

# **The Application of Effectively Communicating the Ongoing Science of Transplanting Various Forms of Neural Stem Cells into The Spinal Cord**

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## **Introduction**

Spinal cord injury is a traumatic injury that often results in many different lifelong disabilities. Within the United States, there are approximately 300,000 individuals suffering from spinal cord injury (National SCI Statistical Center, 2020). Spinal cord injury often results in the loss of locomotor and sensory function, bladder and bowel control, and even sexual function. Some of the specific motor functions that can be impacted include, but are not limited to, walking, running, and standing. With the lack of available clinical treatments of spinal cord injury and communication about ongoing studies, individuals are forced to live with these symptoms throughout life with small amounts of hope of a cure.

In the Dulin lab, the research is focused on the transplantation of various stem cells into the spinal cord. This research varies among the graduate students in the lab with cell composition, injury model, and time points of transplantation or injury. This research is done in efforts to find a viable treatment for those who do suffer from spinal cord injury. This summer I have had the opportunity to conduct research under the supervision of Dr. Dulin and PhD candidate Ashley Tucker. This project focuses on how the time of transplantation of neural stem cells may affect the connectivity in the spinal cord. Through this experience I gained knowledge of many necessary laboratory techniques which includes, but is not limited to behavioral testing, immunohistochemistry, cryosectioning, dissections, and perfusions. The analysis of this experiment is currently ongoing and has given me the opportunity to write an Undergraduate Research Scholar thesis through the university's LAUNCH program.

Among society, stem cell transplantation is vastly misunderstood in how the signals are sent through the spinal cord through its specific connections. With such a gap in vocabulary between researcher and patient, information is often misconstrued. To many, the complexity of the spinal cord may be difficult to understand as this area of research is fairly new. With help from the recent technological advances, this field of research has become more feasible. However, as researchers we are tasked with building a map of the foreign territory of the spinal cord and how each connection is made. Many have attempted with their own standards, but due to the high level of complexity there are many overlapping characteristics that restrict us from having a clear understanding of the area. This is an overarching reason to why proper science communication is important. With good communication that not only is palatable to your audience but also efficiently educates them allows for the opportunity of closing the gap between researcher and patient.

## **Purpose and Objective**

The objective of this internship was to establish a meaningful relationship between our target audience of undergraduate students interested in research. This form of communication was intended to be an introduction to the field's jargon in a palatable way so that they are equipped to understand scientific text like journals. The purpose of this science communication was to also highlight the different aspects of being a researcher and debunking the stereotypes placed upon researchers to the public through media. From this experience we also want to raise

the number of supporters of the Dulin Lab and create a welcoming ambiance for our intended audience.

### **Procedures**

First, I had a meeting with my mentor Dr. Dulin to discuss the brand of the lab and what she envisioned it to be. From there we developed a central color scheme for the lab website, which would be the main source of communication to our target audience through video and blog style interviews. Dr. Dulin decided on darker colors like black and plum to allow our fluorescent images to shine. These images are in a sense our maps of the spinal cord and want them to be on display to show others that we are doing meaningful research. In addition to the color scheme for the brand, a call to action was chosen for the lab to give it a unique characteristic while also keeping the audience engaged and active within the research community. The call to action chosen was “Follow the Science”. This call to action can be found strategically placed on the website as a link so that the audience can click on it and be led to more articles pertaining to the topic being discussed.

The sequential step was the creation of a content calendar to schedule interview dates along with the pre and postproduction assignments. The creation of the content calendar allowed me and the participants to effectively schedule around our regular lab duties and keep up to date with consistent content production. Each week the calendar was scheduled with one interview, along with a photoshoot for that interviewee and finally editing of the information into a desired medium for sharing with our audience. Each week's preparation allowed for posting the following week essentially allowing a week for production and a week for edits and promotion creation for our supporting social media pages.

### **Results**

From the data collected from our website provider, there has been an increase in activity on our website. Our audience seems to be very receptive of the information and continues to read our blog posts even in the absence of a proper advertisement on other social media platforms. Members of the lab are pleased with the opportunity to communicate their research with the public in a fun way other than journals.

### **Conclusion**

The process of becoming a science influencer for the ten-week program had its own difficulties that I did not realize until I was already dealing with them. This includes being able to not only perform good research, but also produce quality content that represents the lab well and communicates your topic effectively. Also, the number of technical difficulties that come with media production can be frustrating. Luckily, our content calendar allowed for a number of mistakes to be made before the post date. In all, this experience was very fulfilling and opened my eyes to a career I never knew existed before.

### **References**

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