Abstract
The Nobel Prize in Chemistry in 2005 was awarded for "for the development of the metathesis method in organic synthesis." The lecture will discuss the origin of the Nobel Prizes and how the speaker became part of that history. The scientific part of the talk will concern the origin of the "olefin metathesis" reaction (discovered over fifty years ago), what discoveries led to the modern systems that we have access to today, and what role the speaker played in those discoveries.

Abstract
The major interest of the speaker has been "alkylidene" complexes and their use as catalysts for variations of the olefin metathesis reaction. The lecture will discuss some of the most recent results in the area of metathesis and the challenges that lie ahead. The second topic will concern an even more difficult catalytic reaction, one that is carried out on a massive scale every day, namely the catalytic reduction of dinitrogen to ammonia. For the first time in over forty years of research it has now been shown that dinitrogen can be reduced to ammonia catalytically at room temperature and pressure with protons and electrons. The key metal in each reaction is molybdenum, element 42.

Biography: Richard R. Schrock received his Ph. D. degree in inorganic chemistry from Harvard in 1971 under the tutelage of John Osborn. After spending one year as an NSF postdoctoral fellow at Cambridge University working for Lord Jack Lewis, and three years at the Central Research and Development Department of E. I. duPont de Nemours and Company in Wilmington Delaware, he moved to M.I.T. in 1975. He became full professor in 1980 and the Frederick G. Keyes Professor of Chemistry in 1989. His interests include the inorganic and organometallic chemistry of high oxidation state, early metal complexes (especially those that contain an alkylidene or alkylidyne ligand), catalysis and mechanisms, catalytic reactions that involve alkylidene complexes, and the catalytic reduction of dinitrogen. His extensive list of awards has been completed with the 2005 Nobel Prize in Chemistry, which he shared with R. H. Grubbs and Y. Chauvin. He has been elected to the American Academy of Arts and Sciences and the National Academy of Sciences. He was Associate Editor of *Organometallics* for eight years, has published more than 500 research papers, and has supervised over 140 Ph.D students and postdocs.