

Christelle Rutz (PhD thesis)

Project title: Genome evolution in decapods

I am a PhD student at the University of Strasbourg (France) and I work in the Complex Systems and Translational Bioinformatics (CSTB) team of the Engineering science, computer science and imaging laboratory (ICube). I am under the supervision of Odile Lecompte (ICube, France) and Kathrin Theissinger (TBG, Germany).

My research focuses on decapods and more particularly on crayfish which are key species in aquatic ecosystems with a strong impact on the biodiversity of their habitat. European species are currently threatened by the crayfish plague caused by the oomycete *Aphanomyces astaci* introduced by invasive and resistant North American crayfish. Evolutionarily, crayfish are a real enigma with over 170 chromosomes and considerable variation in genome size. I am currently assembling the challenging genome of the threatened noble crayfish *Astacus astacus* (around 17 Gb). This genome will be added to the comparative genomics study aimed at exploring the evolution of decapod genomes, both in terms of repeated elements and gene content. A comparative analysis between genomes of resistant and susceptible crayfish species will also allow us to determine the genes involved in the immune response to crayfish plague.

I am also involved in the MetalInvert project studying soil invertebrates, by performing annotation and comparative analysis of repeats in those genomes with the help of Ljudevit Luka Boštjančić.

