Our Mission
We believe that everyone deserves access to basic healthcare. Our goal is to increase access to oxygen-rich air with technology that can resist a humid climate as well as frequent and long-lasting power outages.

Need
Macha Mission Hospital—Macha, Zambia
- Currently using limited number of DeVilbiss oxygen concentrators to provide oxygen-rich air to their patients.
- Lack of access to oxygen-rich air causes many deaths, often those of children.
- Oxygen concentrators use Zeolite to separate oxygen from nitrogen. Oxygen is kept for use, and nitrogen is purged.
- Large levels of moisture in Macha climate bonds to and ruins Zeolite.
- Frequent power outages trap moisture in the oxygen concentrators, accelerating the damage.
- Zeolite canisters are too expensive to constantly replace.
- Current oxygen concentrators used at Macha Hospital are likely not delivering oxygen-rich air due to ruined Zeolite.
- Removing moisture from inlet air before it enters the oxygen concentrators would greatly lengthen the life of the machines.

Current Design
- Small electrostatic precipitator.
- Production costs under $100.
- Uses high voltage (with no current) to ionize water molecules.
- Also removes dust and other particles.
- Made from stainless steel, PVC, and a high voltage multiplier.
- Currently in construction.

Testing Chamber
- Replicates Macha conditions.
- Introduces humidity and temperature factors to the electrostatic precipitator to test dehumidification capabilities.
- Automatically maintains set temperature and humidity.
- Currently in construction.

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Future Plans
- Hospital-wide oxygen concentration system.
- Uses pressure drop to remove moisture.
- Ambient air reservoir at high pressure allows for oxygen concentration and delivery during power outages.
- Provides oxygen to the entire hospital versus one patient at a time.
- Would replace oxygen concentrator use in Macha Hospital.

Process Schematic - Oxygen Generation System