Abstract: The application of software development methods for scientific and biological research tools has been considered a desirable approach. Through a number of examples, we illustrate the advantages of applying such methods in terms of software development, maintenance, and addition of new functionality. Specifically, we describe our current experience with Predictive Health Initiative, a collaboration between Emory University and Georgia Tech, to explain the application of modern software development methods for data and system integration. For example, we use domain-specific code generation to integrate data from heterogeneous and evolving data sources. In addition, we apply concepts and techniques from event processing and services computing to implement required functionality that would have been prohibitively expensive without them.

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