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The NDCX-II accelerator facility for Heavy Ion Fusion Science¹ A. FRIEDMAN, J.J. BARNARD, R.H. COHEN, M. DORF, D.P. GROTE, S.M. LUND, W.M. SHARP, LLNL, D. ARBELAEZ, A. FALTENS, J. GALVIN, W. GREENWAY, E. HENESTROZA, J.-Y. JUNG, J.W. KWAN, E.P. LEE, B.G. LO-GAN, L.L. REGINATO, P.K. ROY, P.A. SEIDL, J. TAKAKUWA, J.-L. VAY, W.L. WALDRON, LBNL, R.C. DAVIDSON, E.P. GILSON, I.D. KAGANOVICH, PPPL — The Neutralized Drift Compression Experiment-II (NDCX-II) will generate ion beams for studies of Warm Dense Matter, target physics for heavy-ion-driven Inertial Fusion Energy, and intense-beam dynamics. NDCX-II will accelerate a 20-50 nC Li pulse to 1.2-3 MeV, compress it to sub-ns duration in a neutralizing plasma, and focus it onto a target. Construction of the induction accelerator and compression line at LBNL is approaching completion. We briefly describe the NDCX-II "physics design" [A. Friedman, et al., Phys. Plasmas 17, 056704 (2010)], the simulation studies that enabled it, variations (e.g., for other ions), plans for commissioning over the next year, and some possible experiments using the machine itself and extensions.

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