Sustainability and Technology

http://www.boma.org/sustainability/Pages/default.aspx

Peter Abdalla

- Majoring in Biomedical Engineering
- Involved in Thon (R&R)
- Volleyball player
- Work at a catering/event gallery in Philadelphia
- Love to travel and visit new places

Courtney Poorman

- Majoring in chemical engineering
- Enjoy yoga, running, and lifting
- Involved in THON (R&R)
- Work at the Berkey Creamery
- Have two older twin brothers

Mike Schiavello

- Major - Mechanical Engineering
- Member of the Penn State Bowling Team
- Work at the salad bar in the HUB
- Love sports, especially baseball
- Can proficiently speak Spanish
- I am an Only Child

Hisham Shahid

- Major: Chemical Engineering
- I am from Dhahran, Saudi Arabia
- Come from a family of six including myself
- Trilingual
- I like soccer and basketball, both to watch and play

Stryker Sustainability Solutions

- Leading medical technology company
- Reverse engineered discarded medical devices in order to evaluate how to remanufacture or improve the devices
- FDA approved to reprocess devices within many clinical areas
- Salvages wires/cables, catheters, and pulse sensors
- Also reprocesses surgical equipment such as scalpels, suture passers, and sealers/dividers
- http://sustainability.stryker.com/

Technology Contributing to Sustainability

- Clean energy technologies - wind, solar, biofuels
  - Market projected to grow to nearly $400B in 2023
- Climate change mitigation technologies (CCMTs)
  - More patents in last five years than previous 30
- Rapid growth in research and development for energy efficient technologies
  - Private investment 2007-2012:
    - $2 Trillion - Renewable Energy
    - $700 Billion - Green Construction
    - $231 Billion - Efficient Energy
- Sustainable technology is on the rise

http://www.theguardian.com/sustainable-business/technological-innovation-sustainability-energy-green-investment

Aircarbon – Newlight Technologies

- Material made using carbon capture
- Air is combined with methane-based carbon emissions
  - Would normally become part of the air
- 40% oxygen, 60% carbon and hydrogen from captured methane emissions
- Aircarbon replaces oils and fossil fuels in plastics
  - Less expensive
  - Reduces carbon in air
  - Gets rid of more greenhouse gas than it emits
- Carbon-negative material
  - Means carbon footprint is negative, removes carbon dioxide from atmosphere

http://newlight.com/aircarbon/

Technologies that Contribute to the World

- Nanotechnology
  - has applications in greenhouse gas management and sustainable living
  - For example, in India researchers are using nanoparticles to destroy contaminants such as bacteria and microbes in drinking water (nanofiltration)
- Biofuel as an alternative to Fossil Fuel
  - lower emissions of carbon
  - easily produced, biodegradable and renewable
- Green Roof
  - Rooftop gardens are mostly found in urban environments.
  - Plants have the ability to reduce overall heat absorption of the building which then reduces energy consumption
- http://www.sustainabilitydegrees.com/what-is-sustainability/sustainable-technology-development/