Summary and Conclusions

- Despite limited statistics - many more results - not covered here !
- All photoproduction cross sections are found to rise steeply with $W_{\gamma p}$.
  $\Longrightarrow$ well described by NLO pQCD where rise reflects increase of gluon density in proton at low x.
- Open charm production
  - ▷ BGF describes well the production (possible exception $\eta(D^*)$).
    NLO contributions are found to be large (available in most cases).
  - ▷ Need for consistent treatment of fragmentation.
  - ▷ Cannot distinguish different PDF's yet.
  - ▷ $F_2^{c\bar{c}}$ DIS: charm contribution to F_2 is large: $\approx 25\%$ at $x \sim 10^{-3}$, $\sim 10\times$ wrt EMC at larger x.
- Bound charm production - J/ψ
  - ▷ Colour singlet model describes well energy distribution in inelastic production. NO indication of large colour octet seen.
  - ▷ Diffractive (elastic) production increases faster with $W_{\gamma p}$ than expected from models with soft pomeron exchange (D+L).
    A QCD approach (gluon ladders) describes this pretty well.

$\Longrightarrow$ QCD seems appropriate in most aspects studied.

- What's next ?
  - ▷ Get down to the Bottom ...
  - ▷ Use of Si-vertex detectors (H1 in 1997, ZEUS in 2000)
  - ▷ High-lumi upgrade of HERA at ~ 2000 ...