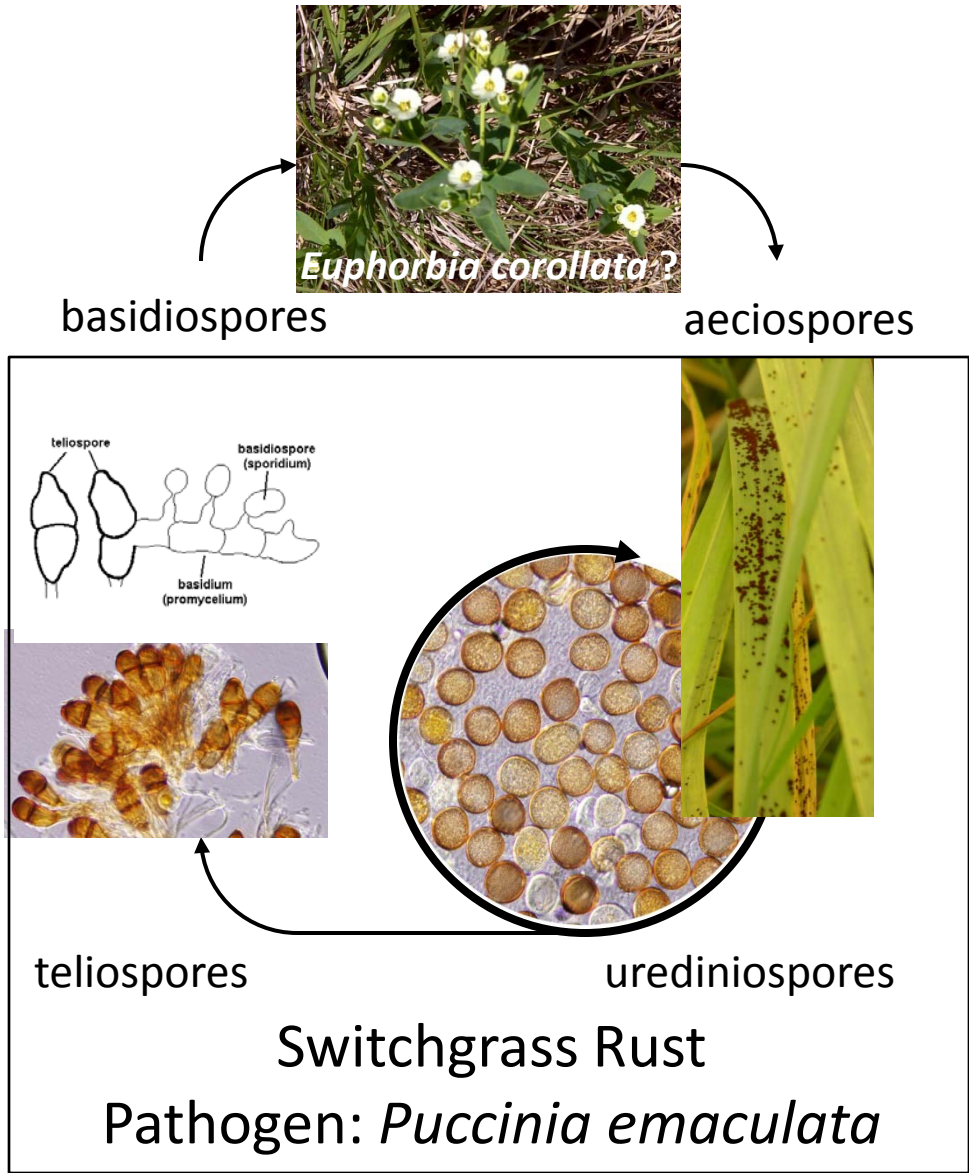
The Etiology of Switchgrass Rust in Oklahoma

Goals:

- Identify alternate aecial host(s)
  - *Euphorbia corollata* reported
    - Growth chamber grown plants will be inoculated with basidiospores from switchgrass
- Use ITS-rDNA sequences from aecia on dicot hosts
- Sequence additional loci and use as DNA barcodes identifiers
  - Cytochrome b (cytb)
  - Beta-tubulin (btub)
  - Translation elongation factor-1 alpha (TEF1 or EF1α)



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- Progress
  - Improved universal primers to amplify ITS-rDNA, bTub, cytb, and tef1 from *Puccinia emaculata*.
  - Have amplified DNA barcodes from potential hosts with aeciospores: *Erigeron strigosus, Conyza canadensis,* and *Verbena* sp.
    - None were *P. emaculata,* but all were novel compared to NCBI sequences
  - Currently monitoring several populations of *Euphorbia corollata*, *E. dentata,* and *E. spathulata* for aecia
- Grant submission:
  - Co-PI on USDA-AFRI Sustainable Bioenergy grant application to work on population biology of *P. emaculata*