Investigation of Cellular Morphologies of the Biofuel-producing Bacteria Clostridium: Applications in Industrial-scale Fermentations

My hope is that my mentee will have a challenging, rewarding, and useful experience in improving a microorganism with promise for industrial biofuel production. By undertaking this project with an emphasis on independence and creativity, I hope that my mentee is able to achieve our mutual academic goals for this project, while preparing her for future research endeavors.

Nico Herman, Ph.D. candidate
Chemical & Biomolecular Engineering

Originally from Chicago, I received my B.S. in Chemical Engineering from the University of Wisconsin-Madison in 2012.

After coming to Berkeley, I began working in Wenjun Zhang's Group in the Department of Chemical and Biomolecular Engineering.

My goals for the SMART program include gaining insight into the metabolism and life cycle of biofuel-producing bacteria, guiding Ripika to achieve as much as possible in a short timeframe, further develop mentoring skills, and encouraging her to have a fun time conducting research!

Ripika Bedi
B.S. 2015, Chemical Biology

I recently graduated UC Berkeley with a major in Chemical Biology and minor in Bioengineering.

This summer, I hope to discover a gene or multiple genes that have either a positive or negative effect on solvent production in a strain of clostridia, which are anaerobic bacteria.

I hope this work can be used in the future to optimize butanol production in this strain for use as a biofuel. Overall, I want to refine my skills and gain the confidence and ability to think as a scientific researcher.

UC Berkeley's Student Mentoring And Research Team (SMART) is a paid professional development program that engages doctoral students in creating mentored research opportunities conducted with selected undergraduate student mentees during a ten-week period over the summer. Both participants receive compensation and training throughout their participation. SMART broadens the professional development of doctoral students and fosters research skills and paths to advanced studies for undergraduates.

Expenses associated with each team total $10,000 000 ($5K graduate stipend/ $3.5K undergrad stipend/$1.5K research and conference costs). As a donor-supported program of the Graduate Division, the majority of teams are underwritten through a combination of donor funds paired with matching support courtesy of the Graduate Division.

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