

## Kiwanis PIP Dr. John Button Scholarship Application – Biography, Essay,

### **Biography:**

My name is Melanie Goens and I am a graduate of the Master of Biotechnology program at the University of Guelph. Currently pursuing my MSc, I am excited to announce my upcoming transition to the PhD program in Pathobiology at the University of Guelph, starting in May 2024.

When I was in high school, I was a Ridgetown Key Club member from January 2011 to June 2015. I also served as a bulletin editor for the club in 2013 and 2014. While I was a Key Club member, I would regularly help with events such as the car smash fundraiser, street clean-up, fish fry, downhill derby, BBQs and bake sales, among others. Beyond local initiatives, I extended my commitment to global causes by participating in the Trick-or-Treat for Unicef campaign and contributing to the global elimination of maternal and neonatal tetanus. Additionally, my involvement in a district convention in PEI broadened my understanding of community service on a larger scale. For my dedicated service, I was honoured with the Libro Credit Union Community Involvement Award, recognizing the most hours of community service in the 2015 graduating class as well as the Kiwanis Foundation of Canada Scholarship.

### **Essay:**

My journey into the pathobiology field is not merely a career choice but a commitment to contribute to the prevention of disease and promotion of health and well-being. As I embark on this academic and professional endeavour, I reflect upon the pivotal moments and influences that have sculpted my trajectory towards pathobiology. In this essay, I will delve into the factors that have shaped my decision to pursue a career in this field.

One of the most compelling aspects that drew me towards science is the transformative impact of vaccines on public health. Through rigorous research and development, vaccines have emerged as a powerful tool in preventing the spread of infectious diseases, saving countless lives in the process. My involvement with Key Club and the collaborative efforts between Kiwanis and UNICEF to eliminate maternal and neonatal tetanus (MNT) played an important role in shaping my interest in vaccines. My involvement in Trick-Or-Treat for UNICEF proved to be a strong influence in shaping my ideas of the world around me. It wasn't just about fundraising; it was about contributing to a cause that had the potential to save lives and prevent needless suffering. Recognizing that my modest yet impactful efforts, alongside millions of others, were making a tangible

difference, heightened my enthusiasm and dedication to the cause. Witnessing the concerted efforts of these organizations to eradicate MNT through strategic vaccination campaigns left a lasting impression on my understanding of two important lessons. (1) That a substantial impact can occur when a collective force unites with a common goal and (2) the transformative potential of vaccines. Both lessons plus the available opportunity to pursue a PhD and continue to make a difference in the world around me fuelled my dedication and confidence to take on my current research topic.

My project that will largely contribute to my thesis for my PhD in Pathobiology, involves the use and engineering of the Newcastle Disease virus as a viral vector containing proteins of interest from Nipah Virus (NiV) and Rift Valley Fever Virus (RVFV) to develop a vaccine candidate that can be used for the vaccination and protection in humans and livestock against these infectious diseases. Both NiV and RVFV are considerable public health concerns. RVFV outbreaks can have significant economic impacts due to livestock losses and NiV outbreaks have resulted in respiratory and neurological illness in humans as well as high mortality rates. The World Health Organization has published a list of nine pathogens that pose the most significant threat to public health due to their epidemic potential and lack of countermeasures available. Both NiV and RVFV are infectious diseases that can be found on this list and have therefore been given top priority status by The World Health Organization. Being involved in research aimed at preventing these infectious diseases from posing a threat to public health is an honour of profound significance and I look forward to the next 3 years of my PhD and every lesson I will learn along the way.