

In recent years the CRISPR-Cas9 system (Clustered Regularly Interspaced Short Palindromic Repeats-CRISPR associated protein 9) has revolutionized genetics holding the promise to become a tool capable to editing and rewriting our genes. Although this technique is already producing amazing results, it is still in its infancy and much research is needed for full implementation.

In the present **project**, we aim to reconstruct early forms of CRISPR-Cas9 endonucleases to be tested in the laboratory. We expect to learn about the evolution of this amazing enzyme, but we also expect to learn how this enzyme achieved its function as nuclease and how this knowledge can be used to improve current variants of Cas9.

Description of the research group:

The **Nanobiotechnology Group** in CIC nanoGUNE is specialist in protein and enzyme engineering using molecular evolution techniques. They apply the so-called Ancestral Sequence Reconstruction techniques that allows for the resurrection of genes from ancient species that lived under the harsh conditions of the early Earth. These genes often display amazing properties related to the ability of ancient species to survive under harsh conditions and securing the spread of life. For more information, see our website at <https://www.nanogune.eu/en/research/groups/nanobiotechnology>

We encourage highly motivated students to join our group and apply for our Master projects. The candidate will develop world-class research in a multidisciplinary group with a vast knowledge in protein biophysics, molecular and cellular biology. The student will learn numerous techniques and use our cutting-edge infrastructure to develop a master thesis project on CRISPR-Cas9 research.

Application:

If you are a master student and you are interested in this project, please get in touch with the scientist in charge: **Raul Pérez-Jiménez** (r.perezjimenez@nanogune.eu).

To apply for a master scholarship fill in the form below and follow the instructions and recommendations of the general call (**open until 30 June 2022**).

NOTES:

(i) All applicants will receive an answer after the end of the selection process; but please note that due to the large number of submissions that are expected, we cannot provide individual feedback.

(ii) Additional information about nanoGUNE's commitment towards HR excellence in Research and Gender Equality are available on our website.

(iii) We encourage you to subscribe to our HR mailing list to receive information related to nanoGUNE's open positions and open calls for different training and talent attraction programs.