Sustainability, Energy and Environment Complex
4001 Discovery Drive, Boulder, CO 80303

September 4, 2018

Dear Dr. Gill,

After being introduced to the potentials of recombineering by Dr. Jim Sawitzke and having had the opportunity to apply recobineering in some projects, I am ready to expand on my hands-on experience and help engineer new strains in your lab. My experience in engineering and analyzing microorganisms like algae, cyanobacteria and *E. coli* combined with my understanding of CRISPR/Cas systems in general and the Synechocystis CRISPR/Cas system in particular, has prepared me to test new genetic tools in a variety of organisms. The team spirit and interpersonal skills I developed during the iGEM (international Genetically Engineered Machine) competition, and the initiative and ability to adapt to new situations I have displayed while working for Dr. Jim Sawitzke ensure that I can quickly transition to your lab and begin making contributions from day one.

For my M.Sc. thesis I explored the use of the endogenous CRISPR-Cas system of Synechocystis sp. PCC6803 in metabolic engineering and thereby further characterized the Synechocystis crRNA maturation endonuclease Cas6-1 *Publication*. This experience has prepared me to analyze, translate and reengineer the functionality of CRISPR/Cas systems for other purposes. During my M.Sc. I participated in an interdisciplinary team of 20 students to develop a low-cost, multiplexed and label-free diagnostic tool in the iGEM competition. Within eight months of wet lab we produced high-value *data*, presenting our findings on our *website* and at iGEM's international conference at MIT, where we were awarded a Gold medal and nominated for Best Health and Medicine Project, Best Innovation in Medicine and Best Wiki. Throughout iGEM we successfully ran our own lab independently, including ordering, preparing and sterilizing reagents, communicating with companies and funding agencies and keeping the lab and our data organized.

After my M.Sc. I began working for Dr. Jim Sawitzke in the Genetic Engineering Facility of at Europe's flagship laboratory for the life sciences (EMBL). There I gained hands-on experience with oligo recombineering and fragment deltion on a plasmid using the LambdaRed system and in vivo cloning using the RecET system. Soon after I started, the facility evolved into being the Genetic and Viral Engineering Facility. I quickly adapted and engaged myself in implementing new protocols for the production and quantification of viral vector tools in mammalian cell culture. Initially our two person team only provided recombinant AAV, however, as my skills progressed, our portfolio has expanded to include recombinant lentivirus and we are in the process of adding HSV. In addition to the laboratory work, I have taken the initiative to extend the facility's database and automate calculations for protocols using Excel and Filemaker, helping streamline the lab and more consistently produce and record valuable data. Furthermore, I am continually applying techniques I learned from a professional development course on project management for scientists across more than 12 projects to deliver high quality final products in a timely fashion to our partners.

Although EMBL offered extensive experience in the lab and provided room for growth, the research focus on neurobiology and epigenetics is simply not after my own heart and I would rather like to use my knowledge about recombineering and CRISPR/Cas systems towards developing the next generation of clean fuels and chemicals. If you agree, I would appreciate the opportunity to discuss any potential position and my contributions in more detail. Thank you for your time and consideration, I look forward to hearing from you.

Sincerely,

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