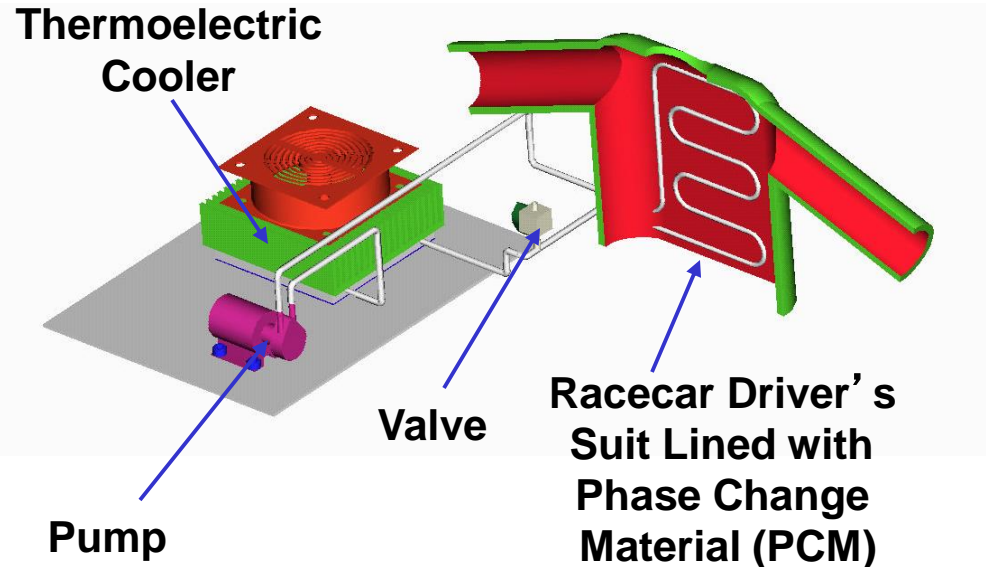
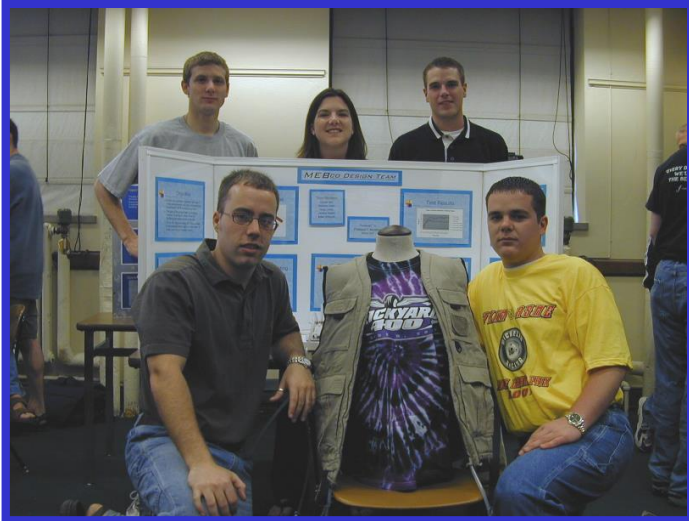


# Racecar Driver Cooling Suit

**Project:** Racecar Driver's Cooling Suit Utilizing Thermoelectric Cooler, Liquid-Pump Loop, and Phase Change Material

**Team (L to R):** Daniel Bihl, Greg Lewis, Lindsey Martin, Stephen Haan, and Brian Williams



## Project Motivation

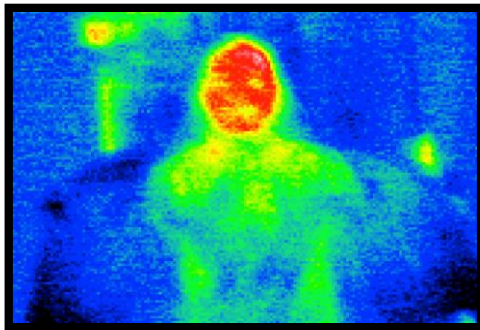
Racecar drivers exposed to some of the harshest environments in sports: ambient temperatures of 140°F, races up to 4 hours long, and no cooling air flow through safety suit

## Objective

Design a cooling system for driver to increase their comfort during the race, thus increasing their performance and safety. Cooling system should satisfy the following requirements: (a) remove 150 W, (b) weigh less than 15 lbs, (c) pull less than 18 amps from car, (d) maintain driver comfort, and (e) uphold racing regulations (safety, etc.)

**The cooling system is comprised of three main components:**

- Pump which circulates water throughout suit
- Thermoelectric cooler which cools water as it circulates inside tubing embedded in suit
- Phase Change Material (PCM) which absorbs heat by changing phase (melting) to maintain a constant temperature



**Thermal Image of Test Driver with Cooling Suit Open**



**TEC Assembly and Water Pump**

