Examples will be given of the use of large research databases for the advancement of scientific research. Such databases are increasingly used for research in the 'hard' mathematics-based disciplines such as physics and engineering, but also in more 'soft' disciplines, such as sociology, psychology and, in general, the humanities.

In between the 'hard' and 'soft' disciplines, lay disciplines such as biomedicine and health care, from which we have selected our illustrations. This latter area can be subdivided into: (1) Fundamental biomedical research, related to the 'hard' scientific approach; (2) Clinical research, using both 'hard' and 'soft' data; and (3) Population-based research, which can be subdivided into prospective and retrospective research.

The examples that we shall offer are representative for using computers in scientific research in general. In the presentation we will address one overall theme: the discovery of new scientific knowledge from large databases of measurements, observations and interpretations.