

## PAC Recommendations

- 1. Running with polarized proton collisions at 500 GeV to provide an integrated luminosity of 750 pb<sup>-1</sup> at an average polarization of 55%.
- 2. Depending on the amount of running time remaining after priority #1

a. If less than 3 weeks remain, a week of 200 GeV Au+Au collisions.

b. If at least 3 weeks of running time remain, 3 weeks of 15 GeV Au+Au collisions.

## Text on 15 GeV:

If the higher moments change rapidly with chemical potential, the critical point might lie between the regions of the QCD phase diagram that are being sampled by the 19.6 and 11.5 GeV data. Thus, it is important to add another measurement at a collision energy of 15 GeV, with precision comparable to the existing measurement at 19.6 GeV. Such a run would require 20 days. Text on 200 GeV:

The PAC believes it is essential that both PHENIX and STAR perform crucial measurements of heavy flavor production in Au+Au collisions during Run 14...A week of 200 GeV Au+Au collisions during Run 13 will provide the data to evaluate the pixel detector position resolution and increase the probability that the HFT will produce physics-quality data early in Run 14.



## 15 GeV: Projected Uncertainties



- Interesting changes around 20 GeV Au+Au collisions:

**BES-II: focus**  $\sqrt{s_{NN}} = 5-20$  GeV but only occur in 2017-2018

2) In terms of µ<sub>B</sub>, the gap between 11.5 and 19.6 GeV central collisions is more than 100MeV.
20 days of 15 GeV Au+Au collisions will lead to similar statistics as 19.6 GeV. We expect similar systematic uncertainties.

The outcomes will likely affect the strategy for future QCD phase structure studies.