Cutting Edge Disease Identification and Control

Dr. Bruce Clarke, Rutgers Univ
Dr. Bruce Martin, Clemson Univ
Biotic Agents of Infectious Disease

- Kingdom Fungi
- Kingdom Chromista (Pythium, chytrids, *Labyrinthula*)
- Bacteria
- Phytoplasmas
- Viruses and Viroids
- Nematodes
- Protozoa
- Parasitic higher plants
Diagnosis - the art and science

- Identify the affected grass species
- Careful observation of symptoms
- Environment at or before onset of suspected disease
- Presence of signs of pathogens (spores, mycelium, fruiting bodies)
Diagnosis - the art and science

- Measurements - (pH, soluble salts, etc.)
- Microscopic examination, culturing
- DNA probes, immunological assays
Diseases that may be confused by symptoms alone

F Pythium blight, dollar spot, copper spot, Fusarium patch, sulfur injury, bentgrass dead spot

F Pythium root rot, compaction, overwatering, salt accumulation, black layer

F Pythium root rot, Take All Patch, summer patch (bentgrass)
Diseases that are Easily Confused by Symptoms Alone

F Necrotic Ring Spot and Summer Patch in *Poa annua, P. pratensis*

F Summer Patch/ Pythium root rot in bent in high heat environments

F Pythium root rot, anthracnose basal rot, and “wet wilt”

F Localized Dry spots, nematode infestations and fairy ring infestations