Staying Honest: An experimentalist looks at fraud and self-deception

Recent scandals show that outright fraud sometimes occurs in science and engineering. However more commonly reports are later found to be false because investigators have made errors in technique or interpretation. In this talk I will begin by reviewing a few recent scandals, with causes ranging from outright fraud to probable self-deception. I will then comment on a major challenge for an experimentalist, that of the selection of data, especially in circumstances where equipment is not always working properly. This is particularly difficult in our present environment, where there is considerable pressure to quickly obtain important, innovative results. I will conclude with some personal observations, including an example of near-self deception and strategies that are helpful in the laboratory. Important points will be illustrated by quotations from famous philosophers, including Ronald Reagan, Sgt. Joe Friday, and Pogo.