

**Proposal for Research and Development  
of a  
Silicon-Drift-Chamber Tracking Subsystem**

Princeton University will undertake to characterize the performance of silicon drift chambers for vertexing and tracking in the SSC environment. Issues for particular study are the sensitivity of these devices to temperature variation and to magnetic fields. We will also participate in the design of a new set of devices with rectangular geometry, suitable for tracking at the SSC.

In parallel with the hardware development we are undertaking a detailed simulation of the tracking system in a software simulation based on ISAJET and GEANT.

Princeton personnel whose primary research is the SSC R&D are Kirk McDonald (contactperson), J.G. Heinrich (software), and C. Lu (hardware). In addition, Prof. Daniel Marlow and several students will contribute part-time to the hardware development, and we will have good access to the mechanical and electrical support groups maintained under our regular D.O.E. contract.

The proposed work is described in greater detail by W. Chen *et al.* in *SSC Detector Subsystem R&D Proposal to Develop Track and Vertex Detectors Based on Silicon Drift Devices* (Oct. 1, 1989). This proposal is part of the work covered by the Memorandum of Understanding between the Silicon Drift Vertex Detector Collaboration and the SSC Laboratory for FY 1990 signed on Feb. 20, 1990.

## Budget Proposal

<b>A. Equipment Funds</b> .....	<b>\$25k</b>
1. PC-clone computer, NIM and CAMAC crates, electronics modules \$10k	
2. Positioning stages (for use in magnetic fields .....	\$5k
3. Masks for new silicon drift devices .....	\$10k
<b>B. Operating Funds</b> .....	<b>\$5k</b>
1. Travel and miscellaneous operating expenses .....	\$5k
<b>Total</b> .....	<b>\$30k</b>

Any labor costs for this project are to be borne by our regular D.O.E. High Energy Physics contract.