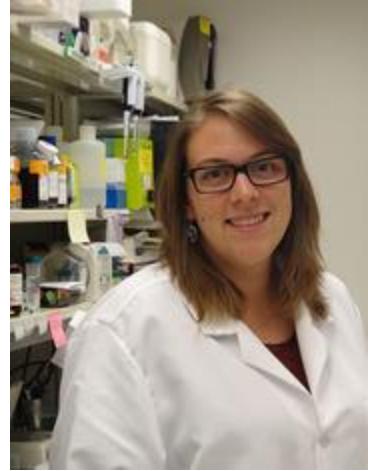


Master internship at Department of Neurology, University of Miami, USA

Yvonne Lasarzewski

As part of my master program Molecular Mechanisms of Disease I performed my second research internship in the USA. Thanks to the scholarship of the Nora Baart foundation I was able to join the group of Professor Carlos Moraes at University of Miami to perform my second master internship and to write my master thesis.

I have a strong interest in mitochondrial biology and read about the work of the Moraes lab in a publication on the manipulation of mitochondrial heteroplasmy. Heteroplasmy means that mutant and wild-type mitochondrial genomes can coexist within the mitochondrial network. If the number of mutant genomes exceeds a threshold of typically 70-90% the wild-type copies fail to compensate for the defects and mitochondrial disease manifests. Up to date no effective treatment has been found yet. By using engineered mitochondrial-targeted transcription-activator like endonucleases (mitoTALENs) which are specifically targeted to the mutated mitochondrial genomes, the mutated genomes get eliminated. Afterwards the mitochondria get repopulated by replication of the remaining wild-type genomes. I was immediately intrigued by the recent achievements of the Moraes lab since their approach might eventually be used to treat or even cure mitochondrial disease. Therefore I was very excited and enthusiastic to join the group for a couple of months. In my project I focused on one specific mutation in the mitochondrial DNA and tested the ability of different sets of mitoTALENs to eliminate mutated mitochondrial genomes and thereby inducing a shift in the level of heteroplasmy. I enjoyed working in the international group of the Moraes lab with members from the



US, Brazil, Argentina, Venezuela, Colombia, Spain, Italy and Portugal and I am sure that I will highly benefit from that experience during my future career. Also outside the lab we did a lot of fun things together from visiting a hippie-festival at the beach, to kayaking at sunset and the moonrise with views on the Miami skyline and to running a 5k run in downtown Miami. For sure I will miss all members of the lab!

Living in Miami was also a great experience. The city has a strong influence from South and Middle America so I got the chance to try a lot of different food and go out for Salsa dancing. And after a long week in the lab I usually tried to go to the beach and enjoy the nice weather.

Performing my second master internship in the group of Professor Moraes at University of Miami was a great experience. I am deeply grateful for the financial support from Nora Baart Foundation.

Yvonne Lasarzewski