

# EASY EMBER: EMBER GENERATOR

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## Objective

To create a portable ember generating device capable of outputting a steady stream of embers for 15 minutes without refueling that enables College of Natural Resource's researchers to test the fire resistance of building materials

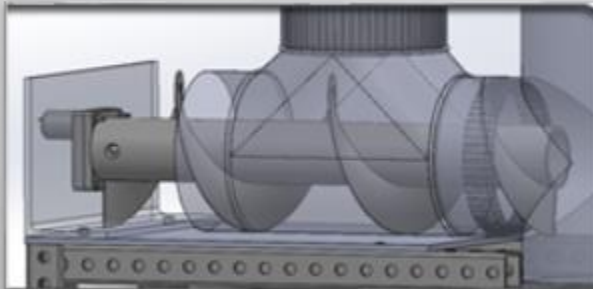
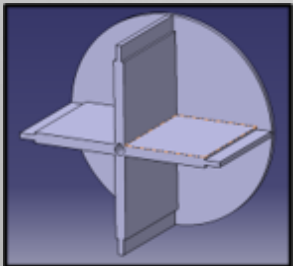
## Background

- Starting Point: NIST Baby Dragon
- Modified design to meet client needs:
  - Mobile and transportable
  - More autonomous
  - Remote controls

## Key Requirements

- Ember stream: Continuous for 15 minute without reloading fuel source, enough to ignite building materials
- Size: Able to be transported in bed of truck
- Controlled remotely
- Safety: emergency shutdown
- Durability: last 5+ years, handle up to 1400 °F
- Budget: \$3100
- Electric: 120 VAC, 15amps
- Flame source: propane

## Woodchip Feed Mechanism – Wheel vs. Auger System



## Final Design/Current Prototype



## Final Steps

- Install motor, propane shutoff, and control system
- Design fireproof feed system
- Begin plasma cutting expanded stainless steel
- Further testing with full hopper and new nozzle

# Testing

