**Project title:** Deciphering the cellular basis of limb regeneration

Aztekin lab is looking for colleagues!

Limb regeneration is one of nature's biggest mysteries and has been mainly characterized at the tissue and genetic level. Our research aims to reveal the cellular basis of limb regeneration. We focus on individual cells, cell types, and cellular mechanisms. Our research characterizes epidermal cell types (e.g. ROCs, AER cells) that act as signalling centres critical for appendage regeneration. By secreting high levels of varying mitogenic, chemotactic, and inductive signals, these cell types can influence stem-cell-like and progenitor cells to build a lost appendage. In our lab, we aim at revealing features of these signalling centre cell types, and how they regulate dynamic processes for limb growth and patterning.

We study the limb regeneration potential of cells by following a comparative approach between regeneration-competent *Xenopus laevis* tadpoles, and regeneration-incompetent mice. Research in our lab harmonizes traditional developmental biology and embryology approaches with innovative imaging and single-cell multi-omics methods (e.g. scRNA-seq). Finally, to uncover mechanisms that are not feasible *in vivo*, we develop simplified *ex vivo* and *in vitro* systems, allowing the study of complex limb regeneration in a dish.

We are looking for colleagues that are fascinated by limb regeneration and want to develop and address outstanding questions in this field. Potential projects can be discussed with candidates based on their interest and background. Our projects use different molecular & cellular biology, developmental biology, or computational biology methods. We thrive on combining various fields, and colleagues who have a background in any of these fields but want to explore more are encouraged to apply. You can expect a supportive, fun, and dynamic research environment. Our lab also has a strict policy for a flat lab hierarchy and an open-door mentorship. If you are excited to explore the unknowns of limb regeneration using innovative approaches, please contact us.

Can Aztekin

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**Publications:**

1. **"Secreted Inhibitors Drive the Loss of Regeneration Competence in *Xenopus* Limbs"**, *bioRxiv,* 2020. doi:10.1101/2020.06.01.127654
   **Aztekin C**[*], Hiscock TW[*], Gurdon JB, Jullien J, Marioni JC, Simons BD
   [*]Co-first authors
2. "**The myeloid lineage is required for the emergence of a regeneration-permissive environment following *Xenopus* tail amputation**", *Development*. 2020;147(3):dev185496. Published 2020 Feb 5. doi:10.1242/dev.185496
   **Aztekin C**[*], Hiscock TW, Butler R, Andino F, Robert, J, Gurdon JB, Jullien J[*]
   [*]Co-corresponding authors
3. **"Identification of a regeneration organizing cell in the *Xenopus* tail",** *Science*, 17 May 2019 Vol. 364, Issue 6441, pp. 653-658. DOI: 10.1126/science.aav9996
   **Aztekin C**[*], Hiscock TW[*], Marioni JC, Gurdon JB, Simons BD and Jullien J
   [*]Co-first authors