

Chico State Capstone Design Program – Project Request Document

Project Title: **Small-Scale Biodiesel Pre-Processing Unit**

Sponsor: Springboard Biodiesel

Suggested team make-up: Mechanical students: 90% Mechatronic students: 10%

Background: Springboard Biodiesel sells small-scale biodiesel processors that convert vegetable and animal feedstock into ASTM-D6751 biodiesel, which can be used in any diesel engine. The Company’s customers generally use - as their primary feedstock - used cooking oil (“UCO”) collected from restaurants. As a result, they often experience significant oil stock variability between processing batches. The three primary obstacles to biodiesel production are 1) the water content of the UCO, 2) the Free Fatty Acid of the UCO (the higher the FFA, the harder it is to convert into biodiesel) and 3) the external particles, which often attract H2O and can clog the processor’s filters or pumps.

Statement of Work:

The student group will design, develop and build a UCO Pre-Processing unit that will remove particulate matter and water from used animal and/or vegetable oil, leaving the user with extremely dry and filtered UCO for use as feedstock in biodiesel production. Detailed specifications for size, approximate cost, and necessary finished oil properties will be established in consultation with the sponsor

Contact information:

Mark Roberts, 530.894.1793 | mark@springboardbiodiesel.com
Todd Swagerty, 530.894.1793 | todd@springboardbiodiesel.com

Additional Information:

Please indicate if the project will require any of the following, or have other special circumstances.

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| <input checked="" type="checkbox"/> Non-Disclosure agreement | Students will be required to sign a standard NDA. Some |
| <input type="checkbox"/> Out of town travel | onsite work will be required at our Chico facility. |
| <input checked="" type="checkbox"/> On site work | |
| <input type="checkbox"/> Other | |

Corporate Overview:

Springboard Biodiesel is a small-scale biodiesel equipment manufacturer. Based in Chico, CA, the Company manufactures, markets and sells small-scale biodiesel processing equipment.

The Company's current product portfolio is focused on the small-scale biodiesel production equipment market. Springboard's equipment enables production of ASTM-grade biodiesel from vegetable and animal oils. The Company's products are differentiated by their industrial-grade construction, patented design, full automation, flexible feedstock processing capability and the ability to deliver repeatable ASTM output. Springboard's engineers design and build solutions that delight its customers. They do so by answering "Yes" to three questions: Is it clean? Is it cool? Is it clever?

