

FAMU-FSU College of Engineering

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Problem

- Following a natural disaster, loss • of grid power results in an inability to keep temperaturesensitive medications cool by conventional methods, causing a spike in preventable deaths
- One study estimates diabetes related deaths increase by 40% following a hurricane

Solution

- Medi-Kool is a portable storage device for temperature sensitive medication that runs on its own power source
- Medi-Kool will protect medicine and save lives

Design

The current design utilizes a \bullet portable cooler and a Peltier plate (fig. 1) powered by a battery and solar panel. A heat sink and fan is secured to the hot side of the Peltier plate to draw away heat. The cold plate is secured to the cold side of the Peltier plate and is equipped with straps to hold a full prescription of insulin. Power is regulated by a temperature control switch to keep its contents at the correct temperature

Thermoelectric Cooling Module equipped with fan, heat sink, Peltier Plate, and custom cold plate



Medi-Kool



Housing for Temperature **Control Switch and buck** converter

Special Thanks to our advisors Dr. Shyane McConomy and Dr. Michael Devine as well as the FAMU-FSU College of Engineering for sponsoring Medi-Kool



Compartment for foldable solar panel

Ventilated and heat shielded battery compartment

Entrepreneurship Competitions • Won 'Most Scalable' Prize at the

- Jim Moran College of Entreprenyership inNOLEvation Challenge
- Selected to represent FSU at the ACC Inventure Prize Challenge