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The NSF Condensed Matter Physics Program

PAUL SOKOL, Division of Materials Research, National Science Foundation

The Condensed Matter Physics (CMP) program in the NSF Division of Materials Research (DMR) supports experimental, as well as combined experiment and theory projects investigating the fundamental physics behind phenomena exhibited by condensed matter systems. CMP is the largest Individual Investigator Award program in DMR and supports a broad portfolio of research spanning both hard and soft condensed matter. Representative research areas include: 1) phenomena at the nano- to macro-scale including: transport, magnetic, and optical phenomena; classical and quantum phase transitions; localization; electronic, magnetic, and lattice structure or excitations; superconductivity; topological insulators; and nonlinear dynamics. 2) low-temperature physics: quantum fluids and solids; 1D & 2D electron systems. 3) soft condensed matter: partially ordered fluids, granular and colloid physics, liquid crystals, and 4) understanding the fundamental physics of new states of matter as well as the physical behavior of condensed matter under extreme conditions e.g., low temperatures, high pressures, and high magnetic fields. In this talk I will review the current CMP portfolio and discuss future funding trends for the program. I will also describe recent activities in the program aimed at addressing the challenges facing current and future principal investigators.