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**Electrical Measurements of CVD grown Double-Walled Nanotubes** SCOTT FIX, CHELSEA LINCOLN, SCOTT PAULSON, James Madison University — The CVD method of carbon nanotube growth pioneered by Dai, et al. often results in nearly perfectly transparent electrical contacts, and is thus ideally suited for transport measurements in single-walled carbon nanotubes SWNTs. However, we have observed through HRTEM that growth by the “standard recipes” used to produce individual single-walled carbon nanotubes often result in a fraction of double-walled carbon nanotubes (DWNTs). The existence of these samples not only reduces the yield of devices based on single-walled nanotubes, but also affords the opportunity of a new structure to study the interactions between neighboring shells in a multi-walled sample. Because we expect the differences in transport behavior between SWNTs and DWNTs to be subtle, we would like to combine transport measurements with HRTEM on the same DWNT. We have developed a substrate based on silicon nitride membranes compatible with both HRTEM and electron beam lithography, allowing us to combine structural information from TEM with standard transport measurements. We will present preliminary transport results on DWNTS and discuss future experiments to understand the coupling between shells in multi-walled nanotubes.

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