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RHIC-spin program for the next several years

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It has been almost a decade since RHIC provided the first polarized proton proton collision. The performance is improving towards the design luminosity and polarization. With the applicability of the factorized perturbative QCD (pQCD) and gluons in a leading order process, RHIC is a unique place to access to the gluon spin in the proton. In the first stage, PHENIX and STAR measured the double helicity asymmetries of inclusive channels. The data excluded the large gluon polarization scenario and prefers rather small polarization in the range of Bjorken-x presently measured. The next step is to study the x dependence. One way is to fix the kinematics, and the other is to change the collision energy to enlarge the x-coverage. The inclusion of data with lower collision energy than the nominal RHIC energy ($\sqrt{s}=200\text{GeV}$) might be an option if the range where the factorized pQCD can be applied is extended. The field of transverse spin physics is rapidly growing. PHENIX and STAR spent a half of their beam time taking data with transverse beam polarization. BRAHMS used its great capability of particle ID and its broad rapidity coverage to measure single spin asymmetries. At this stage, it is important to collect many experimental evidences in wide range of kinematics and channels. For this purpose, STAR recently extended their forward acceptance. With the full energy ($\sqrt{s}=500\text{GeV}$), W boson has a reasonable production rate. Thanks to its parity violating process, it provides a unique way to separate the flavor spin components with the high scale of Q^2 ($\sim 6400\text{GeV}^2$) and no fragmentation involved. In 2009, RHIC provided the first 500GeV polarized collisions successfully. Experiments demonstrated the feasibility of this program. In this talk, I will give a short summary of what we have learned from the past RHIC runs and prospects for the near future measurements.