**Statement of purpose**

The dream of becoming a scientist has always been a part of my life. Being raised in an educated and stable family has enriched my life with high values and principles. Education was always given priority and no compromises were made. In addition to being my staunchest supporter, my husband shares equal responsibility for my educational goals, which I consider to be a blessing.

Science has always fascinated me since I was in higher secondary school. The article A decade of molecular cell biology: achievements and challenges intensified my interest in science. At school, despite only being exposed to major concepts in biology, I became intrigued by terms such as cells, genes, tissues, microbes, etc., which led me to apply for admission to SRM University, Chennai, India for a Bachelor of Technology in Genetic Engineering as the main course.

During my graduation, I was exposed to many fields of study such as cell biology, immunology, molecular biology, recombinant DNA technology, human genetics, animal cell culture and transgenic technology etc and I also gained practical knowledge of techniques in the fields of immunology, molecular techniques, recombinant DNA technology, gene expression, animal cell culture, bioinformatics, microbiology in my laboratory classes. During classroom seminars, I was always actively involved in making presentations, which was a significant source of progress in my science learning. In addition, I have coordinated and managed various interdepartmental events that have helped me improve my leadership and communication skills.

During my graduation, I worked on my thesis project “Role of AGT and IL-6 polymorphisms in association with Intracranial Aneurysms in Kerala population" at Rajiv Gandhi Centre for Biotechnology (RGCB), India for 5 months under the guidance and supervision of well experienced and successful scientist Dr. Moinak Banerjee, President of Indian Society of Human Genetics (ISHG). The project involves isolating DNA from both case and control samples and screening for AGT and IL-6 polymorphisms in Intracranial Aneurysm (IA) patients, analyzing the association between the SNPs associated with IA in the Kerala population, as well as comparing genotypic and allelic frequencies of the SNPs among world population.

Even though I had a strong intention to direct my career towards research, I did not get a clear research direction in my early college years. I therefore decided to pursue a master's degree in molecular medicine at the Amrita Institute of Nanosciences and Molecular Medicine.

My postgraduate program in molecular medicine encompassed approximately 20 courses across basic molecular biology and cell biology. The field of cancer biology fascinated me the most. Therefore, I worked on the final year project "Development and characterization of a tissue-engineered 3D prostate cancer model". To evaluate the growth characteristics of prostate cancer cells *in-vitro*, this project involves fabricating a 3D microfibrous scaffold featuring an architecture that replicates the tumor microenvironment that prostate cancer cells are exposed to *in-vivo*. Where I had received more than a year of research experience and I have gained extensive experience in cell culture including 2D and 3D cultures, tissue engineering, protein embedding, staining techniques, electrospinning technique, cryosectioning techniques, microscopy, etc. Additionally, I had been involved in teaching students at the undergraduate level.

The field of immunology also fascinates me and I believe it can be beneficial to not only individuals but also the community and society at large. An ideal professional is not just born from reading books, but I believe that a perfect professional is best cultivated through practice. To gain more practical experience in the field of Immunology, I decided to volunteer in a research and development lab. Hence, I approached TechInvention Lifecare, India in March 2022 as a Research Associate and I am fortunate enough to work with them presently. The current projects involve the development of novel antibodies against SARS-CoV-2, Chikungunya, and CMV. I have gained extensive experience in this position, which includes the establishment of a cell culture facility, meticulous experimental planning to meet program objectives, process documentation and validation, writing standard operating procedures, regular literature mining and keeping up to date with developments in the field of antibody development. Additionally, I have developed an effective communication network with procurement suppliers, researchers, and scientists. During this period, I have gained extensive experience in cloning, plasmid purification, PCR, transformation, cell adaptation into serum free media, transfection, protein purification. Each time I get some findings, I would like to do a detailed analysis of the experiment, try different aspects, and figure out why it is going that way. Unfortunately, due to the limited capabilities of the platform where I am working, I am unable to do more than that. Therefore, I have gained a stronger determination to pursue a doctoral degree and a career in research. In recognition of my passion and sincerity, my management valued me above expectations. With this experience I foresee the University of Nevada, Reno as the right destination to fulfil my dreams and to achieve my goals in research.

There is no doubt that every project and activity I have been involved in has had a significant impact on increasing my confidence, aiding me in understanding different scientific concepts, and helping me to shape my research interests. Therefore, I consider myself a good researcher as I possess the qualities and perseverance required. A doctoral degree in research would provide me with the chance to be a stepping stone to my career as a scientist. Furthermore, I strongly believe that God has always guided me in the right direction and helped me achieve my goals. To study at the University of Nevada, Reno would be an honor since it would be a logical extension of my academic pursuits and an important step toward achieving my goals. I am a stern believer of work ethics, quality and attitude. If given the opportunity, I promise to scale meteoric heights and bring glory to your institution.

Thank You,

Jismi Elsa Abraham

jismielsabraham@gmail.com