SEEC UCB 027
4001 Discovery Drive, Boulder, CO 80303

September 6, 2018

Dear Dr. Gill,

After an introduction to the potentials of recombineering by Dr. Jim Sawitzke and an opportunity to apply recombineering in several projects, I am ready to expand on my firsthand experience and help engineer new strains in your lab. My training in engineering and analyzing microorganisms like algae, cyanobacteria and *E. coli* combined with my understanding of CRISPR/Cas systems, has prepared me to test new genetic tools in a variety of organisms. Furthermore, 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.

For my M.Sc. thesis I explored the use of the endogenous CRISPR-Cas system of Synechocystis sp. PCC6803 in metabolic engineering and 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. During my M.Sc. I also 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 and Best Innovation in Medicine. 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 organized.

After my M.Sc. I began working for Dr. Jim Sawitzke in the Genetic Engineering Facility at Europe's flagship laboratory for the life sciences (EMBL) in Rome, Italy. There I gained hands-on experience with oligo recombineering and introducing knock-outs 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 to deliver high quality final products in a timely fashion to our partners in currently over 12 projects.

Although EMBL offered extensive experience in the lab and provided room for growth, its research focus is simply not after my own heart and I would rather like to use my knowledge of recombineering and CRISPR/Cas systems towards developing the next generation of clean fuels and chemicals. Should you be interested, 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,
Rabea Jesser

Via Ramarini 32, Monterotondo RM, 00015 • +39 (388) 059 1507 • rabea.jesser
rabeajesser@web.de • https://www.linkedin.com/in/rabeajesser/