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**Nucleon structure study using a polarized  $^3\text{He}$  target**

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Due to the unique ground state spin structure of the  $^3\text{He}$  nucleus, polarized  $^3\text{He}$  nuclear targets have been used widely in experiments ranging from measurements of the neutron electric and magnetic form factors to the study of the neutron spin structure. In this talk, I will highlight some of the recent results and also discuss upcoming experiments. Particularly, I will discuss the upcoming neutron transversity experiment in Hall A at Jefferson Lab using a vertically polarized  $^3\text{He}$  target and the planned polarized Compton scattering experiment from a polarized  $^3\text{He}$  target at the HI $\gamma$ S facility located at the Duke Free Electron Laser Laboratory using the circularly polarized photons. All these experiments benefit greatly from theoretical developments in calculating the three-body system. The work is supported in part by a U.S. Department of Energy grant DE-FG02-03ER41231.