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(I) The Electron-Ion Collider: North America's Next Large Particle Collider

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The Electron-Ion Collider (EIC) is a major new collider facility to be built on Long Island, New York, by the end of the current decade. At the EIC, polarized electrons will collide with polarized protons, polarized light ions, and heavy nuclei at luminosities far beyond what is presently available. The facility will answer several fundamental questions central to the understanding of atoms, and integral to the agenda of nuclear physics today: How does the mass of the nucleon arise? How does the spin of the nucleon arise? What are the emergent properties of dense systems of gluons? Canadian subatomic physicists have participated extensively in the planning of this new facility and have chartered the multi-institutional EIC Canada Collaboration. We anticipate that Canada will make significant contributions to detector systems, software, electronics, and the physics program of the EIC.

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