IPRO 349 Solid Fuel from Biomass for Cogeneration

Statement of Problem

To determine the **feasibility** of using corn stover as a combined heat and power source for rural community colleges

Objectives

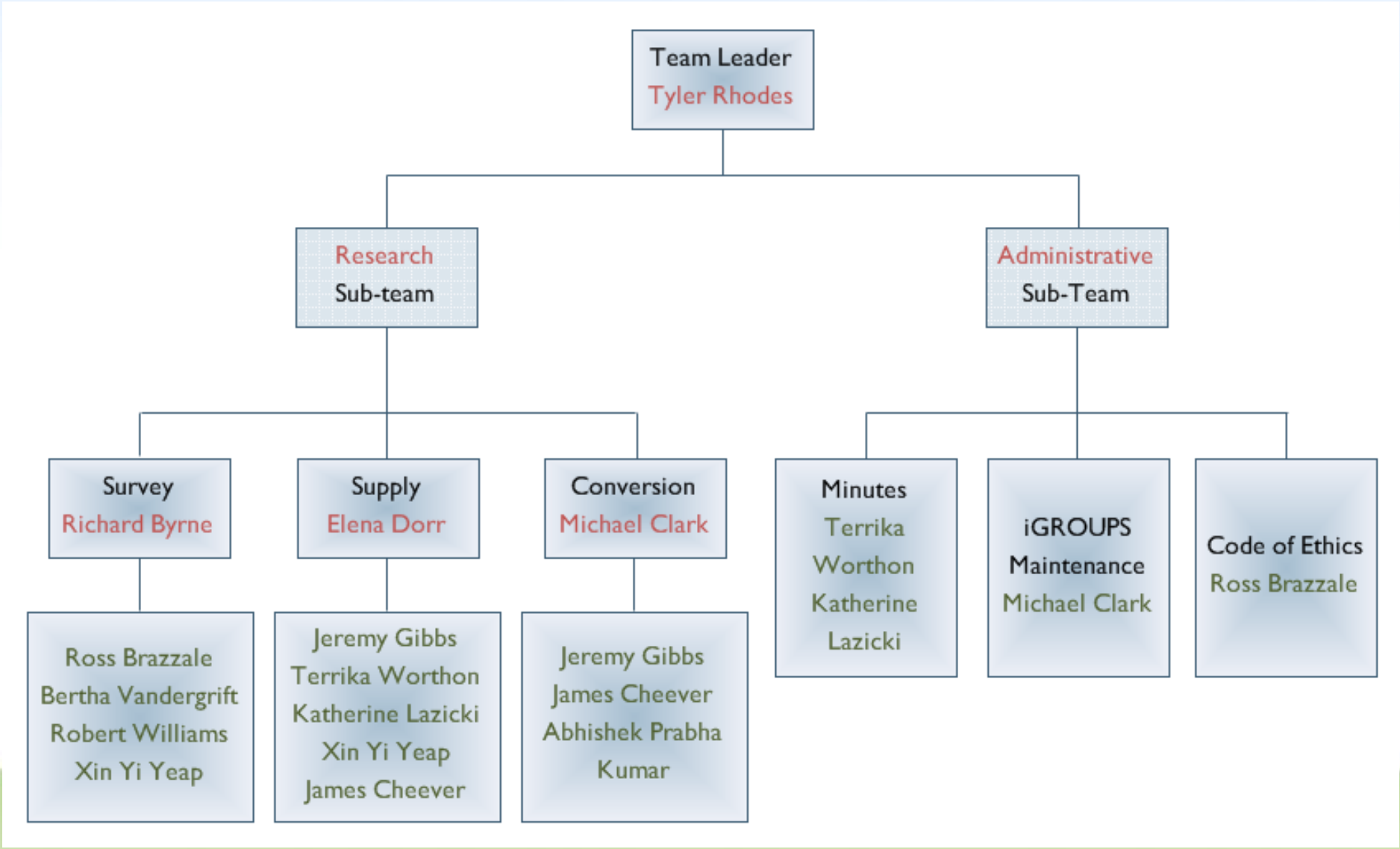
Survey the potential for CHP application

Scale up from single to multiple farm system

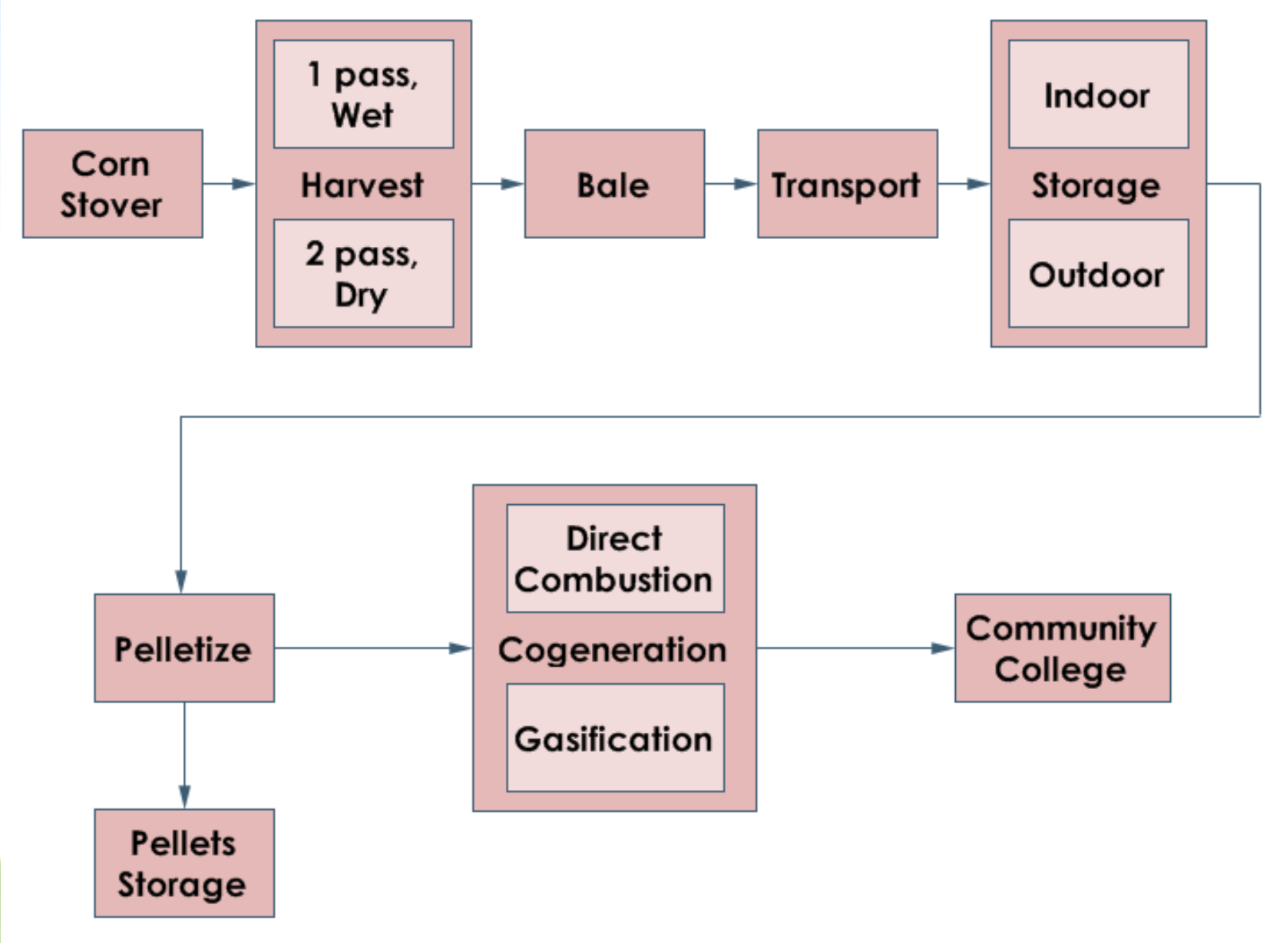
Identify future stover CHP options

Investigate creation of an online database of our research

Team Organization



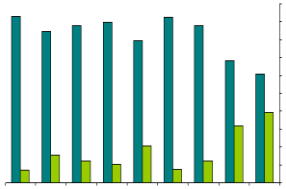
Process Flow Chart



Survey Team

Sent out surveys and letters

- **46** community colleges



Set up to compile and collect data

- Received **5** responses so far

Identify community colleges that used similar green technologies

- Elgin, Black Hawk

Supply Team

Field → Harvest → Bale → Transport → Storage → Pelletize

Transportation

Bale and storage:

• Bale choices on transportation and long term storage

Farm Delivery vs. Pickup:

• Balancing control of shipment depending on 3rd party

Processing

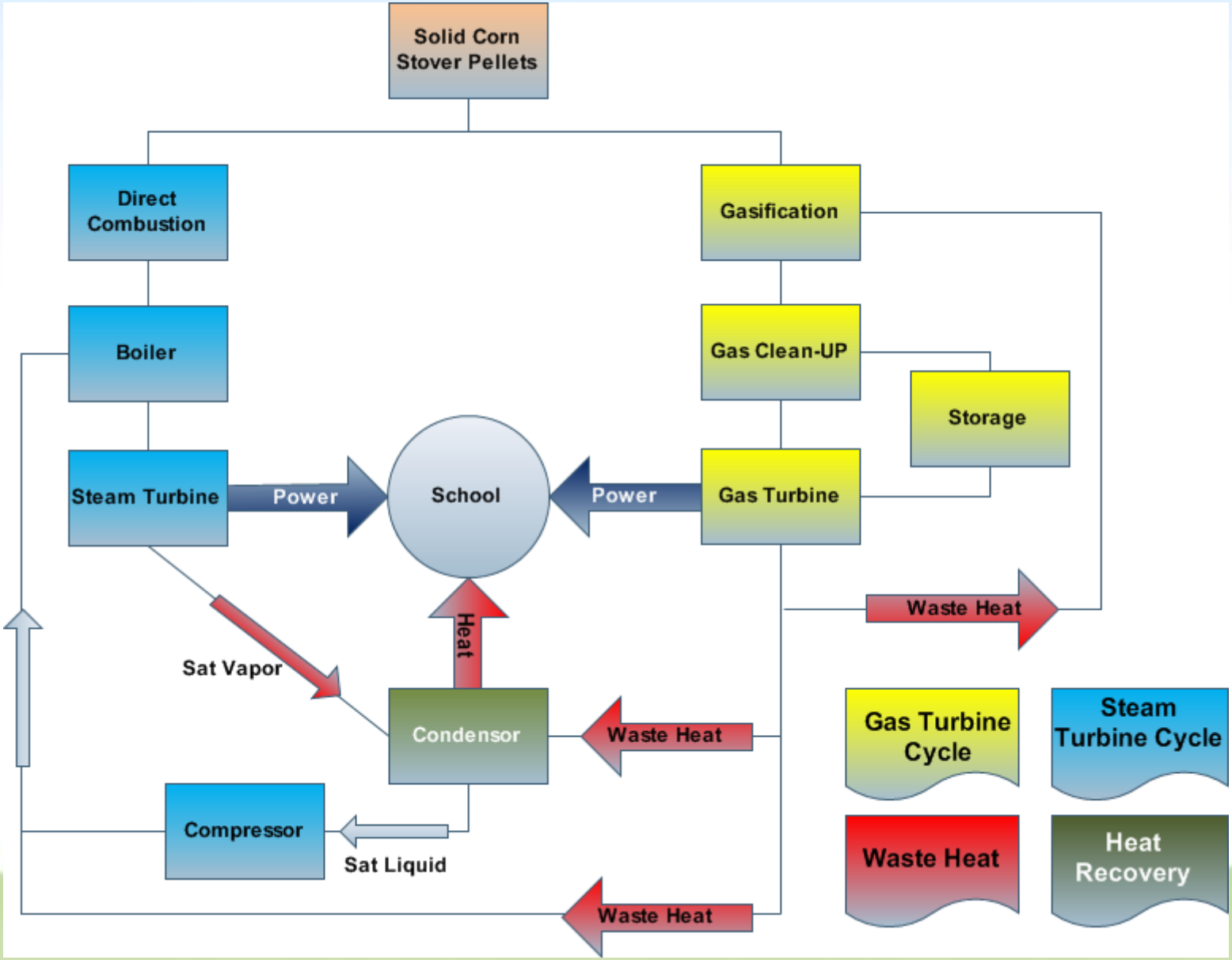
Dry vs. Wet

• Storage period, equipment, processing time

Pellets vs. Cubes

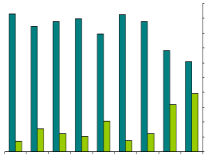
• Durability, moisture, drying time

Conversion Team



Obstacles

Contacting right people for survey



Receiving responses in a timely manner

Getting appropriate data for the supply and conversion teams

Efficient time use

To do List

Follow up with schools

Contact equipment manufacturers

Construct hypothetical model for CHP feasibility

Develop full scale logistics plan for the model

Ethics

7 layers of ethics

Abide law: EPA guidelines

Must not represent our team falsely

- Be smart

Community: corn for food, waste for fuel

Questions?

Corn Stalker