back/vertebrae surgery, where there is a need for precise placement to avoid disturbing nerves or blood vessels. Computer-aided/analysis methods are being used to make decisions on such types of things.

Future and Challenges of 3D Medical Informatics

- Three-dimensional medical informatics can provide new frontiers in medical education in anatomy, physiology, molecular biology, and other areas.
- Already, research in 3D techniques has made an impact on computer-assisted surgical planning and image-guided interventions, and we’d expect that the number of these will increase in the future.
- Computer-aided diagnosis/early detection may become one of the most used tools in medicine, provided from data mining analysis of patterns, and thus the discovery of predictable patterns.

This discussion is short for three reasons:

1. Medical informatics is a relatively new field.
2. There are recent extensive volumes/books on the subject that can serve well. Those who want to explore medical informatics more thoroughly can order a four-volume set that was published in September 2008 (at a price tag of about $3,000): Joseph Tan (ed.). (2008). *Medical Informatics: Concepts, Methodologies, Tools, and Applications*; published by Medical Information Science Reference; ISBN-10: 1605660507
3. The focus of this book is *practical* data mining, and the purpose of this chapter on medical informatics is just to briefly make you aware of this domain. There are several medical informatics tutorials included within the printed pages of this book, on the accompanying DVD, and also on the companion Web site, where additional tutorials will be added from time to time.

Journals and Associations in the Field of Medical Informatics

- American Medical Informatics Association (http://www.amia.org/)
- Journal of the American Medical Informatics Association (http://www.jamia.org/)

POSTSCRIPT

With this brief introduction to the large field of medical informatics, you are ready to do some tutorials associated with this chapter. See Diabetes Clinical Management (on the included CD-DVD) for an example of how data mining can be applied to diagnosis and managing patient care. You will find several other tutorials on medical informatics on the CD-DVD. The next chapter follows the initial biological theme to focus on bioinformatics, which is concerned primarily with DNA microarray processing.