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Abstract for an Invited Paper  
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**Maria Goeppert Mayer Award Lecture: Spectroscopy of Hybrid Superconductor-Carbon Nanostructure Systems**

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The electronic properties of carbon nanotubes and graphene have excited much interest, for both fundamental science and technological applications. In this talk, I will discuss how coupling superconductors to these carbon nanostructures can enable new spectroscopic tools. In particular, I will discuss our experiments demonstrating that superconducting probes on carbon nanotube quantum dots can enhance weak spectroscopic features. I will also show how superconducting tunnel probes enable direct measurements of electron-electron interactions in carbon nanotubes. Finally, I will present data showing that connecting graphene to superconductors allows for the spectroscopy of individual, tunable superconducting (Andreev) bound states.