

APOLLO: A SEQUENCE ANNOTATION EDITOR

Ed Lee¹, Suzanna Lewis¹, Nomi Harris¹, Mark Gibson¹, Steven Searle², Raymond Chetty³

¹ Berkeley Bioinformatics and Ontologies Project, Lawrence Berkeley National Laboratory, Berkeley, CA, USA

² Wellcome Trust Sanger Institute, Hinxton, Cambridge, UK

³ The Arabidopsis Information Resource, Carnegie Institution of Washington, Stanford, CA, USA

The well-established inaccuracy of purely computational methods for annotating genome sequences necessitates an interactive tool to allow biological experts to refine these approximations by viewing and independently evaluating the data supporting each annotation. Apollo was developed to meet this need, enabling curators to inspect genome annotations closely and edit them. FlyBase biologists successfully used Apollo to annotate the *Drosophila melanogaster* genome and it is increasingly being used as a starting point for the development of customized annotation editing tools for other genome projects.

Apollo is an Open Source Java application that is easy to install and run on any platform. Apollo is highly configurable and has been adapted by external groups to make it better suit their individual needs. These adaptations range from adding new data types to the display configuration file, to writing new data loading modules to enable Apollo to read annotation data from proprietary databases.

Apollo is the annotation editor component of the Generic Model Organism Database (GMOD) project, which aims to provide a ready-to-use toolkit to genome centers.

After a long hiatus, development on Apollo has resumed and many new features and bug fixes have been implemented or are planned for the near future. Some of these include Generic Feature Format Version 3 (GFF3) support, improved Chado connectivity, undo, Sequence Ontology (SO) integration, and multiple sequence alignment integration to the exon detail editor.

The official Apollo website is: <http://apollo.berkeleybop.org>. Apollo is distributed under the Artistic License.

Contact: Ed Lee (elee@berkeleybop.org)