

Abstract Submitted  
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**Decoding the nuclear genome using nuclear binding and fusion energies** JAY R. YABLON, MIT Alumnus — In several publications the author has presented the theory that protons and neutrons and other baryons are the chromomagnetic monopoles of Yang-Mills gauge theory and used that to deduce the up and down current quark masses from the tightly-known  $Q=0$  empirical electron mass and the neutron minus proton mass difference with commensurately high precision. This is then used as a springboard to closely fit a wide range of empirical nuclear binding and fusion energy data and to obtain the proton and neutron masses themselves within all experimental errors. This presentation will systematically pull all of this together and a) establishes that this way of defining current quark masses constitutes a valid measurement scheme, b) lays out the empirical support for this theory via observed nuclear binding and fusion energies as well as the proton and neutron masses themselves, c) solidifies the interface used to connect the theory to these empirical results and uncovers a mixing between the up and down current quark masses, and d) presents clearly how and why the underlying theory is very conservative, being no more and no less than a deductive mathematical synthesis of Maxwell's classical theory with both the electric and magnetic field equations merged into one, Yang-Mills gauge theory, Dirac fermion theory, the Fermi-Dirac-Pauli Exclusion Principle, and to get from classical chromodynamics to QCD, Feynman path integration.

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No Company Provided

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