**PROJECT RESUME**

**TITLE:** Studying the development of independently evolved electroreceptors in teleost fishes

Inner ear 'hair cells' transduce mechanical stimuli (fluid movements inside the inner ear) for hearing and balance. Loss of hair cells leads to deafness, so understanding how hair cells develop, and how they regenerate in other animals, is the focus of much research. In fishes and aquatic-stage amphibians, hair cells also exist in lateral line 'neuromasts' in the skin, distributed in lines over the head and trunk, which detect local water movement. In two different groups of teleost fishes - catfishes and knifefishes, including the electric eel; and the unrelated mormyroids - the lateral line system also includes electroreceptor organs (used e.g., to detect other animals). Electroreceptor organs evolved independently in these lineages, most likely from neuromasts. The aim of this project is to compare candidate gene expression in developing electroreceptor organs versus neuromasts in catfish (potentially also knifefish) and test hypotheses about their developmental and evolutionary relationships.

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