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Abraham Pais Prize Lecture: Shifting Problems and Boundaries in the History of Modern Physics

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A long established category of study in the history of science is the “history of physical sciences.” It is a category that immediately begs the question of disciplinary boundaries for the problems and subjects addressed in historical inquiry. As a historian of the physical sciences, I often have puzzled over disciplinary boundaries and the means used to create or justify them. Scientists most often have been professionally identified with specific institutionalized fields since the late 19th century, but the questions they ask and the problems they solve are not neatly carved up by disciplinary perimeters. Like institutional departments or professorships, the Nobel Prizes in the 20th century often have delineated the scope of “Physics” or “Chemistry” (and “Physiology or Medicine”), but the Prizes do not reflect disciplinary rigidity, despite some standard core subjects. In this paper I examine trends in Nobel Prize awards that indicate shifts in problem solving and in boundaries in twentieth century physics, tying those developments to changing themes in the history of physics and physical science in recent decades.