**Molecular Parasitology Meeting 2022 (18 September – 22 September)**

**Woods Hole, Massachusetts, USA**

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I attended the 33rd edition of the Molecular Parasitology Meeting in Woods Hole (USA). As the title of the conference implicates, this conference focuses on molecular parasitology. The conference included a wide variety of talks and posters about different parasites, such as *Plasmodium, Toxoplasma, Cryptosporidium* etc. Themes that were presented:

* Genomics and transcriptomics
* Metabolism
* Invasion
* Sexual commitment
* Drug development
* Organelle dynamics, function, and biology
* Parasite motility
* Gaining genetic diversity
* Technical developments

These topics were presented by PhD candidates and post docs from different parasitology labs all over the globe. Not only did this provide a very interesting and broad view of what is happening in the parasitology field, it also gave me the opportunity to present and discuss my own research with other experts in the field. I am currently studying the molecular mechanism of organelle division in *Plasmodium falciparum* parasites. In this project, I aim to visualize the process of organelle division using different advanced microscopy techniques. During the conference, there were several very interesting talks and posters that presented new imaging techniques that could be interesting for my project. For instance, there was a talk given by Ben Liffner from Sabrina Absalons lab from Indiana University, where they presented a technique called expansion microscopy. This is a new and upcoming technique in

which allows a sample to be isotopically expanded by 4-5 times, this way generating higher imaging resolution. This technique is of particular interest to me, since the organelles I am imaging are very small and this technique provides me an opportunity to generate higher resolution, without having to use very expensive super-resolution microscopes. Another interesting talk was presented by Jana Ovciarikova from Lilach Sheiners lab from the University of Glasgow. She presented data showing the existence of nuclear-mitochondrial contact sites in *Toxoplasma gondii* parasites. I am also studying organelle contact sites, so this discovery is also of interest to my project.

I got the opportunity to present my own research in a twelve-minute talk, followed by a few minutes of questions. The talk went well, and I had a lot of interesting discussions about my data afterwards with different people. Additionally, the conference gave me the opportunity to talk to a few big names in the field, which is of course good for potential future job opportunities in their labs. Not only was the conference good for my career, but it was also a lot of fun. I met a lot of great people, and I had a very good time.

All in all, I think this conference gave me a broad overview of current research in the molecular parasitology field. It not only gave me valuable insights in new techniques that I can use or fundamental biological aspects of my project, but it was also a great opportunity to expand my professional network and meet the big names of the field. I am very grateful for the Dutch Society for Parasitology (NVP) for awarding me a travel grant to attend this meeting.

**Abstract: Organelle division in human malaria parasites**

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*P. falciparum* replicates through a process termed schizogony, where up to 32 parasites are formed in a single infected red blood cell and even thousands of daughter cells during mosquito- or liver-stage development. This process requires a tightly orchestrated division and distribution over the daughter parasites of one-per-cell organelles such as the mitochondrion and apicoplast. Although proper organelle segregation during schizogony is highly essential, the molecular mechanism and the key proteins involved remain largely unknown. To unravel the molecular mechanism of organelle division and distribution with unparalleled detail, we are developing novel microscopy approaches including live imaging of fluorescent organelle markers and a protocol for cryo-expansion microscopy. We also aim to identify proteins involved in organelle division. One of the candidate proteins, stomatin like protein (STOML), forms large complexes of as yet unknown composition [PMID:34155201]. We demonstrated that *Pf*STOML has an unusual and distinct localization at the parasite mitochondrion in asexual blood stages, while deletion of *PfSTOML* resulted in a significant growth defect. Our current work focuses on unraveling the exact composition and function of the STOML complex in different life-cycle stages. This research will give us more insights in the process of organelle division and expand our knowledge on a highly essential, and potentially drug-targetable process in the malaria parasite.