Some questions and (provocative ;-) comments to start the discussion

Jaco Konigsberg, Terry Wyatt.

- Which Tevatron analyses MUST we repeat and which are not absolutely essential?
- How should we publish?
- (How) should we archive the data?
- Some more specific questions

Which analyses MUST we repeat and which are not absolutely essential?

- Obviously, Higgs search, m_W, top properties
  - Is m_t worth further effort?
- Need many measurements of γ/W/Z production (+jets) (+b/c jets)
  - fully corrected for acceptance and unfolded for resolution
  - Really should try to tie down MC at 2 TeV
    - to:
      - reduce scope for tuning
      - increase believability of predictions
    - at 14 TeV
  - NOT enough to fudge detector-level W+jets to fit the "background" in your Higgs search

Which analyses MUST we repeat and which are not absolutely essential?

- PDFs
  - How important are
    - High E_T jets, W asymmetry, Z rapidity?
    - E.g. Z rapidity is VERY difficult
      - Can we help motivate this work by repeating current PDF fit with current error bars reduced by factor ~4?
  - Translation from
    - Expt measurements <--> PDF eigenvector sets <--> physical parameters
  - for experimentalists would be very useful
  - LHC Z rapidity -> 1 MeV W mass uncertainty?

Which analyses MUST we repeat and which are not absolutely essential?

- Searches for new physics
  - Are we done?
    - No! Relevant way to express sensitivity is σ.Br NOT as limit on:
      - $M_{your\_favorite\_specific\_new\_particle\_in\_your\_specific\_favorite\_model}$
  - But many NP chasers have already left for the LHC
  - Minimum to do:
    - Generic "model independent" searches covering all conceivable final states
    - Data-SM comparisons in the main final states
      - (maybe as by products of other analyses, e.g., SM Higgs)
    - Sorry, but we may not necessarily get around to publishing limits on
      - $M_{your\_favorite\_specific\_new\_particle\_in\_your\_specific\_favorite\_model}$

How should we publish?

- Keep as close as possible to the direct experimentally measured quantities
  - try to minimize application of "physics" corrections
    - (e.g., radiative corrections, extrapolation to full geometrical acceptance, etc)
  - Don't second guess posterity!
    - E.g., CDF W asymmetry
      - Nice trick, but should publish the electron asymmetry too!
    - We can go back and redo now -- even in 3 years time this may be almost impossible
- Legacy papers must be PRD not PRL!

(How) should we archive the data?

- Very difficult to go back and re-analyze old data!
  - so emphasis should be on publishing measurements properly in the first place!
- But we can't think of all possibilities
  - let alone publish corrected distributions
- E.g., "Unexpected" discovery at the LHC
  - Need to have some capability to go back to the data
    - and SM MC + data-derived background
  - QUAERO-type detector simulation?

A few more questions

- IR-safe jet algorithms
  - A LOT of work for CDF/DØ to change jet algorithm
    - Redo JES, b-tagging, background estimates, etc
  - Is it just too late?
  - Can you convince us it is really worth it?
- Single top?
  - Should do a precision blind analysis as reality check for low mass Higgs search
  - Can we distinguish s and t mechanisms
    - (very difficult at LHC)

A few more questions

- Will the turn on of the LHC kill the Tevatron?
  - Tevatron expts have a clear run at the 2011 data
    - for everything except for very high mass searches and some areas of B physics (LHCb)

- Very useful meeting
  - Lots of very interesting presentations and (maybe even more important) discussions
  - VERY well organized! THANKS!!!
- But the real value is in the quality of the FOLLOW UP
  - so let's follow up on some of these questions!