American Nuclear Society Northern California Section Dinner Meeting

**Applied Antineutrino Physics** 

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Antineutrinos are electrically neutral, nearly massless fundamental particles produced in large numbers in the cores of nuclear reactors and in nuclear explosions. In the half century since their discovery, major advances in the understanding of their properties, and in detector technology, have opened the door to a new discipline – Applied Antineutrino Physics. Because antineutrinos are inextricably linked to the process of nuclear fission, many applications of interest are in nuclear nonproliferation. In this talk I will introduce the (anti)-particle and means for its detection, describe potential nonproliferation applications and their overlap with fundamental neutrino science, and provide a short survey of ongoing research in the field.

