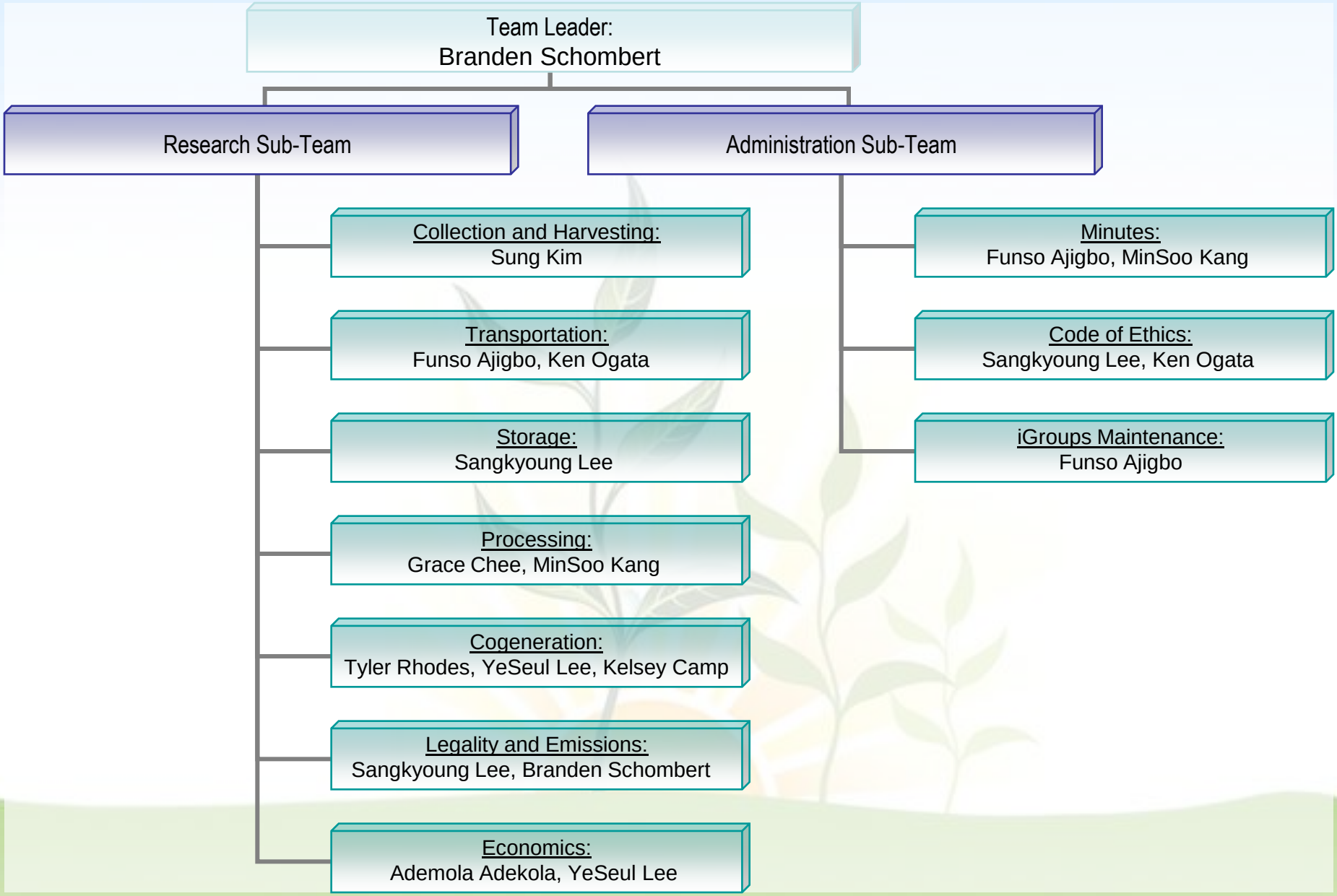
IPRO 349

Solid Corn-Waste Fuel for Cogeneration

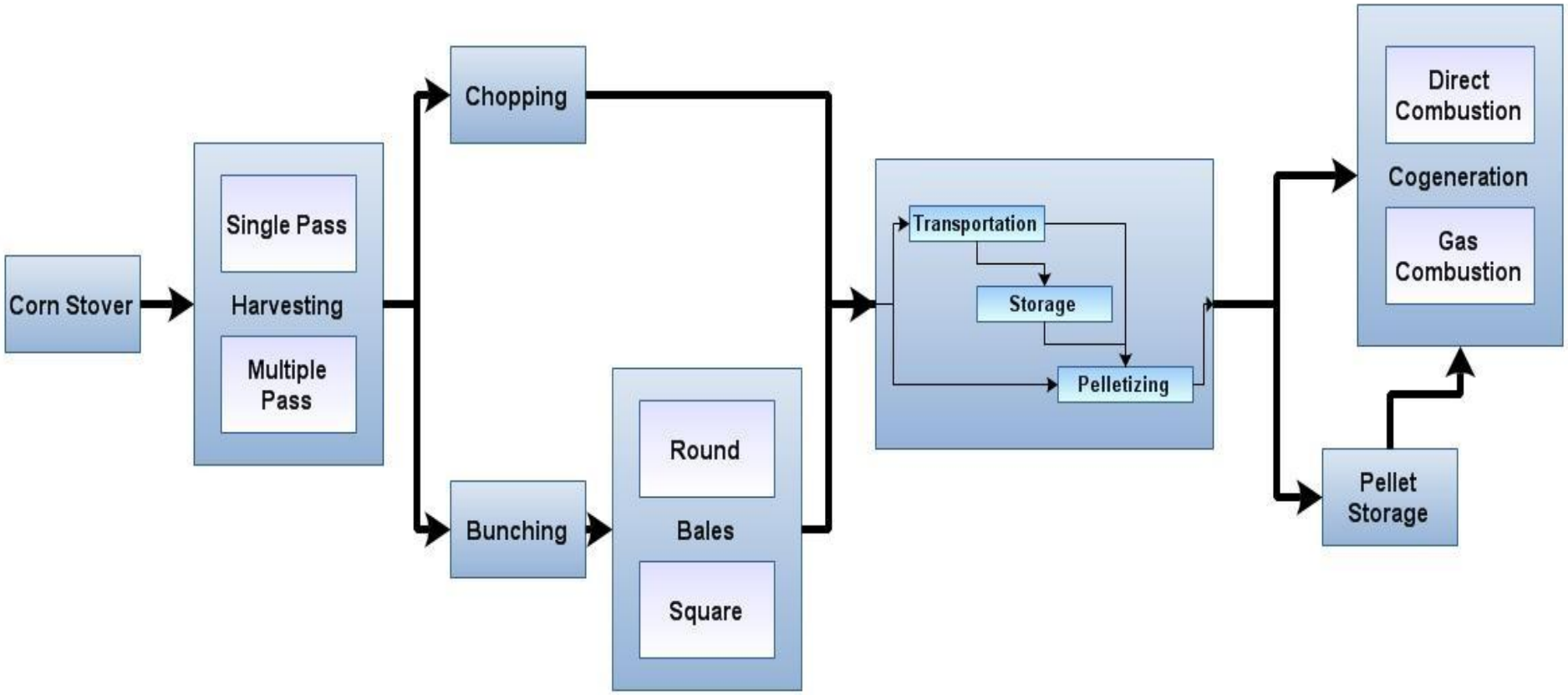
Statement of Problem

- Need a method for efficient conversion of corn stover to solid biomass for cogeneration.
- Objectives
  - Investigate pathways for small scale operation
  - Define optimum location characteristics
  - Construct economic analysis
  - Develop final report
  - Propose a possible test model

IPRO 349 Team Organization

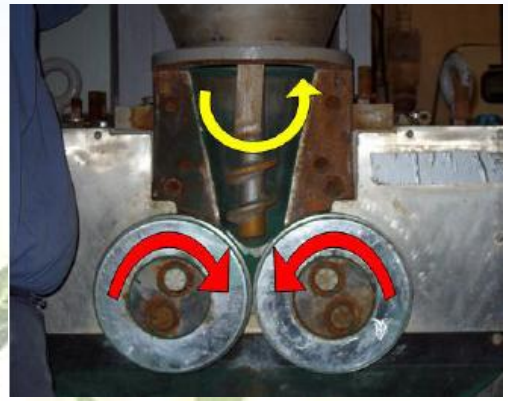


Process Flow Chart



Compacting

1. Purpose
   - To increase mass per unit of volume
2. Process of pelletizing
   - Grinding/ particle reduction ⇒ Compression ⇒ Densification



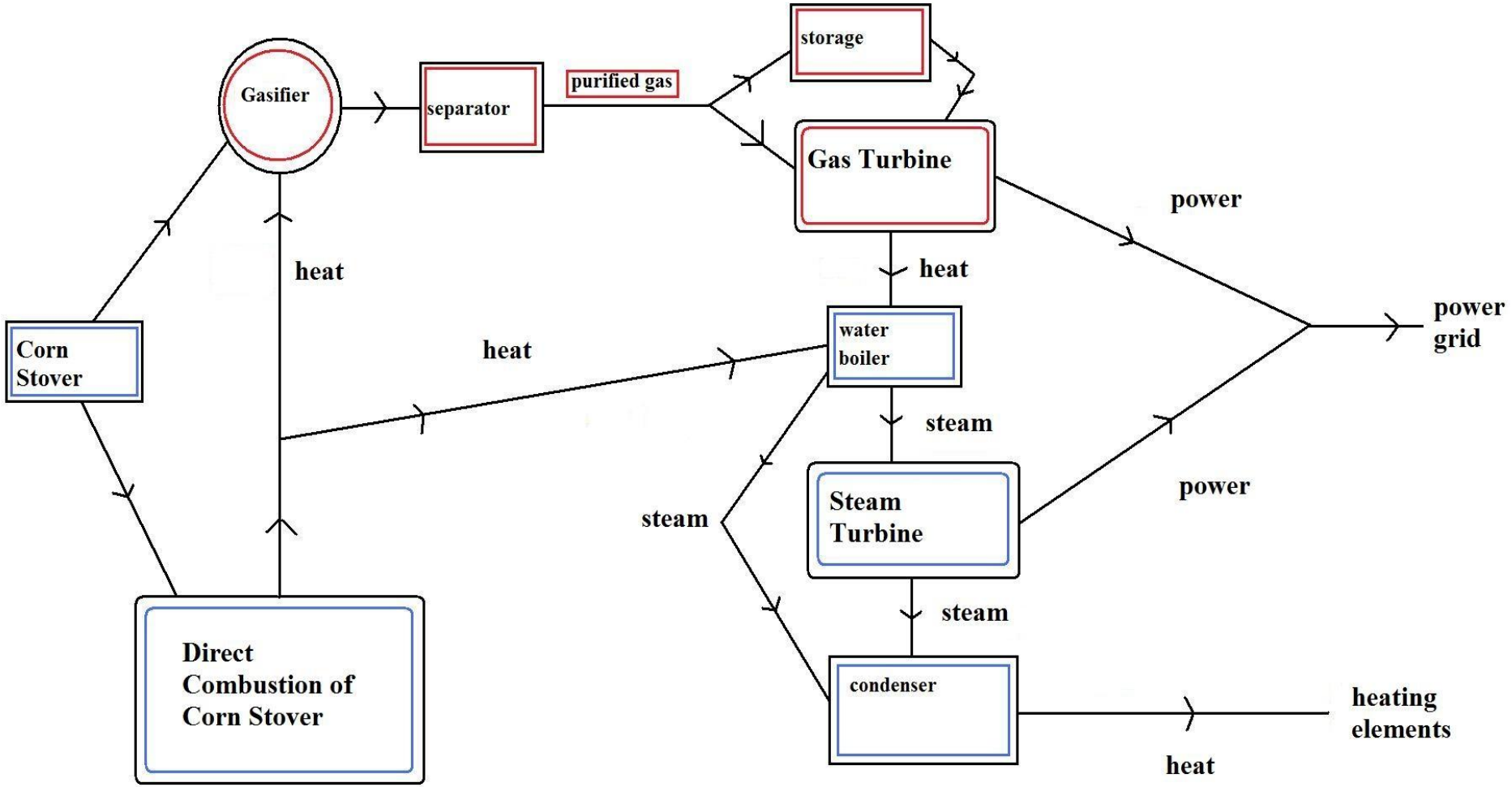
3. Two types of densification
   - Briquette

- Less Dense
- Durability :67-90%

   - Pellet

- More Dense
- Durability : 94-96%

Cogeneration Possibilities



Obstacles

- Location of accurate resources
- Getting responses from industries
- Analyzing multiple pathways
- Efficient use of time
  - Planning ahead
  - Individual task definition

To Do List

- Further research
- Continue to contact companies
  - (ADM, John Deere, Monsanto)
- Consult specialists
- Dixon farm visit
- Track energy losses
- Compile detailed information of individual components for most beneficial combination

Ethics

- Seven layers of Ethics
- Law: Must abide by all EPA regulations
- Professional Code of Ethics: Must not represent our team falsely
  - Rather, be smart when contacting companies
- Community: Corn for food – waste for fuel

Questions?