



Nathan Jespersen

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Nathan Jespersen is currently a PhD candidate at the Oregon State University, and he was a Chateaubriand fellow in 2018 at the Centre National de la Recherche Scientifique - Gif-Sur-Yvette for 6 months.

In which field did you carry out your research for your PhD and what was your specific area of study?

Biochemistry and Biophysics is my PhD program (ongoing), and my work in France would best be classified as Virology. More specifically, I study Host-Virus interactions at the protein level.

What is your current occupation?

Graduate Student (PhD candidate)

Please give a brief description of the work you completed in France:

My research centers on the interactions between the rabies virus and a specific host protein called LC8, which is important for everything from intracellular transport, to apoptosis (intentional cell death). The rabies virus is extremely lethal (100% once symptoms arise), but a previous study has found that disallowing binding between LC8 and rabies results in completely survival rabies infections (0% lethality). While my lab in the US is a structural biophysics lab, which has allowed me to study this HOW of this interaction, my work in France focused on understanding the WHY. In France we looked at a few specific pathways, like viral replication and immunosuppression, and showed that the dramatic difference is caused, in part, by an inability of the virus to copy its genetic material.

How was your experience as a researcher in France?

Really great! The lab group that I worked with was super friendly, helpful, and knowledgeable about the rabies virus, so I learned a ton. With the exception of the difficulties with paperwork to actually get in, it was everything I could have hoped for!

Comments on your experience as a researcher in France and conditions in your host lab:

There are definitely some distinct differences in the work-life balance between typical US labs and the French labs I interacted with, and it was very interesting to experience both of those perspectives. I also very much enjoyed getting to dig into a different “type” of research than I typically do, allowing me to broaden my areas of expertise. As mentioned above, my work in France was quite different from my US research, so it was great to

be able to culture eukaryotic cells, use a confocal microscope, and of course, actually work with the rabies virus!

Did or will your research in France lead to any co-publications?

It will!

If yes, please describe (name of journal, date of publication):

We currently have one paper related to this work under review, so ideally that will be out soon. We also have plans for a second paper which would include data we collected while I was in France, but have a couple more experiments to do before that is ready for submission.

Did you or one of your supervisors present your work at a seminar? Do you plan on doing so?

Not yet, but I am planning to present this work at the Protein Society

If yes, please describe (name of seminar, date, type of presentation):

Protein Society Symposium, June 30-July 3 of 2019, Poster

In your opinion, did the Chateaubriand Program contribute to closer ties between your US and French labs (why or why not)?

Certainly, we now have some ongoing collaborations related to the work that I did in France, that will hopefully become a publication in the not too distant future!

Did you improve your French while in France?

Bien sûr ! Although my pronunciation still leaves something to be desired.

Do you plan on returning to France in the future?

Definitely.

If yes, please describe your plans:

Not concrete, but I didn't really spend any time in the South of France. So I just have to go back to visit, haven't I?

Did you participate in any extracurricular activities or travel while in France?

Yep, I spent a lot of time exploring and enjoying Paris, took a few mini-trips in the Northern half of France during the weekends, did some rock-climbing, and then finished it all off with a solid month of travel around France/Europe last July. It was a blast!