Hi everyone,

My name is Novalia (Nova) Pishesha and I am currently a Junior Fellow at the Harvard Society of Fellows, carrying out my works in the lab of Prof. Hidde Ploegh at the Boston Children's Hospital/Harvard Medical School in Boston, MA. I am looking for 1 to 2 Master's students, who are interested in working with me for at least 6 months on a variety of projects.

My projects revolve around formulating an alpaca-derived single domain antibody fragment (nanobody)-based platform to create novel therapeutics for immune modulation. By incorporating genetic, biochemical, and protein engineering strategies we have uniquely expanded the modularity of these nanobodies, and with just a single dose I have recently shown robust *in vivo* efficacy for treating preclinical mouse models of several autoimmune diseases including multiple sclerosis, type I diabetes, and rheumatoid arthritis, both prophylactically and therapeutically. This treatment works for a lifetime and does not compromise the capacity of the immune system to fight pathogens. I am currently expanding the applications of this technology to several other autoimmune disorders, for protein replacement therapies, as well as precancerous inflammation setting. This single-dose nanobody-based therapy is easier to manufacture and does not require cold storage, allowing for easier distribution and adoption in developing countries. We are also developing this platform technology as a treatment for acute respiratory distress syndrome as well as an efficacious vaccine against COVID-19 and malaria.

Additionally, I have also worked on utilizing genetic and protein engineering techniques to generate high value, multi-functional red blood cells (RBCs). This was my PhD work the Massachusetts Institute of Technology where I employed these engineered RBCs to treat autoimmune diseases and hyperlipidemia, as well as a defense mechanism against lethal bioweapons. There are projects that follow this vein as well.

Please look at some of my works to date:
https://pubmed.ncbi.nlm.nih.gov/?term=novalia+pishesha&sort=date

If you are interested, please contact me by email: novalia.pishesha.168@gmail.com

Sincerely,

Nova