

# Introduction

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This semester concluded Amanecer's fifth year of solar cooker research and design. The project was founded in 2005 and has since established a partnership with Grupo Fenix, a renewable energy group at La Universidad Nacional de Ingenieria in Nicaragua, and Las Mujeres Solares de Totalgalpa. Research is conducted primarily in the Bovay Laboratory Complex in Thurston Hall at Cornell University.

Solar cookers are one approach to reducing the global need to burn dung, brush, and firewood for cooking, a problem that affects two billion people around the world, particularly in developing countries.<sup>1</sup> The practice leads to respiratory illnesses, deforestation, and pollution, in addition to placing an economic and social burden on families that must purchase fuel or divert significant time toward collecting it. Our annual visit to Sabana Grande, Nicaragua provides the team with a local perspective on this global issue and allows for productive technical exchanges with Las Mujeres Solares de Totalgalpa.

A large portion of the team's Spring 2010 efforts were devoted to continuing work on a prototype concentrating solar cooker designed and built in Fall 2009. The design concept was tested both in the field and via computer modeling, and new design concepts are being explored based on the lessons learned. The trip to Sabana Grande was a focal point of the semester during which we shared our progress on this front and developed research questions to explore further concerning the box ovens. Several members of the team subsequently began laying the groundwork for a new experimental setup that would allow future teams to explore questions relating to box oven insulation and construction techniques. We believe that this semester's endeavors contributed meaningfully to the pursuit of improved solar cooking solutions for Sabana Grande and similar communities, and future teams should find themselves well equipped to continue furthering the goals of Engineers for a Sustainable World.