

Crocker Nuclear Laboratory

The history of the Crocker Nuclear Lab begins almost 90 years ago, when a gift from Banker and Regent William Crocker funded the establishment of the Crocker Radiation Lab and the 60" Cyclotron on the UC Berkeley Campus in the 1930s, under the direction of Ernest Lawrence.

The 60" Cyclotron was the workhorse of the Berkeley Nuclear Physics program through the 1950s, making great research contributions to the Manhattan Project, among other things.



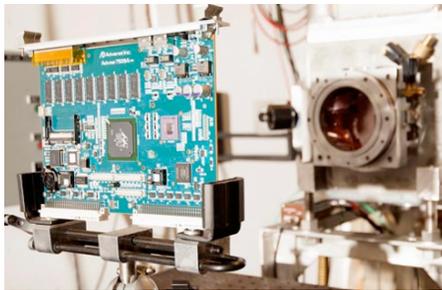
When it was decommissioned, John Jungerman, a UC Davis Professor who had been one of Lawrence's students, convinced Berkeley to give the university the steel "yoke" of the magnet. This became the foundation of our 76" Cyclotron, which first operated in 1966. The Cyclotron can accelerate several types of particles to variable energies.



Today, the Cyclotron is used one week per month to treat a rare form of eye cancer, in partnership with the Radiation Oncology Group at UC San



Francisco. The rest of the time it's primarily used to study radiation effects for the aerospace industry and high energy particle physics. Users include NASA, Air Force/Space Force, and numerous companies of all sizes.



In recent years, we have also significantly increased research and educational activities in the lab. These include grants to development of the production of ^{211}At , an isotope with potential to treat cancer, as well as grants to develop high speed instrumentation. We are also developing the capability to do nuclear cross section measurements. In house research currently supports four PhD students and has supported numerous undergraduates

over the years. We also participate in an annual summer school to train PhD students from multiple universities in aspects of nuclear analytical techniques.

We are currently in the process of upgrading our control system to incorporate automation and machine learning, with the goal of improving our performance and expanding our hours of operation to accommodate more users.

