Is there a link between genetic diversity and IUCN Red Status List in primates?

The IUCN Red List is an important tool for conservation assessment, however, the current IUCN classification does not include measurements of genetic diversity of a given species. Previous studies used different sets of genetic data but failed to link genetic diversity to IUCN status. These studies have one major limitation, as they assessed genetic diversity of a species based on one point in time and do not address whether species disproportionately lose genetic diversity over time, which is essential for conservation. IUCN status may be related to contemporary genetic erosion, yet this is much more difficult to assess because it would require long-term, population-level genetic and demographic data.
To fill this gap, this MSc thesis aims to test whether species' genetic diversity status can be related to IUCN status through the rate and timing of abundance changes in macaques. Macaques are one genus within the primate order with currently 23 species identified. Currently, we have compiled a dataset with long-term demographic and genetic data of individuals (microsatellite genotypes) from 9 species and 19 populations, as well as the species' IUCN status, however more should be collected by the student from the literature. When the data set is compiled, the student will run linear (mixed) models and perform a literature review on population genetics and macaque conservation.

The student will describe genetic diversity and IUCN status over time in the different populations or species and answer questions such as: Can IUCN predict current or past genetic diversity in macaques? Are there some species-specific effects? How does time scale affect the detection of genetic change over time?

The thesis will be co-supervised by Prof. Anja Widdig (Uni Leipzig, Max-Planck Institute for Evolutionary Anthropology, iDiv) and Dr. Anne-Céline Granjon (iDiv). If you are interested, please send an email with your motivation and past experience to anja.widdig@eva.mpg.de and anne-celine.granjon@idiv.de