**Pattern of human migrations in Iran from Chalcolithic to the age of great empires**
**Description for the general public**

Human mobility (including mass migrations) is traditionally an important area of research for archaeologists who try to reconstruct behaviour of past human groups. Traditional archaeological toolkit in research on mobility includes search for style influences and analysis of spatial and temporal distribution of particular artifacts, as e.g. famous Naue II swords in the Late Bronze Age and Iron Age Europe. However, the output of these methods is always disputable and speculative. On the other hand, bioarchaeology (and more specifically research on human remains from archaeological sites) offers direct and therefore much more reliable insight into patterns of mobility in the past. Within the current project we intend to estimate patterns of mobility in three major phases of social and political development in ancient Iran, i.e. early urban development during the Late Chalcolithic and Early/Middle Bronze Age (c. 4000-1800/1500 BCE), the transitional period (c. 1800/1500-700 BCE) and the period when great empires developed in the Near/Middle East (after c. 700 BCE). The principal method will be the analysis of strontium isotope ratios ($^{87}Sr/^{86}Sr$) in human bioapatite against environmental background. As strontium isotopic values differ between locations with different geological background, in many cases it is possible at least to distinguish between individuals that were born in the area where they were buried from people that migrated during their lifetime. Sometimes it is even possible to estimate the area of origin and some transitional locations. As the area of Iran is highly variable in respect on environmental conditions (humidity and available plant resources), also isotopic indicators of diet may be used as the proxy indicator of mobility. Therefore, the secondary method will be research on carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) stable isotope ratios in human collagen. The isotopic methods are useful in tracing individual mobility. To have also insight into general migrations, we will analyse ancient nuclear and mitochondrial DNA polymorphisms and dental non-metric traits that may offer some insight into general affinities of studied human populations and reveal general directions of mass migrations. Due to large scale of the project (up to 900 individuals studied), its output may contribute a lot to our knowledge of prehistory and early history of Iran.