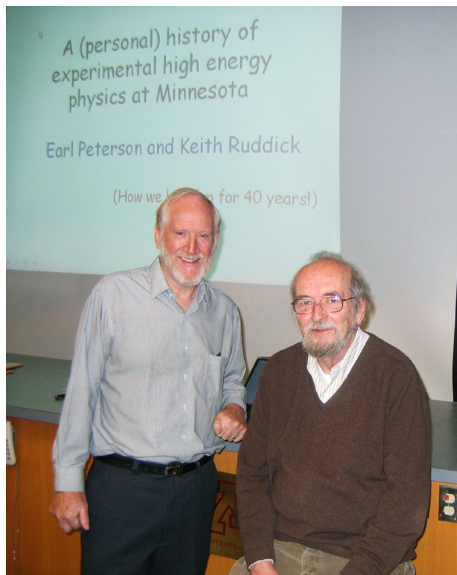


# Ruddick retires



*Keith Ruddick and Earl Peterson before their joint colloquium in November, on the history of High Energy Experimental physics at Minnesota.*

Professor Keith Ruddick retired last spring after more than forty years as a high energy experimental physicist at Minnesota. He is still involved with the MINOS and NOvA experiments. His role in the NOvA project is in an advisory capacity and his role in MINOS will continue as long as the experiment is running, which is projected to be another two to three years.

Ruddick came to Minnesota in 1966 as an Assistant Professor, hired by Professor Emeritus Hans Courant. Ruddick had worked with electronic triggering devices as a graduate student in his native England and as a postdoctoral Research Associate at Michigan. Ruddick remembers that he was put in charge of a small group of graduate students only a year younger than himself.

At that time Professors Courant and Marquit were using bubble chambers to study high energy interactions. This technique of making the interactions visible had already shown their results, but more detailed studies of rare processes, for example, required a triggered technique.

The bubble chamber picture scanning equipment could also be used to measure and analyze photographs of interactions from triggered spark chamber experiments. The group spent a lot of time at Argonne's Zero Grating Synchrotron experiment studying interactions with neutron and gamma rays in the final state, which were very difficult to analyze. "We found a niche because we were looking at something no one else wanted to do." During this period at Argonne, the group's postdoc left to Canada to avoid the draft, leaving them suddenly in need of "a warm body in the experiment." Earl Peterson was a theory post doc at Argonne who got roped into helping. Peterson switched his area of study from theory to experiment and eventually became a professor at Minnesota. (Peterson retired from teaching last year, but is still Principal Investigator for the

MINOS experiment at the Soudan Mine.)

Professors Markshak and Heller joined the group shortly afterward, first as post docs and then as faculty. Over the years Ruddick was involved with collaborations at Argonne and Fermilab as well as what he called one very pleasant summer in Princeton helping a Wisconsin group in setting up some triggering electronics for a rapid cycling bubble chamber at the Princeton-Penn accelerator. That summer also proved fruitful years later when the Wisconsin group was involved in setting up a collaboration to look for proton decay and suggested that Minnesota also join. Eventually, however, the Minnesota group decided to "go it alone" and the first Minnesota experiment was built in the Soudan Mine in 1980. Though Soudan I was not successful in finding proton decay, a second much larger collaboration, Soudan II, was borne out of it. It turned out that main background to proton decay was neutrinos and that that the Soudan mine was the perfect place to study neutrino oscillations. Out of this idea, MINOS was created and subsequently NOvA which is scheduled to begin collecting data in 2010.

Ruddick is still advising one student, who will be graduating soon. Ruddick says his role as an advisor in NOvA is likely to diminish considerably by the time the experiment begins, and he has in the meantime plenty of travel plans to keep himself occupied. Ruddick and his wife have already traveled to Egypt, Spain and Italy. They have a long road trip in the U.S. planned for later this year.



*Professor Ruddick works on the Soudan I experiment, circa 1980.*