



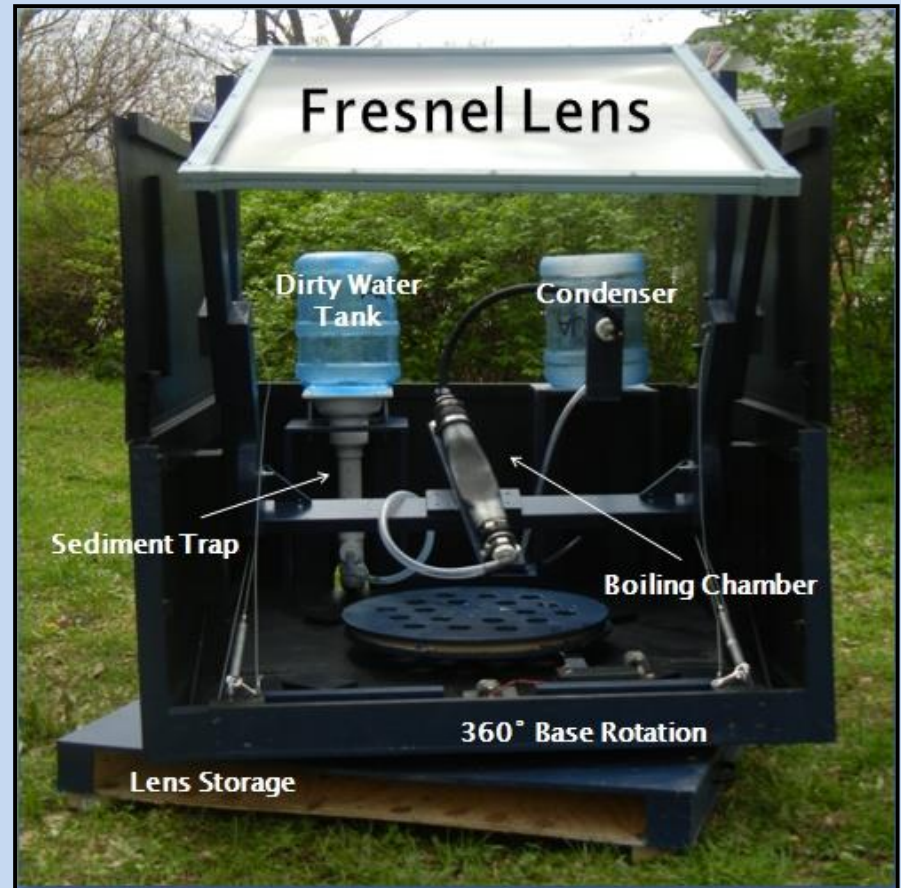
## Utilize Solar Energy to Purify and Desalinate Water

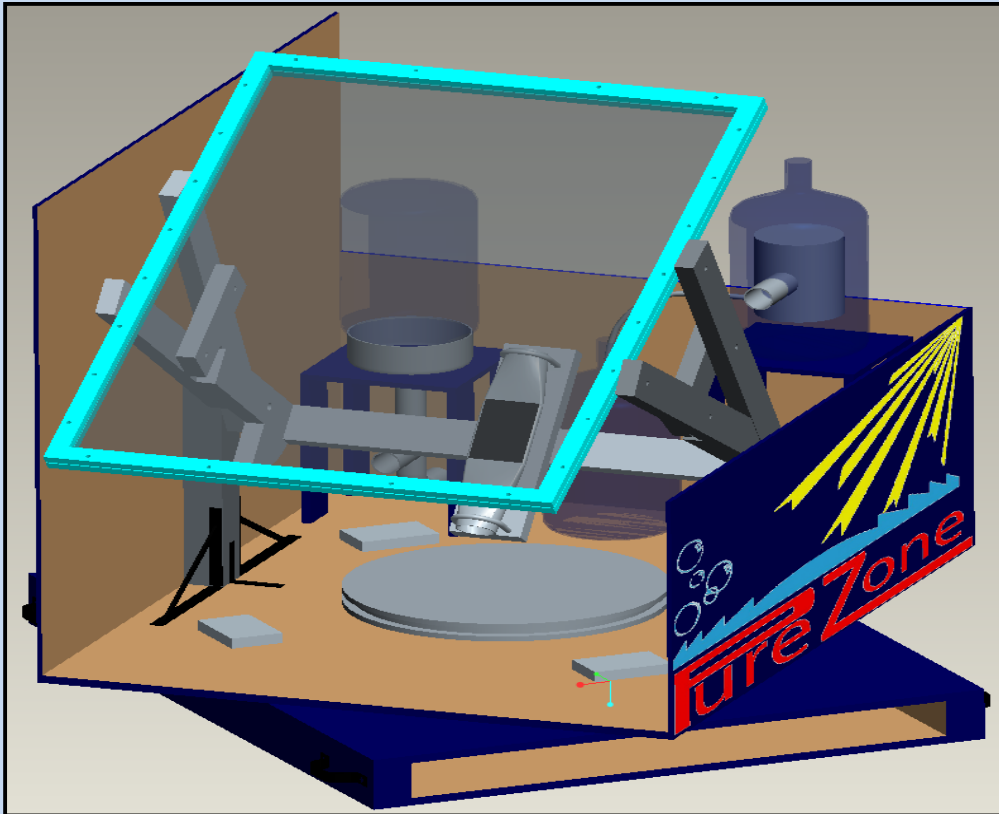
Team (L to R): Steven Boerrigter, Phillip Bush, William VanBuskirk, William Zaki, Brandon Biller, Ted Pesyna, Fady Megalli



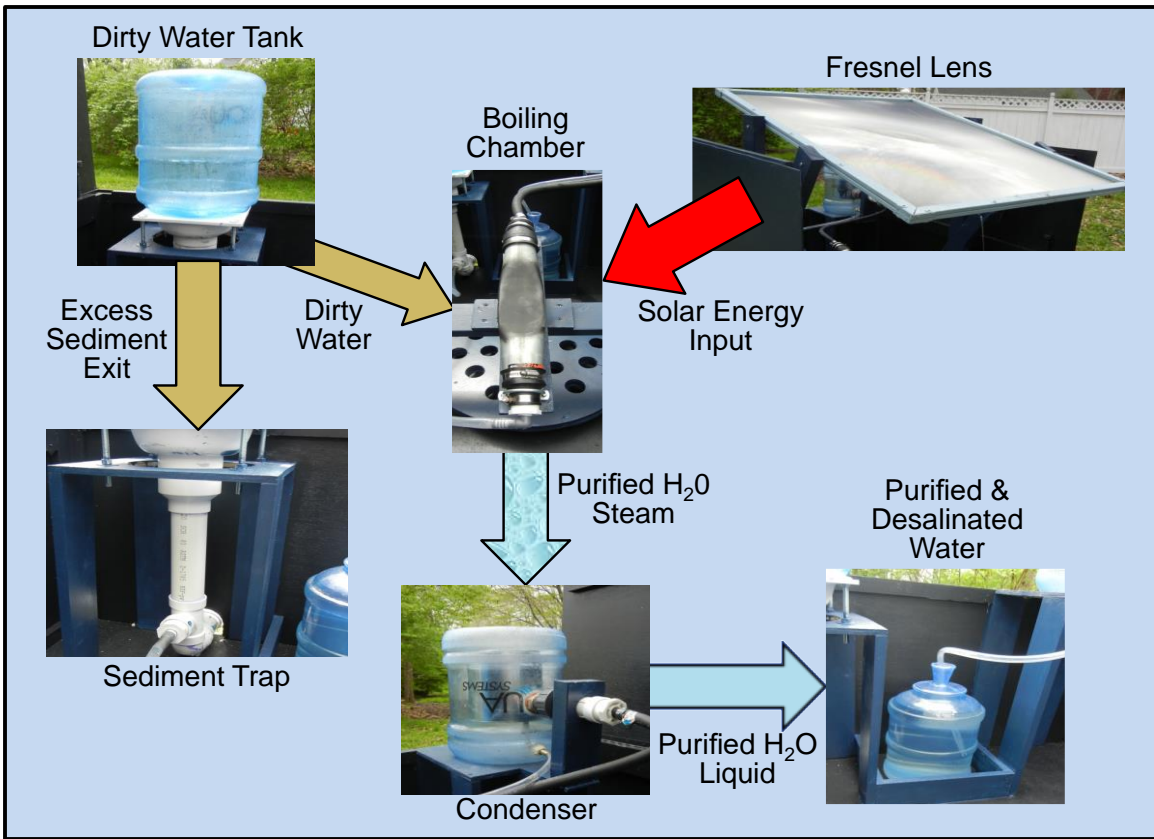
### Design Objectives:

1. Purify and filter 2 gallons of water per day
2. Must Operate renewably
3. Will not require regular replacement of parts or materials
4. Constructed from post-consumer products

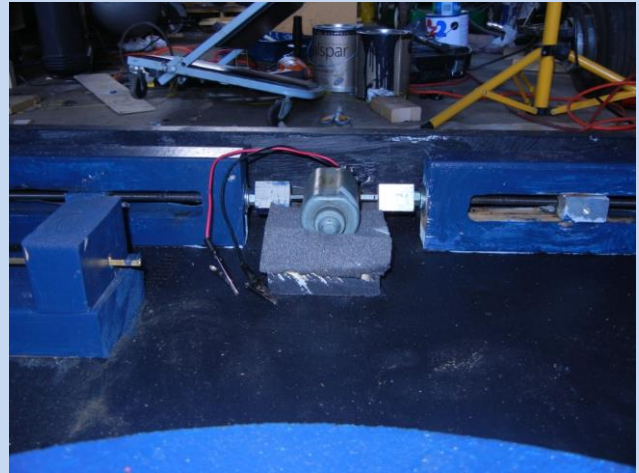
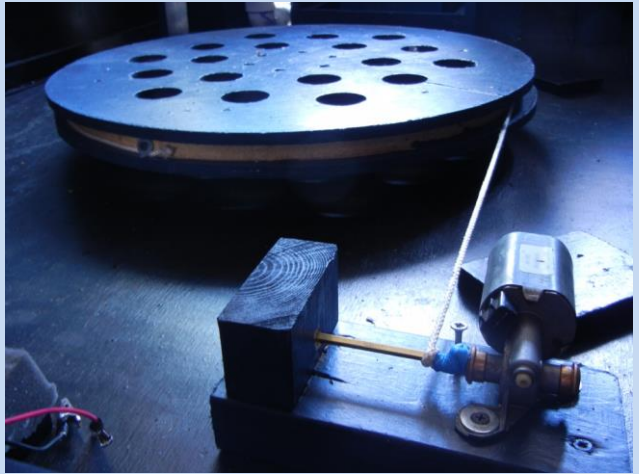




- Prototype utilize post-consumer products: Fresnel lens from used rear projection TV, exhaust pipe for boiling chamber, cleaned paint can for condenser, and water jugs
- Prototype is set up to operate for 8 hours throughout the middle of the day
- Product is readily available to ship in packaged form for disaster relief situations. Twenty seven fully constructed products can fit in a standard shipping container
- Assembly time from packed to unpacked is achievable in less than 2 minutes
- Once assembled, product equipped with solar tracking will follow sun throughout the day, requiring no manual work



## Solar Tracking



- Necessary to avoid critical heat flux in boiling chamber
- Use of infrared camera to determine optimal focal point
- Material selection to ensure efficient heat transfer

- Motorized movement to lift and lower lens as well as rotate 360 degrees
- Every orientation in space is possible to achieve a full hemisphere