

Dear Dr. Phil Pienkos,

«««< HEAD I am fed up with being a contributor or at least a bystander in the destruction of our livelihood the environment—I want to be part of the solution and have an abiding desire to contribute to the National Bioenergy Center's efforts to find sustainable alternatives to fossil fuels. Having focused on algae and cyanobacteria during my B.Sc. and M.Sc. theses, having participated in the iGEM (international Genetically Engineered Machine) competition and having worked for Europe's flagship laboratory for the life sciences in Rome, I bring the necessary background knowledge and the enthusiasm, strong work ethic and eagerness to learn to make up for any deficiency.

===== I am fed up with being a contributor in the destruction of our livelihood the environment—I want to be part of the solution and have an abiding desire to contribute to the National Bioenergy Center's efforts to find sustainable alternatives to fossil fuels. With the experience in working with algae and cyanobacteria I acquired during my B.Sc. and M.Sc. theses, the strong team spirit and work ethic I developed at the iGEM (international Genetically Engineered Machine) competition and the adaptive capacity I showed as a Technical Officer for Europe's flagship laboratory for the life sciences in Rome, I bring a solid background knowledge and the enthusiasm and eagerness to learn to make up for any deficiency. .

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For my theses ([Publication](#)) I manipulated and analyzed algae (*P. tricornutum*, *N. oceanica*) and cyanobacteria (*Synechocystis* sp. PCC6803). More specifically, I used different transformation methods, analyzed their protein and RNA expression and explored the endogenous *Synechocystis* CRISPR-Cas system for application in metabolic engineering. The wide array of lectures and courses I took in biochemistry, translational biology and microbiology has left me with a solid foundation to learn and develop new procedures and protocols in the lab. As an example, during a reorganization of my current lab, I consulted relevant literature to establish standard protocols for the production and quantification of viral vector tools in mammalian cell culture. Due to the reshaping I also started working in a BSL2 environment and am aware of the importance of stringently following safety guidelines and maintaining a safe working environment. Our facility currently only consists of my supervisor and me, meaning I not only produce high-quality viral vectors and genetic constructs independently, but also maintain a functional laboratory and took the initiative to improve the facility's database (FileMaker)—leaving me with excellent organizational skills I will invest to ensure accurate data recording and storage at the NBC. I have also attended a professional course on presenting with impact and project management for scientists and am able to apply these techniques to balance multiple projects—currently more than 12 at once—while managing my time to deliver final products as quickly as possible.

For the iGEM competition I participated in an interdisciplinary team of 20 highly motivated students. Within a month we agreed on an influential topic, and after only eight months of wet lab we produced high-value [data](#), finally presenting our team's findings on our [website](#) and at an international conference. This experience has not only left me with a strong work ethic, but also with the ability to efficiently identify the essentials from scientific findings and to present these in a comprehensive way to my team and a wider audience. During this time we successfully ran our own lab independently, including ordering

reagents, communicating with companies and funding agencies for financial or material aid, making and sterilizing media and keeping the lab and our data organized.

Given my skill set I believe I could make valuable contributions to NBC's team and it would be an honor to contribute to your research into algal biofuels. 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,

Rabea Jesser