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Update on CMP and Quantum Materials at NSF

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The Condensed Matter Physics program at the Division of Materials Research, NSF, supports experimental, as well as combined experiment and theory projects investigating the fundamental physics behind phenomena exhibited by condensed matter systems. Representative research areas in such systems 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; 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, 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 presentation I will describe the current status of CMP program and discuss some of the program development activities and opportunities related to the NSF's Quantum Leap Big Idea, especially in the area of Quantum Materials.