IPRO 319: Tech for Cardiac Arrest
Problem

- Causes brain damage and death
- Can happen anywhere
- Can happen any time
- Damage is done fast
Goals

- Mitigate damage and death
- Portable and easy to use
- Treat victim before paramedics arrive
Progress to Date

- Research on previous IPRO's done
- Technologies selected
- Preliminary designs created
- Parts ordered
Organization of the Team

- The team works well together
- Assigned roles limit creativity
- We are dynamic!
  - All members help in all areas they can
  - Loosely defined cooling and shaking teams
Solution

**OPTIMUM DESIGN**
- Shaker
- Cooling system

**SOLUTION**
- Hand shaking
- Wheel with torsion spring
- Plastic bed with form mattress
- Refrigerant emission system through a bed
- R152a for refrigerant
CHALLENGES

- More optimum design
- Control the mass flow rate (refrigerant)
- Test for confirmation
• Moral Principles
  • Utilitarianism
  • Justice Model
  • Human Rights
BIOETHICS

- Universal declaration of Human Rights
- The Nuremberg Code
- The Belmont Report
- International Ethical Guidelines for Biomedical research Involving Human Subjects
- Public Act 096-0748
Questions?