Team 16: The Nuclear Family

EN-FISSIONING A SUSTAINABLE FUTURE.
Team Members

Thane Symens  
Mechanical

Meredy Brichford  
Chemical

Joel Smith  
Mechanical

Christina Headley  
Chemical
Problem & Customer

- Problem: Energy Crisis
  - Fossil Fuels
  - Renewables
  - Uranium
- Customers
  - Reactor: Electric Companies
  - Fission Products: NASA,
  - Medical Research
Thorium is the Solution

- Our Project
- Benefits of Thorium
  - Abundance
  - Energy Density
  - Plant Safety
  - Desired Fission Products
    - Plutonium - 238
    - Bismuth - 213

Alternatives

- Continued use of fossil fuels
- Renewable technologies
- Enriched U-235 as fuel
- Other fertile materials
- Fusion Reactor

http://thinkprogress.org/climate/2013/03/29/1791811/bombshell-imf-study-united-states-is-worlds-number-one-fossil-fuel-subsidizer/
Faith/Design Norms

- Caring
  - meeting energy needs
- Stewardship
  - Reduce Carbon Footprint
- Trust
  - reliable design

https://sites.google.com/a/ecacs16.ab.ca/natural-resources/home/environmental-stewardship/ens-1010-introduction-to-stewardship
Obstacles

- Negative Stigma with Nuclear Energy
  - Disasters
  - Radioactive Waste
- Depth of Project
  - Background Research
  - Access to needed information
- Inability to create prototype

http://en.wikipedia.org/wiki/Chernobyl_disaster
Current Status

- Fuel selected
- Exploring reactor types
  - Thermal
  - Fast
- Contacting outside references
  - Thorium Energy Alliance
  - FLiBe Energy

Questions?