

Samer Jassar  
University of Windsor  
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## **Progress Report to The Brain Tumour Foundation of Canada's Research Committee**

### **What We Know:**

Thanks to your generosity and support, over the past summer we have begun utilizing our Zebrafish model to examine and analyze the effect of Spy1 on the metastasis of glioblastoma cancer cells. We have determined that the glioblastoma cell line is in fact invasive predominantly when Spy1 expression is up-regulated. Conversely, when Spy1 expression is knocked-down, we observe a drop in the invasiveness of the cancerous cells. Methods such as qRT-PCR were used to ensure that levels of Spy1 were up-regulated or knocked-down. Furthermore, this summer has allowed me to obtain valuable laboratory skills including: culturing cells, running gels, injecting Zebrafish, breeding Zebrafish, proper assembly of shrimp hatchery, imaging using a Leica microscope, and image analysis using a program called ImageJ.

### **Future Directions:**

We examined the potential of metastasis of different cell lines with and without Spy1, but there are still some uninvestigated topics. Future directions include determining the effect of different chemotherapeutic drugs on the invasiveness of the cells, as well as examining the molecular mechanism that is driving these metastatic cells as Spy1 alone does not cause cancer in brain cells.

### **Personal Impact of This Award:**

Conducting research this past summer in Dr. Lisa Porter's Lab has proved to be a valuable experience. The knowledge that I have acquired in such a short period of time is phenomenal. My lab supervisor has taught me several techniques that I will carry with me for the rest of my life in the field of research. Additionally, I have also learned how to think like a researcher and how to ask the right questions. This lab experience has improved my critical thinking skills, problem solving skills, and has helped me integrate a systems thinking to name a few. I have discovered that experiments do not always go as planned and sometimes may take days or even weeks to conduct.

This award has also allowed me to work in an environment with like-minded individuals. Many of the members in the Porter Lab are graduate students or undergraduate students aspiring to enter a healthcare related field. I have become friends with all of our lab members and hope to work with them years down the road.

My goal in my years to come is to obtain a career in dentistry while still continuing research at the University level. I hope to continue making a positive impact in the world by reaching out to others by means of research and by participating in fundraising events. Although

we have not “cured” cancer, our lab has come a long way in the discoveries we’ve made and will continue to work to the best of our ability.

Overall, I am very honoured and fortunate to be given this opportunity. I am looking forward to working in the lab next summer and cannot wait to get started. I would like to thank the Brain Tumour Foundation of Canada for this monumental opportunity. Without your efforts and financial support this would not have been possible, and I am truly thankful.