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### **Physics Program with 12 GeV JLab<sup>1</sup>**

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Jefferson Lab (JLab) is one of the premier facilities in nuclear and hadronic physics in the world. Recommended as the top priority in the most recent US nuclear physics long-range plan [1], JLab is undergoing an energy upgrade from 6 GeV to 12 GeV [2]. With high luminosity and high polarization CW electron beam, the 6 GeV physics program has produced exciting results in the last decade. The energy upgrade will greatly expand the JLab capability and open up new opportunities. The planned physics program will be discussed, including a precision study of valence quark distributions, a 3-d mapping of the transverse momentum dependent distributions and the generalized parton distributions, low-energy tests of the standard model, a search for exotic mesons and a study of few-body and nuclear medium effects.

[1] The Frontiers of Nuclear Science: A Long Range Plan.(Dec. 2007)

[2] <http://www.jlab.org/12GeV/>

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