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A Novel, Cost-Effective Positron Emission Tomography (PET) Scanner BRIAN KELLY, Texas A&M — Positron Emission Tomography (PET) allows physicians and researchers to visualize metabolic data in the human body and is widely used in cancer and neurological imaging. Traditional PET scanners consist of a thin ring of scintillators coupled to photo detectors but these scanners often take long periods of time to acquire an image, are very costly, and are too complex to fit inside other machinery such as MRI. In response to this, we are building a novel PET detector that utilizes non-traditional scintillators and photo detectors in an attempt to significantly decrease cost, allow combined PET/MRI modalities and reduce scan time. In this talk, we will discuss the relevant theory, design and construction of our prototype.

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