

Historical success

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The compelling desire of my research group is to produce exciting physics results. Our primary motivation is physics discovery. Based upon this guiding principle, our main topics of research are those with great discovery potential. We would like to be granted the opportunity to continue this endeavor.

I feel very fortunate that I have been deeply involved with three major discoveries in my career, a special privilege above most people's dreams.

I. Discovery of the charm quark in 1974; as a post-doc at MIT, I was one of the very active participants of the experiment that led to the discovery of the J/ψ particles at Brookhaven, first evidence of the charmed quark. For this discovery, my supervisor, Professor Samuel Ting, shared the 1976 Nobel Prize with Professor Burton Richter.

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2. Discovery of the Gluon Jet in 1979; I was the leading figure in the discovery of the three-jets events in the TASSO experiment at DESY which signifies the **first direct observation of the gluon.** This led to sharing, with three German physicists (Soding, Wolf, Wiik), the 1995 High Energy and Particle Physics Prize of the **European Physical Society.** I was elected Fellow of American Society of Arts and Sciences in 1996.

3. Discovery of the Higgs boson in 2012; together with my Wisconsin students and postdocs, we played a leading role in the discovery of the Higgs boson – in the Higgs to 2 photons, Higgs to 4 leptons and the Higgs combination effort; my group has been among the major contributors and was the first one to obtain the five sigma observation, which led to the CERN announcement of the discovery on July 4, 2012.

I am extremely pleased that my young graduate students and postdocs got this extraordinary chance to experience the Higgs discovery in their early career.