The aim of the project is to trace whether the changes, that took place during the formation of Iron Age societies in the timeframe spanning from ~1,350 BC to ~600 BC, had an effect and left traces on long term population genomic structures and isotopic profiles of human populations inhabiting Central Europe. In order to perform the project, we have gathered and secured a unique set of bone samples suitable for DNA and isotopic analyses, coming mainly from the bi-ritual archaeological sites in present-day Poland and Czech Republic.

In this project we will employ the mix of the state-of-the-art ancient DNA methods including NGS sequencing, to generate high-quality nuclear genomes and to study the genetic history of past human populations of our interest. Moreover, for selected skeletal materials, we are going to conduct AMS ^{14}C dating as well as analyzes of $\delta^{13}C$ i $\delta^{15}N$ in collagen, and $^{87}Sr/^{86}Sr$, $\delta^{18}O$ and $\delta^{13}C$ in enamel. Therefore, we will estimate the time period from which examined individuals come from, reconstruct their diet and establish whether they were borned in the place where their bone remains were found. The end of the Bronze Age and the rise of the Iron Age witnessed some of the most dramatic and widespread social and economic transformations in European prehistory. During this period, important cultural and trade networks were established. This process was undoubtedly connected with the emergence of new social and religious ideologies, as well as new technologies and modes of production. In central Europe those changes are associated with relatively quick spread of first the urnfield phenomenon and then with Hallstatt culture. However, the effect of these changes, observed in archaeological records and connected to events and migrations known from historical texts, on the demography and the genetic legacy of the Late Bronze and Early Iron Age populations is not well understood. This gap is caused mainly by the fact that cremation of the dead became a common burial practice in most parts of Europe during that time and thereby limiting the preservation of genetic material in human bones.

The project will be conducted by the Polish-Czech team within international cooperation. Obtained genomic and isotopic data will help to answer key questions about plausible human migrations and gene flows in Central Europe, and how they are related to the major changes observed in the Late Bronze and Early Iron Age.