

## **NEVER GIVE UP YOUR DREAMS**

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In 1950, when I was 8 years old, Denmark was sending a research vessel around the world to discover the unknown world of the oceans. I followed this expedition and was so fascinated that I decided that when I was grown up my dream would be to be a scientist and to go on expeditions to discover the unknown world. Later after high school, I realized that the unknown world also included the world of molecules and especially those active in living organisms. After finishing an education in chemical engineering I turned to protein chemistry and molecular biology and at the same time became fascinated by mass spectrometry as an analytical technique. Mass spectrometric analysis of proteins was at that time, in the late 1960's, considered utopia. Proteins by definition could not be brought to the gas phase in a mass spectrometer. Nevertheless, I believed in it. I loved proteins and mass spectrometry, and in spite of all the difficulties in the first decades, I maintained the dream that mass spectrometry could be a key analytical technique in protein studies. As you all know, this dream has been fulfilled. New mass spectrometric tools have been developed, and we can now in proteomics experiments identify and characterize numerous proteins in a single day using mass spectrometric analyses. The next level in proteomics is to localize the proteins in living organisms in space and time. This is often achieved by generating fusion proteins between the protein of interest and green fluorescent protein (GFP) followed by time-resolved confocal microscopy. Here also new tools are needed and especially a greater selection of fluorescent proteins. In 2006-2007 Denmark again sent a research vessel around the world. That allowed me to fulfill my childhood dream: To go on an expedition and search for new fluorescent proteins by night diving in tropical coral reefs. My lecture will take you from the early stages of protein mass spectrometry to the present state of the art and on an expedition to discover new fluorescent proteins in marine organisms and to their characterization using proteomics techniques.