

# My Vision

A Phenomenologist's  
Reality List

*Comments on Tools and Analysis*

# Feedback

∅ What works?

∅ PS describes n-jet emission well

∅ What doesn't?

∅ Number of isolated charged tracks

∅ Gluon splitting  $\Leftrightarrow$  heavy flavor

Essential for making progress

# Prioritize

- ∅ Separate essential from esoteric
- ∅  $Wjjjjj$  or a good description of inclusive  $W$  production ( $P_T$  of  $W$ )?
- ∅ SM backgrounds or new physics particulars?

# Simple before Complex

1. Parton level (basic topology)
2. Particle level (heavy flavor?)
3. Toy calorimeter (smearing effects)
4. Fast simulation (basic result)
5. Full simulation (hard core; important for final results)

# Communicating Results

- ∅ Make data available in a short time (light sbottom?  $Wbb$  at  $M_{bb}=115$  GeV?)
- ∅ Public Fast Simulations
- ∅ Don't view theorists as the enemy. Include them in your analyses
- ∅ Allow small groups to post preliminary results (hep-ex or hep-ph)

Chance of an error vs. positive feedback

# Searches

- ∅ *A priori* strategies (e.g. SLEUTH) look promising
  - ∅  $e^+e^-\gamma\gamma \cancel{E}_T$  conundrum: the probability of *something* unusual is hard to estimate
- ∅ However ...
  - ∅ Exclusive final states are sensitive to object definitions
  - ∅ How to account for correlated signals?  
 $WW(\gamma\gamma) \Rightarrow 12 \text{ } e_j j \text{ for } 1 \text{ } ee (\gamma\gamma)$
- ∅ It is okay to test specific models!

# Proceed without Prejudice

- ∅ Exploit LEP experience
- ∅ Test LHC Monte Carlo analyses
- ∅ Remember these mantras:
  - ∅ *A heavy top quark cannot be found in Run I*
  - ∅ *Charm tagging is not possible*
- ∅ When you consider:
  - ∅ Top quark “tagging”
  - ∅ Tau lepton identification

# Warm Ups

## ∅ Blind-folded analyses

- ∅ Analyze mixtures of fake data and signal

- ∅ Expose biases and possible surprises

- ∅ How to do this in a fair way?

  - ∅ Prepare SHW formatted objects?

  - ∅ Binaries that only output stable particles?

  - ∅ Will accept suggestions, disk space, etc.

- ∅ Prepare kinematic templates for gluino signals, etc.