Discussion Starter: HW Contribution to EIC@IP6 Detector

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Electron-Ion Collider

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Possible Projects under Discussion (I)

- DAQ
  - Pro: STAR has experience, also AI/ML efforts at BNL
  - Cons: not visible enough - infrastructure
  - Status: possible contribution with other institutions (Jeff, Tonko, Hongwei, Aihong)
- Hadron Polarimetry
  - Pro: BNL world-expert, almost a must do
  - Cons: ?
  - Status: Will do
- Luminosity Monitor
  - ?
- Roman Pots
  - Pro: STAR has experience, BNL has LGAD expertise
  - Cons: ?

Possible Projects under Discussion (II)

- Other auxiliary detectors: Q2 tagger, B0, …
  - Pro: vital
  - Cons: rel. small
- Forward Calorimetry (ECAL/HCAL)
  - Pro: Vital & visible detector (STAR FW upgrade)
  - Cons: UCLA and others are interested (Oleg)
- ToF
  - See: https://indico.bnl.gov/event/11295/contributions/47765/attachments/33893/54563/combined.pdf
  - Pro: STAR has some expertise, BNL has LGAD experts, many option
  - Cons: currently not in reference detector, case needs to be made
  - Physics: cover PID for p < 2 GeV or/and p>5-6 GeV (?)
  - Technology: LYSOL+SiPM or LGAD or AC-LGAD
  - Barrel, also fwd/bkwd?
- Barrel PID (alternatives to DIRC)
- Other?