirds are clearly an understudied group although being quite vociferous, vocalization is thus likely to be of importance in these species. Besides, most seabird species are monogamous, with long lasting pair-bond and bi-parental care. It is very little known, however, how pair bond and shared parental care are established and maintained in seabirds, and whether vocal communication plays any role in that process.

In the present **project we aim to examine in detail vocalization between breeding partners (hereafter vocal display) and its role in pair formation and parental performance in the Little Auk (*Alle alle*).** The Little Auk is a small Arctic seabird, very vociferous, with long-term pair bond and long and extensive parental care performed by both members of the breeding pair. As such, the Little Auk is a good model species to examine the vocal communication between breeding partners. Moreover, our previous studies have shown that Little Auk mate assortatively, i.e. male and female of breeding pair are very similar to each other regarding various traits (e.g. wing length). We have also found that Little Auk parents provision their single chick in a coordinated manner, i.e. deliver food alternately regarding each other. Vocal display has not been examined in the Little Auk while being performed between the breeding partners frequently, thus having a great potential to be a mechanism for pair formation and coordination of parental activities.

Using modern technology and software to register bird's vocalization and behavior, and advanced statistical methods to analyze the complex data obtained, we will first examine in detail acoustic parameters of the vocal display of each pair. This will allow us to document potentially a great variety of vocal signals in the species and establish acoustic parameters that will be used in further analyses. Then, we will analyze how similar and coordinated are the breeding partners in their vocal display, how this vocal similarity/coordination changes over the time (during the breeding season and in regard to the duration of the pair-bond), and how it is related to partners similarity in morphology. Finally, we will examine the relationship between partners similarity/coordination in vocal display and their coordination in parental activities (incubation and chick rearing). We expect that the more time the partners spent together the more vocally similar and coordinated they are. Similarly, the more similar they are in morphological traits the more similar/coordinated they will be in their vocal display. And, finally, the more similar/coordinated partners are in their vocal display the more efficiently and more coordinately they later perform their parental care.

The project will greatly expand knowledge of vocal communication in birds. It will also expand the knowledge on the biology of the Little Auk, one of the most numerous seabirds in the world.