In many fields of study, the amount of measured data or produced simulation results grows faster than it can be processed and analyzed with established methods. The associated challenges in the form of generation, analysis and storage of large data sets are often referred to as Big Data and considerably influence modern scientific practice. The conference “Big Data in Cologne” provides a platform for scientists of the University Cologne and the Research Alliance Cologne to present their work and the problems they encounter when dealing with large data sets. The conference aims at identifying common interests and also problems in the field of Big Data to encourage the researchers to find interdisciplinary solutions. The research potentials cover topics such as intelligent scientific data archiving, efficient generation of simulation results, faster algorithms, and also legal aspects of handling large data sets, particularly in medicine.