

Statement of Purpose

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The conundrum of life encapsulated in a single gene. From Bionic limbs to complete Bionic organ replacement, 3D Microchips simulating as 'organs' with chambers of perfused living cells arranged to function at the organ level in physiology; 'Smart Bones', an amalgam of bioactive polymers, cell nutrients and natural mineral bone structures to mimic the natural bone structures...the sheer potential of Biotechnology is mind-boggling. The science of Life, Biology has captivated my attention since childhood and this fascination only grew to reverence as I delved deeper in the subject. I was in awe of Molecular sciences, Genetics & System Biology, intrigued by its immense possibilities. I was amazed to discover how models from different species can be used to predict behaviour of similar systems in humans; Vital knowledge which can be applied to develop breakthrough medical remedies. A Masters in Biotechnology is a logical progression in my academic trajectory, one that will equip me with profound knowledge in academic and practical aspects of this enigmatic science.

My deeply abiding interest in Biology saw me opting for the Science stream in high school, which I completed with a distinction, a high 86% in aggregate. Determined to unravel the mysteries of Life Sciences, I worked hard to secure admission in the Bachelor of Engineering- Biotechnology at RV College of Engineering, Bangalore. College virtually opened the doors of a whole new world for me. Molecular Biology and Genetic engineering provided overall insights of structural and functional aspects of genes, mutations and other vital aspects. Studying Bioinformatics gave me practical exposure to protein sequence analysis and Insilco drug design while I explored various enzymatic reactions in Biochemistry. With an aim to apply and test my learning practically, I immersed my self in various projects during my under graduation.

My major project on the Synthesis of ZnO Nanoparticles and Development of ZnO- Lignocellulose Composite Material for Food packaging application was highly experimental. I employed the techniques of UV visible spectrophotometer, FTIR and XRD to synthesize ZnO-Chitin nanoparticles using Zinc acetate di-hydrate and chitin flakes. It was a proud moment for me when my term project and subsequent paper on "Bioremediation of Heavy metals using Carbonized Kapok Fibres" in National level Student Symposium at NIT Surathkal won the second prize. Study of Kapok fibres for their properties and performance as oil sorbent for diesel, engine oil helped me to capitalise on the same. Apart from practical implementation, I also learned the importance of collaborative teamwork, planning, preparation and interpersonal skills required for a project's successful implementation. I also honed my skills working on transcription factors project, validating signalling network of over 700 transcription factors. Additionally, I also completed "Foundation Program under the aegis of the Infosys Campus Connect Program" to prepare for real world experience. Yoga and meditation is close to my heart, and was the driving force behind taking up an

International Yoga Course (200 hours) from Heartfulness institute. I also undertook a one-year PG Diploma in advanced yoga sciences from Annamalai University thru distance learning and have been undertaking Meditation and Yoga Training for students as a hobby.

Post my graduation I joined Cellworks Research as a Level IR & D Scientist. It was here that I put my undergraduate learning into practice and gained expertise in extracting transcription factors for gene activation, defining TS/TP role for over 200 genes and predicting personalised therapies for cancer patients. Deploying the techniques of data mining and interpretation of scientific data, I worked on developing mathematical models representing Human Physiology. Learning about signalling systems in different cancers and modelling oncogenic pathways for clinical therapeutics predictions has been a learning experience. I have worked on NFKB pathway, Regulation by DNMTs and Ribosomal Stress pathways along with signalling such as EGFR , NFKBI, MYC-MAX, FOS_JUN, MTORC1/2, CTNNB1,TP53 to come up with novel and succinct therapy predictions. My dedication and perseverance was noted and duly recognised by the company management resulting in the Strong Contributor Award in Jan 2016 and the Hall of Fame Award in July 2017.

Extrapolating my learning and experience in the industry, today I find myself drawn towards research and development in this dynamic field. My experience at Cellworks has not only augmented my learning but also fuelled my passion for innovation and cutting edge research to create something of lasting value for the society.

As a candidate for Post-graduate study in Biotechnology at _____ University, I am positive that this immersive program will empower me with the requisite skills and wetlab expertise that will act as a catalyst in my career. Undoubtedly, Australia is one of the most popular international student destinations with world-renowned universities and universal recognition. My research about _____University left me highly impressed with the state-of -the-art research facilities & laboratories and its extensive curriculum, which is constantly updated and whetted by industry experts. Networking within the scientific community under the guidance of eminent professors like Dr.promises to be a stellar learning experience. I am keen to delve deeper into Bioinformatics, Advanced Biotechnology Research methodology, Gene Technology, Genomics and Proteomics under this nurturing research environment. Furthermore, the program incorporates real world industry experience and an opportunity to analyse real-world data in their research projects. I also look forward to being a part of the multi-cultural student community at _____, sharing knowledge and experiences. A front runner in both academics and co-curricular activities, I have been an NCC Cadet and have organised several technical events at 'Helix', the college fest.

My career goals are geared towards research and development and I am positive that an MS from _____

will equip me with the high level skills and knowledge to address challenges in gene and protein technologies, microbiology and bioinformatics. Eventually, I am keen to apply my knowledge and training to propel my career in the right direction by returning to India and working as a Research Scientist in top Biotechnology firms like Quintiles, Paraxel, Biocon, Dr.Reddy's laboratories, etc. In the long-term I wish to carry out research on how regular practice of meditation can alter genetic patterns and control stress levels and overall health. I am confident that a leading edge Masters degree, an exposure to current advances in Biotechnology with an international perspective will lay a solid foundation upon which I can build a meaningful career. Finally, the credibility, confidence and experience of a Masters from _____ are all I need to embark on an innovative and intensive research journey in Biotechnology.