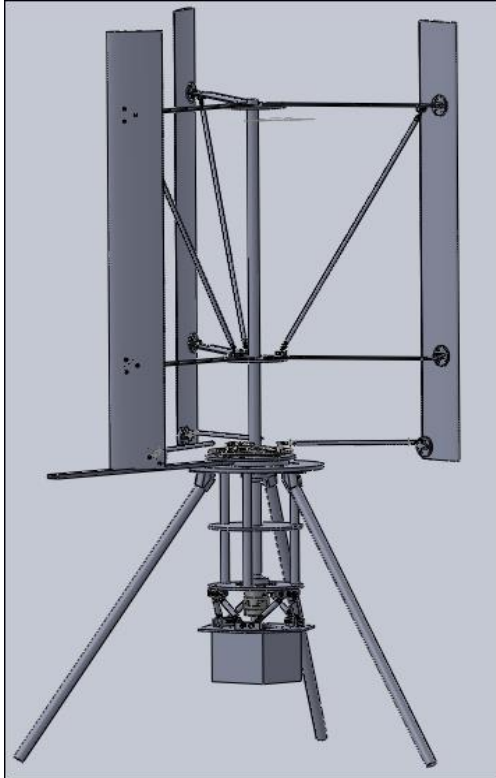


# AF Energy Inc.

## Vertical Axis Wind Turbine



### Team:

Jamal Kotifani, Ethan Nimens, Andrew Kasper, Van Wifvat (Lead)

### Advisor:

Dr. Greg Mowry

### Industry Representative:

John Alexander, Steve Fuchs

### Project Summary:

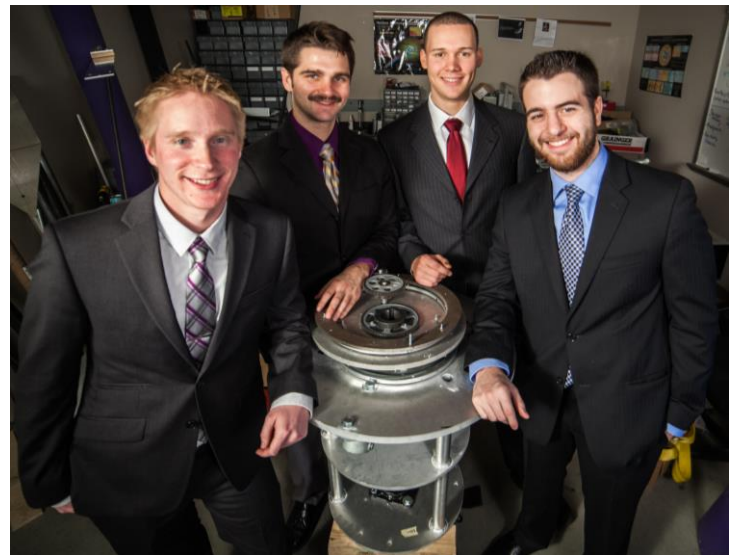
A local startup company, AF Energy Inc., requested St. Thomas engineering students to develop a fully functioning prototype wind turbine to evaluate a patented pitch control mechanism. A successful prototype was defined to have the following components:

- Strong, easy-to-interface central frame
- Low-friction turbine blade connections
- Simple, adjustable electric generator mounting system
- Turbine leveling system
- Gear-train force analysis
- High tolerance, low-friction, adjustable pitch control system

This turbine is unique in that the turbine blades change their angle of attack to better harness the energy of the wind. For the angle of attack to change, the critical mechanisms must operate with minimal friction.

### Design Goal:

This team was tasked with creating a fully functioning, power generating, vertical axis wind turbine.



### Design Constraints:

- Setup in under two hours
- Weigh under 800lbs
- Must be able to operate consistently in different environments
- Able to ship in standard military container