Stanford University Center for Probing the Nanoscale: Outcomes and Legacy

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The Center for Probing the Nanoscale (CPN) at Stanford University is focused on the development of new measurement tools for nanoscale research. CPN has funded 26 faculty and 56 graduates over a decade to develop nanoprobes in over 25 research areas. These efforts have produced over 150 peer-reviewed journal publications, five patents, and five spin-off companies. Research highlights that will be discussed in this presentation include ultrasensitive SQUID sensors, scanning microwave impedance microscopy, nanoMRI, and ultra-fast bio-probes. In addition to these scientific advancements, educating the public about nanotechnology is at the core of CPN's outreach activities. Over its lifetime, CPN has had over 14,000 education and outreach participants. CPN organizes a range of educational workshops and partners with formal and informal educational organizations with the goal of creating a diverse, science-literate workforce. CPN has developed two nano S&E courses and an Annual Nanoprobes Workshop. Assessment reports from our highly rated outreach program, the Summer Institute for Middle School Teachers, have indicated that it reaches over 1,100 students each year by bringing nanoscience activities into the classroom. CPN has been instrumental in establishing a nano activities library for outreach, an interdisciplinary nano research community, and a shared nano facility at Stanford.

David Goldhaber-Gordon is a Professor of Physics at Stanford University and the Director of the Center for Probing the Nanoscale. He studies how electrons organize themselves in semiconductor nanostructures, to extend our understanding of quantum mechanics to interacting particles, and to provide the basic science that will shape possible designs for future transistors.