The Current Issue

The September issue of the Bulletin was on dealing with biological sequence data. That issue described some of the work going on to make database systems a suitable tool in the biology area. The current issue is on the broader issue of how database systems can be relevant to many of our sister sciences, including but not limited to biology. The traditional target for database technology was business data processing. Scientific applications present a new set of requirements with the potential to push database technology in new directions. What is interesting, however, is how successful one can be by using existing database systems, and by extending them in directions that the database community was already inclined to pursue.

Scientific applications are tremendously important. But they represent only a modest business opportunity in terms of market size. So the fact that science can be well served by existing technology or extensions to this technology is a boon, both to database researchers and to the scientists in other disciplines that are increasingly served by database technology. Thus, what other disciplines seem to need are more capability to manage metadata, additional search strategies and techniques, additional scalability (to the petabyte range), improved data visualization, automated data translation, and better tools, in some cases for very mundane activities like loading data. These are capabilities that database systems researchers have a long interest in and are continuing to improve. So the moral of this story is that databases can improve in their ability to serve their traditional market, which after all also needs these features, while they serve the needs of the scientific community.

Meral Özsoyoğlu, the editor of the current issue, has brought together an enlightening collection of papers from database folks who are collaborating with scientists from an interesting subset of our sister sciences, biology, astronomy, engineering, etc. The emphasis here is on database technology, both how it can be extended, and how it can be adapted to the needs of scientists in these disciplines. The issue is not on the science of the other disciplines, except as that is needed to describe the motivation for extending and adapting. As is characteristic of Bulletin editors, Meral has reached out to both academic and industrial database specialists in putting together the issue. This always requires of an editor determination, patience, and hard work. I want to thank Meral for her very successful efforts on this fine issue, which should be of interest to a very large segment of the database community.