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### **Measurement of Low-Energy Nuclear Cross Sections using Inertial Confinement Fusion<sup>1</sup>**

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Inertial confinement fusion is a tool that may be used to for fundamental nuclear science measurements. In the method under consideration, nuclear reaction products in the expanding neutral gas following the target implosion will be collected and trapped using a turbomolecular pump. The beta-decay of reaction products with half-lives ranging between 20 ms and 10 s will be measured in-situ using a phoswich detector system starting within milliseconds after the implosion. Cross sections for several previously unmeasured low-energy deuterium and tritium reactions could be measured using this technique. To study the feasibility, several small-scale experiments are being carried out at Houghton College and SUNY Geneseo to simulate the rapid release of gas by the ICF target, its subsequent capture and decay counting.

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