Innovative integration of Web 2.0 applications to enhance library-based bioinformatics support

Kristi L. Holmes

Ellen Dubinsky

Lili Wang

Follow this and additional works at: https://digitalcommons.wustl.edu/becker_pubs

Part of the Medicine and Health Sciences Commons

Recommended Citation
https://digitalcommons.wustl.edu/becker_pubs/7
INNOVATIVE INTEGRATION OF WEB 2.0 APPLICATIONS TO ENHANCE LIBRARY-BASED BIOINFORMATICS SUPPORT

Kristi L. Holmes, PhD
Ellen Dubinsky, MLIS
Lili Wang, MD, MS

Bernard Becker Medical Library
Washington University School of Medicine
The mission of the Bernard Becker Medical Library is to provide information resources and technology in support of the educational, research, and patient care objectives of the School of Medicine.

In this spirit, the Bernard Medical Library’s Division of Translational Research Support ultimately serves to foster collaboration and enhance translational endeavors of Washington University School of Medicine by providing broad support services to the University community.
Translational research

To improve human health, scientific discoveries must be translated into practical applications. Such discoveries typically begin at “the bench” with basic research — in which scientists study disease at a molecular or cellular level — then progress to the clinical level, or the patient’s “bedside.”

Scientists are increasingly aware that this bench-to-bedside approach to translational research is really a two-way street. Basic scientists provide clinicians with new tools for use in patients and for assessment of their impact, and clinical researchers make novel observations about the nature and progression of disease that often stimulate basic investigations.

NIH Roadmap


http://medschool.ucsf.edu/news/features/
How?

By working to efficiently address critical information needs on campus.
Welcome to Learning 2.0@Becker, or 23 Things to explore and learn about Web 2.0 tools!
You've found the Bernard Becker Medical Library's Learning 2.0 blog. Changes are that if you've made your way here you're either:

- A member of the Becker staff who's interested in participating in the Learning 2.0 Project
- Interested in learning about some of the new Web 2.0 tools and applications (such as blogs, wikis, Flickr, and del.icio.us) that you've heard so much about
- Are interested in actually playing around with some of those cool Web 2.0 tools and figuring out how to use them in your daily work and leisure activities.

No matter why, we're glad you're here.

Learning 2.0 is an online learning process that encourages staff and others to...
Learning 2.0

Welcome to Learning 2.0@Becker, or 23 Things to explore and learn about Web 2.0 tools!
You’ve found the Bernard Becker Medical Library’s Learning 2.0 blog. Changes are that if you’re inside your way here you’re either:

- A member of the Becker staff who’s interested in participating in the Learning 2.0 Project
- Interested in learning about some of the new Web 2.0 tools and applications (such as blogs, wikis, Flickr, and del.icio.us) that you’ve heard so much about
- Are interested in actually playing around with some of these cool Web 2.0 tools and figuring out how to use them in your daily work and leisure activities.

No matter why, we’re glad you’re here.

---

...and speaking of Facebook
This is a great way to keep in touch with my family, friends and classmates:
BIOINFORMATICS@BECKE
R

TRAINING & EDUCATION
CONSULTATION SERVICES
RESOURCE DEVELOPMENT
PARTNERSHIPS & COLLABORATION

xkcd

BERNARD BECKER MEDICAL LIBRARY
Washington University School of Medicine
Becker Library, along with a growing number of research institutions, realizes the importance of fostering the connection between research in the biological and biomedical sciences and information tools.
Bioinformatics@Becker

Our role:

1. Training and education
2. Consultation services
3. Resource development
4. Establish and cultivate partnerships and collaboration
Bioinformatics web portal

Goal: Utilize Web 2.0 technologies to promote discussion, establish dialogue and connect the shared intelligence of the research community

What is Web 2.0?

Applications
- Blog
- Bookmarking
- Communication
- RSS
- Wikis
- E-learning
- Networking
- Collaboration

BERNARD BECKER MEDICAL LIBRARY
Washington University School of Medicine
Bioinformatics web portal

The Bernard Becker Medical Library's Bioinformatics Initiative serves to foster collaboration and enhance the biomedical research endeavors of Washington University School of Medicine by providing support services to the community.

- About Bioinformatics @ Becker
- Bioinformatics Specialists
- Bioinformatics Classes
- Bioinformatics Resource Guides on del.icio.us
  - becker.microarray
  - becker.molecular_medicine
  - becker.research
- Bioinformatics@Becker Blog
- Software Managed by Becker Library
- Software Licensed through WUSTL Network Technology Services
- BioCommunity
- RSS Feeds
- Need help? Ask-A-Bioinformatician
- Recommend a New Resource

Partek Genomics Suite Software Now Available
Software and Database Survey
Supplemental Course Information
- Ingenuity Pathways Analysis (IPA) - March 2009
Conserved Domain Database (CDD) updates
Posted May 16th, 2008 by Kristi • No Comments

A new version of the Conserved Domain Database (CDD) and a new version of the CD-Search tool from NCBI were recently released.

From NCBI:

Proteins often contain several modules or domains, each with a distinct evolutionary origin and function. NCBI's Conserved Domain Database is a collection of multiple sequence alignments for ancient domains and full-length proteins. The CD-Search service may be used to identify the conserved domains present in a protein query sequence.
Bookmarking our resource guides

del.icio.us / becker.research / [your bookmarks | your network | subscriptions | links for you | post]

Resources for First-Time NIH Grant Applicants  edit / delete
to grants funding resources ... 57 mins ago

GenomeWeb  edit / delete
to bioinformatics biological information news ... saved by 34 other people ... 3 hours ago

About The EBI  edit / delete
to EBI information ... saved by 2 other people ... 3 days ago

Artemis DNA sequence viewer and annotation tool  edit / delete
to bioinformatics browser genome visualization sequence ... saved by 30 other people ... 3 days ago

Sockeye Main Page — Canada's Michael Smith Genome Sciences Centre  edit / delete
to genome browser visualization genome ... saved by 3 other people ... 3 days ago

Help Page :: NCBI Sequence Viewer v 2.0  edit / delete
to sequence visualization DNA ... saved by 1 other person ... 3 days ago

Genome Workbench Home Page  edit / delete
to bioinformatics genome NCBI software tools ... saved by 7 other people ... 3 days ago

PLoS ONE: Publishing science, accelerating research  edit / delete
to journal openaccess ... saved by 374 other people ... on Jan 32

to toxicity assay ... saved by 5 other people ... on Jan 16

GENEVAR - GEnie Expression VARiation  edit / delete
to expression variation microarray ... saved by 1 other person ... on Jan 11

SDSC Biology Workbench  edit / delete
to bioinformatics tools ... saved by 52 other people ... on Jan 11

Home - ClinicalTrials.gov  edit / delete
to Clinical Trials database ... saved by 31 other people ... on Jan 09

National Library of Medicine - National Institutes of Health  edit / delete
to reference library ... saved by 22 other people ... on Jan 07

tags: database tool Protocols protein NCBI sequence structure RNA EBI gene prediction sequence analysis software expression genome single_nucleotide_polymorphism SNP nucleotide sequence_resource microarray motif pathway nucleic_acid ontology education enzime opensource promoter OOC OpenCourseWare protein_analysis visualization cancer chemistry dictionary funding grants sequence tools transcription_factor variation alignment development elukaryote GEMM mouse organon WUGS software annotations bioinformatics browser genome_analysis genome_browser DNA information reference research conserved_domin Google HMM interaction mass_spec NH pdb calcium clinical_trials drugs homology openaccess prediction proteomics resources restriction enzyme sequence_similarity statistics vector 3-D algorithms amplifier assay biotech buffers Cellogram cellular_catholic comparative_conferences contamination_engines disease drosophila functional_site genes genotyping GEO glossary GEMM hapmap health homology inheritance journal journam openaccess OpenLibrary ontologies open_search media microtubulin model mRNA neuron NLM OFF organoids patients pharmacogenetics plasmon productivity pat restriction SAGE sccRNA Stamen splice systems biolgy tacyonology tutorial virus web_applications wikipedia worm yeast zebrabish

tag options

» view as cloud | list
» sort by alpha | freq
» use minimum: 1, 2, 5
» show | hide bundles
» bundle tags
» edit tags | rename | delete
Communicate: Askbioinfo!
RSS presence in the catalog with current contents

- **GENETIC VACCINES AND THERAPY**
  - Electronic source: BioMed Central Ltd.
  - URL: [http://www.gvt-journals.com/home/](http://www.gvt-journals.com/home/)
  - Electronic date range: V.1, 2003-
  - RSS feed for current table of contents:
  - Currently receiving only electronic edition
  - NLM ABR: GENET VACCINES THER

- **GENETICS**
  - Electronic source: HighWire Press
  - URL: [http://www.genetics.org](http://www.genetics.org)
  - Electronic date range: V.1, 1916-
  - RSS feed for current table of contents:
  - Currently receiving only electronic edition
  - NLM ABR: GENETICS

- **GENETICS IN MEDICINE**
  - Electronic source: Ovid
  - URL: [http://gateway.ovid.com/ovidweb.cgi](http://gateway.ovid.com/ovidweb.cgi)
  - Electronic date range: V.2, 2000-
  - RSS feed for current table of contents:
  - Currently receiving only electronic edition
  - NLM ABR: GENET MED

---

**Bernard Becker Medical Library Catalog**

All Journal Titles -- Searches for all journal titles, print and electronic, available through Becker Medical Library.

**Genetics**

- Electronic source: HighWire Press
- URL: [http://www.genetics.org](http://www.genetics.org)
- RSS feed for current table of contents:
- Date range: V.1, 1916-
  - Full-text access restricted to WU faculty, staff, and students.

- Print holdings: 1918 2006/3N4/10-174
- Electronic holdings: 1916 0000/1+
- Print volumes shelved on level 4
- Print supplements bound with journal

NLM ABR: GENETICS
Wiki

The BioKnowledgebase Wiki was developed as a collaborative resource to promote just-in-time access to information and utilize the collective knowledgebase of the Washington University School of Medicine research community. For more information, contact Kristi Holmes at holmeskr@wustl.edu.

- Introduction
- Databases and Database Searching
- Nucleotide Sequence Analysis
- Protein Sequence Analysis, Proteomics
- Genome Resources
- Phylogenetic Analysis
- Biological Pathways/Systems Biology
- Sequence Similarity Searching
- Gene Expression Resources and Genomics
- Statistics
- Variation
- Structure
- WUSM Resources
- Programming & Languages/Advanced

Welcome to the BioKnowledgebase Wiki

The BioKnowledgebase Wiki was developed as a collaborative resource to promote just-in-time access to information and utilize the collective knowledgebase of the Washington University School of Medicine research community. For more information, contact Kristi Holmes at holmeskr@wustl.edu.

Topics
FAQs
Visit the Bioinformatics@Becker Portal

E-learning

Focus on just-in time instruction

- Online training modules which include:
  - voice-annotated PowerPoint presentations
  - Supplemental course materials which will include web-based write-ups about the different topics, as well as a web-based FAQ
  - Web and podcasts of lectures and seminars
  - Web-based training sessions which utilize web conferencing tools
  - Integration of Web 2.0 applications

- Continue work on courses to be offered at Becker. Ongoing work to organize courses as well as to develop online meeting registration, information posters, handouts, online support communities, etc.
E-learning support resources

Please contact Kristi Holmes or Lili Wang at BioInfo@wusm.wustl.edu if you have questions about any of these resources or if you would like to suggest a course topic for a future class.

- Software
  - Software Managed by Becker Library
  - Software Licensed through WUSTL Network Technology Services
  - DiscoveryGate
  - Ingenuity Pathways Analysis (IPA)
  - Partek GS
  - More...

- Databases
  - Cambridge Structural Database
  - database of Genotype and Phenotype (dbGap)
  - Entrez from NCBI
  - UniGene: An Organized View of the Transcriptome
  - More...

- Campus Resources
  - DBS Seminars and Events
  - Core Research Facilities

- Bioinformatics Classes

- Upcoming Classes

- Tutorials

- Guides/Documentation

- Supplemental Course Information
  - Ingenuity Pathways Analysis (IPA) - February 2008
  - Ingenuity Pathways Analysis (IPA) - March 2007
  - Field Guide to GenBank and NCBI Molecular Biology Resources
Other Initiatives
Connecting and networking

NetVibes
Connecting and Networking

Facebook and LinkedIn
Collaboration

1. Bioinformatics Advisory Group **
2. Biomedical Informatics Core
3. Division of Biology and Biomedical Sciences
4. Genome Sequencing Center
5. Other collaborative and productive relationships
   • MSCITS
   • Research Office
   • Office of Medical Student Education
Partnerships and Collaboration

Biomedical Informatics Core

- Function Express
  analysis and visualization of microarray data
- caTissue Suite
  unified biospecimen repository

Training resources for other specialized software analysis tools and databases
Partnerships and Collaboration

Genome Sequencing Center

- Resource procurement
  Partek, IPA, GeneGo

- Outreach and Collaboration

- Community Building
  User Groups

Consultation and support for research community

BERNARD BECKER MEDICAL LIBRARY
Washington University School of Medicine
# Research Pod

<table>
<thead>
<tr>
<th>Databases and Research Software</th>
<th>Statistical Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DiscoveryGate</td>
<td>SAS</td>
</tr>
<tr>
<td>Proteome BioKnowledge Library</td>
<td>SPSS</td>
</tr>
<tr>
<td>Protein Lounge</td>
<td>Stata</td>
</tr>
<tr>
<td>Cambridge Structural Database</td>
<td>Maple-Waterloo</td>
</tr>
<tr>
<td>Faculty of 1000 Biology</td>
<td></td>
</tr>
<tr>
<td>Faculty of 1000 Medicine</td>
<td></td>
</tr>
<tr>
<td>SCOPUS</td>
<td></td>
</tr>
<tr>
<td>ISI Web of Knowledge</td>
<td></td>
</tr>
<tr>
<td>SciFinder Scholar</td>
<td></td>
</tr>
<tr>
<td>Cn3D</td>
<td></td>
</tr>
</tbody>
</table>

**Presentation and Multimedia Tools**
- MS Visio
- Adobe Web Premium (CS3)
- MSOffice (including Publisher)

**Bibliographic Management**
- EndNote