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Abraham Pais Prize for History of Physics: Physics Textbooks Don't Always Tell the Truth

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Anyone who studies the history of physics quickly realizes that the history of physics presented in physics textbooks is often inaccurate. This is not necessarily a bad thing. The purpose of textbooks is to help students learn physics. An inaccurate history may serve a pedagogical purpose. It may help to explain concepts more clearly than the actual history. I believe, however, that it is important for those of us who teach physics to know the accurate history. In this talk I will discuss two episodes from the history of modern physics, Millikan's experiments on the photoelectric effect and the Ellis-Wooster experiment on the energy spectrum in β decay. Everyone knows that Millikan's work established the photon theory of light. The problem is that what everyone knows is wrong. The Ellis-Wooster experiment, on the other hand, is rarely discussed in physics texts, but it should be. In this talk I will present a more accurate history of these experiments.