Third-Party PubMed Tools

HEALTH SCIENCES LIBRARIANS OF ILLINOIS
NOVEMBER 10, 2016
ELIZABETH KISCADEN, MLIS, AHIP
NN/LM GMR
Objectives

Participants will be able to:

- Use and teach others about the latest updates to PubMed
- Name and gain familiarity using three types of third-party PubMed tools
- Identify situations in which using a third-party tool would be beneficial
- Stay current with new developments related to third-party PubMed tools
Agenda

- Introductions (15 minutes)
- What’s New in the NLM/NN/LM/GMR (15 minutes)
- What’s New with PubMed (20 minutes)
- The PubMed API (15 minutes)
- Third-Party Tools
  - Semantic Searching (20 minutes)
  - Group Exercise #1 (20 minutes)
  - Visualization (20 minutes)
  - Group Exercise #2 (20 minutes)
  - Simplification (30 minutes)
  - Group Exercise #3 (30 minutes)
- Discussion Questions (30 minutes)
What’s new at NLM?

- Medline celebrates 45th anniversary!
- New National Library of Medicine Director, Dr. Patti Brennan
- Launched a Request for Information (RFI) to solicit feedback from stakeholders for strategic planning
What’s new at NN/LM?

- New leadership, interviews ongoing
- Development of strategic goals
- 2016-2021 cooperative agreement period brings two new offices:
  - NN/LM Docline Coordination Office
  - NN/LM Public Health Coordination Office
- Funding mechanism transitioned from a contract to a grant
What’s new at the GMR?

AAAAHHHHHH!!!!!
What’s new at the GMR?
What’s new at the GMR?

- New staff - [https://nnlm.gov/gmr/about/staff](https://nnlm.gov/gmr/about/staff)
- Advisory groups
- Assessments coming your way!
  - Educational needs
  - Communication
- Development of all new....
  - Course offerings
  - Webinar series
  - Website and blog
  - Funding opportunities
  - Sponsored activities
  - Awards
Wake up!

- Get your device ready (smartphone, tablet or laptop)
- Go to kahoot.it
- Enter the game-pin number and a nickname
What’s new with PubMed

- DOI at the end of abstract display
- PubMed Journals released
- New Search Result filters in PMC: Open Access and back issue digitization
- PubMed celebrated its 20th anniversary!
Stay current with PubMed

- PubMed Update broadcast - Wednesday, January 25th, 2017 at 3pm ET/2pm CT
- PubMed New and Noteworthy
- NLM Technical Bulletin
- PUBMED-ALERTS@list.nih.gov
- MEDLIB-L
- NN/LM GMR Weekly Digest
PubMed API
PubMed API (E-utilities)

- API = Application Programming Interface
- Makes data available for use in other programs or interfaces
Want to know more about APIs?

- **How Stuff Works: How APIs Work:**
  [http://tinyurl.com/27rw2kn](http://tinyurl.com/27rw2kn)
  - Explanation of APIs, using conferencing software as an example.

- **Entrex AJAX:**
  - A third-party derivative of NCBI’s EUtils designed for launching searches directly from the browser (improves speed)
NCBI APIs series

The Insider’s Guide to Accessing NLM Data

Classes

Welcome to E-utilities for PubMed

Want to do more with PubMed? Want to extract just the PubMed data you need, in the format you want? Dreaming of creating your own PubMed tool or interface, but don’t know where to start?

Join us for the first in the Insider’s Guide series of webinars about more powerful and flexible ways of accessing NLM data, starting with an introduction to the Application Programming Interfaces (APIs) for PubMed and other NCBI databases. This series is geared toward librarians and other information specialists who have experience using PubMed via the traditional Web interface, but now want to dig deeper. This class will start with the very basics of APIs, before showing you how to get started using the E-utilities APIs to search and retrieve records from PubMed. The class will also showcase some specific tools and utilities that information specialists can use to work with E-utilities, helping to prepare you for subsequent Insider’s Guide classes. We will finish by looking at some practical examples of E-utilities in the real world, and hopefully inspire you to get out and put these lessons to use!

Upcoming Offerings

- No upcoming offerings of this class are currently scheduled. See below for recordings of previous offerings.

Recordings

- Wednesday, October 19, 2016: View recording

Class Materials

- Slides (PowerPoint)
- Slides, accessible version (PowerPoint)
- Script (MS Word)
- Sample code for class examples
Ideas for a project involving NLM APIs?

- Apply for funding through our office!
- Technology Improvement/Express Outreach
Wake up!

- Get your device ready (smartphone, tablet or laptop)
- Go to kahoot.it
- Enter the game-pin number and a nickname
PubMed alternatives

MEDSUM

pubget

PMinstant.com

BibliMed

EBIMed

hakia

HubMed:

SLIM v.2

goPubMed

LigerCat

Literature and Genomics Resource Catalogue
Themes

- Semantic searching
- Visualization
- Simplification
HelioText (formerly ETblast)

http://helioblast.heliotext.com/

**Developed by:**

HelioText, developers formerly of Virginia Biometrics Institute and UT Southwestern

Harold ‘Skip’ Gamer is the PI

**Claim to fame:**

Analyzes large chunks of text

From Skip Gamer: https://youtu.be/QvwVSvQytAA
Welcome to HelioBLAST

HelioBLAST is a free service provided by HelioText. The HelioBLAST text similarity engine finds text records that are similar to the submitted query. HelioBLAST uses our super-fast search engine, and this service is provided to demonstrate what can be done using text similarity searching. HelioBLAST can be customized to search a particular database or multiple ones; and proprietary databases can be created for individual clients.

Here, your query is searched against the citations (abstract and titles) in Medline/PubMed. Submissions are limited to 1,000 words, so we recommend your query should be an abstract or paragraph.
Welcome to Jane

Have you recently written a paper, but you're not sure to which journal you should submit it? Or maybe you want to find relevant articles to cite in your paper? Or are you an editor, and do you need to find reviewers for a particular paper? Jane can help!

Just enter the title and/or abstract of the paper in the box, and click on 'Find journals', 'Find authors', or 'Find Articles'. Jane will then compare your document to millions of documents in Medline to find the best matching journals, authors or articles.

Keyword search

Instead of using a title or abstract, you can also search using a keyword search, similar to popular web search engines. Click here to search using keywords.

A new home!

JANE has moved to a new home for improved stability. Many thanks to the Observational Health Data Science and Informatics for providing the hosting! Please update your bookmarks.
Items 1 to 10 of about 8692

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   [Fulltext service] Download fulltext PDF of this article and others, as many as you want.
Semantic MEDLINE

- Interface for MEDLINE that uses Natural Language Processing
GoPubMed

208 documents found

“Just one bad high:” considering synthetic cannabinoid outcome expectancies in adolescents.
Authors: Mathai, David S, et al.
METHODS/RESULTS: An 18-year-old male presented with altered mental status and seizures, complicated by respiratory failure.
Affiliation: Baylor College of Medicine, Houston, Texas, dmathai@bcm.edu, Menninger Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine, Houston

Δ9-THC intoxication by Cannabidiol-Enriched Cannabis Extract in Two Children with Refractory Epilepsy: Full
Authors: Crippa, Josué A B, et al.
We describe the cases of two children with treatment-resistant epilepsy (Case A with left frontal dysplasia and Case B with Dravet Syndrome) with initial symptom short time.
Affiliation: Department of Neuroscience and Behavior, University of São Paulo Ribeirão Preto, Brazil, Department of Clinical Medicine, Federal University of Parana Curitiba

Comparison of illegal drug use pattern in Taiwan and Korea from 2006 to 2014
Group Exercise #1

- Break into three groups (5/group)
- Experiment with GoPubMed and HelioBlast (and Semantic Medline with Liz’s credentials)
  - Semantic Medline credentials:
    - Username: lizlib & Password: 8008search!
- Answer these questions:
  - What are the pros/cons of each?
  - Is there a scenario in which you would recommend one of these tools to a library user?
  - Is there a scenario in which you would use one of these tools yourself?
Theme II

- Semantic searching
- Visualization
- Simplification
LigerCat

Developed by: Biology of Aging project at Marine Biological Laboratory - Woods Hole Oceanographic Institution Library

Claim to fame: Produces tag clouds based on MeSH headings

http://ligercat.ubio.org/
LigerCat search page

Runs MeSH search directly in PubMed

MeSH Cloud for vitamin D AND multiple sclerosis

-generated from 322 articles

Publication History

Search PubMed Articles
Search PubMed using words or even a DNA/protein sequence to create a tag cloud showing an overview of important concepts and trends. LigerCat aggregates multiple articles in PubMed, combining the associated MeSH descriptors into a cloud, weighted by frequency.

Visualize MeSH Descriptors
Medical Subject Headings (MeSH) is a controlled vocabulary created and maintained by the National Library of Medicine and applied to categorize and index journal articles in biomedical science.

Search from Tag Clouds
Simply click on one or more MeSH descriptors in a tag cloud to instantly search PubMed for those terms instantly. Selecting more than one term finds articles tagged with all selected MeSH descriptors.

Contact Us
Citation Information

LigerCat is brought to you by the Biology of Aging project at the MBLWHOI Library.
MeSH Cloud for Blast Results

Publication History
PubAnatomy

Developed by:
National Center for Integrative Bioinformatics, University of Michigan

Claim to fame:
Maps the journal literature to brain anatomy and gene expression correlations

http://brainarray.mbni.med.umich.edu/brainarray/prototype/pubanatomy/
Color legend: the darker the color the greater the number of articles.

Brain region name abbreviations

Brain map is now color coded according to the number of articles retrieved by the search that correspond to that brain region.

Number of articles displayed/retrieved

Citation tab: Literature search results are displayed; click on a row to display the full citation information.
Genes2WordCloud

Generate WordClouds from a list of genes, single genes, free text, URLs, or find the themes of the currently most popular articles in BMC Bioinformatics. Please be patient, sometimes it may take several minutes to generate a WordCloud.

Generate a WordCloud for a specific gene, or a list of genes:

Paste Mammalian Entrez Gene symbols in the text area below. (separated by either , : . • , or 8 or spaces)

Source for the WordCloud:

GeneRef annotations

CreateWordCloud
PubNet

Publication Network Graph Utility

publication network graph utility

PubNet: a flexible system for visualizing literature-derived networks
SM Douglas, GT Montelione, M Gerstein
(2005) Genome Biol 6:R80
Group Exercise #2

- Break into three groups (5/group)
- Experiment with PubNet, Genes2WordCloud, PubAnatomy and Ligercat
- Answer these questions:
  - What are the pros/cons of each?
  - Is there a scenario in which you would recommend one of these tools to a library user?
  - Is there a scenario in which you would use one of these tools yourself?
Theme III

- Semantic searching
- Visualization
- Simplification
BibliMed

How to enhance your search with BibliMed?

Are you looking for dental decay treatments?

* Use Medline MeSH thesaurus to optimize your search process!

1. Type: decay and choose: dental caries from the suggested MeSH terms.
2. Add a subheading if needed.
3. Add a MeSH term: fluorides related to the qualifier: therapeutic use.
4. Add to "My list".
5. Type a comment.
6. See impact factor.
7. See and share your favorites.
8. Add filters.

BibliMed: www.biblimed.com
an intuitive Medline interface

12,071 related articles in Medline
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Click on a hyperlink to add that element to your query and Re-Mine or select terms (OR boxes) and press 'Search Again'.

Save the results as a txt file.
PubGet

Developed by:
A Boston clinical pathologist who founded PubGet, Inc.

Claim to fame:
Better than your library’s link resolver at retrieving PDFs

http://pubget.com/
Emerging concepts in pediatric-onset multiple sclerosis and related disorders
Silvia N. Tenembaum

Purpose of review
Pediatric-onset multiple sclerosis (MS) is increasingly recognized. Conversely, MS diagnosis in the pediatric population continues to be challenging, particularly in the youngest group of patients. An interesting amount of data has been recently published concerning immunopathogenesis, environmental factors, diagnosis, and treatment of MS in pediatric patients.

Recent findings
Recent studies have demonstrated that brain MR criteria may distinguish MS from acute disseminated encephalomyelitis, and from non.

Multiple sclerosis in a patient with membranous glomerulopathy: is vitamin D deficiency the culprit in the presence of HLA DRB1*1501 allele?
Srinivaskrishnan

Multiple sclerosis and vitamin D: what are the guidelines for a reliable clinical trial?
Preparation
Evaluation of: How do I, Krupa LB, Mize M et al. Vitamin D status is associated with relapse rate in pediatric-onset multiple sc...

Gender Differences in 1,25 Dihydroxy-vitamin D3 Immunomodulatory Effects in Multiple Sclerosis Patients and Healthy Subjects
Jana Csendes, Daria C Terradot and Maria L Carán

Multiple sclerosis in patients with MS is negatively correlated with depression, but not with fatigue.
We observed an indicator that vitamin D status might contribute to the presence of depressive symptoms in MS. Therefore, further stu...
PM Instant

Developed by:
Jonathan Bourman with Pubmed AJAX API

Claim to fame:
Fast. Very fast. Displays search results while you are still typing.

http://pminstant.com/
PM Instant Search Results

Suggestion: diabetic complications | 146334 results

Diabetic foot ulcer burden may be modified by high-dose atorvastatin: A 6-month randomized controlled pilot trial.
Johansen OC, Birkeland RJ, Jørgensen AP, Orvik C, Sørgård B, Torjussen BR, Ueland T, Aukrust P, Gullestad L
Journal of diabetes research 2009 Sep

Progress in diabetes research in China.
Journal of diabetes 2009 Sep

Reactive oxygen-derived free radicals are key to the endothelial dysfunction of diabetes.
Shi Y, Vanhoutte PM
Journal of diabetes mellitus 2009 Sep

Periodontitis and risk for diabetes mellitus - A review.
Gurav A, Jadhav V
Journal of diabetes mellitus 2010 Oct 5

Molecular and vascular targets in the pathogenesis and management of the hypertension associated with preeclampsia.
Reslan OM, Khalil RA
Cardiovascular & hematological agents in medicinal chemistry 2010 Oct 1

[Remote thrombosis in patients with type 2 diabetes mellitus: an overview of pathophysiology]
Maficeli A, Proletti R

[Hypoglycemic therapy in heart disease patients with type 2 diabetes mellitus]
Cosmi F, Cosmi D

[Neoplastic polyendocrine syndromes and the kidney.]
Cremolini N
Giornale italiano di nefrologia : organo ufficiale della Societa italiana di nefrologia 2010 Sep-Oct

Comparative evaluation of micronutrient status in the serum of diabetes mellitus patients and healthy individuals with periodontitis.
Thomas B, Kumari S, Ramitha K, Ashwini Kumari MB
Journal of Indian Society of Periodontology 2010 Jan

Aliskiren improves insulin resistance and ameliorates diabetic vascular complications in db/db mice.
Kang YS, Lee MH, Song HK, Hyun YY, Cha JJ, Ko GJ, Kim SH, Lee JF, Han JY, Cha DR
Nephrology, dialysis, transplantation : official publication of the European Dialysis and Transplant Association - European Renal Association 2010 Oct 4

Platelet abnormalities in diabetes mellitus.
Luis Feneiro J, Gómez-Hospital JA, Angiolillo DJ
Diabetes & vascular disease research : official journal of the International Society of Diabetes and Vascular Disease 2010 Oct 4

Glucose Information for tight glycemic control: different methods with different challenges.
Weber G, Neeser K
Journal of diabetes science and technology 2010 Sep 1

A new classification of diabetic gait pattern based on cluster analysis of biomechanical data.
Group Exercise #3

- Break into three groups (5/group)
- Experiment with PMInstant, PubGet, PubReMiner and BibliMed
- Answer these questions:
  - What are the pros/cons of each?
  - Is there a scenario in which you would recommend one of these tools to a library user?
  - Is there a scenario in which you would use one of these tools yourself?
Third-party tools we have known...

- Quertle – went commercial
- Healia
- PubFocus
- Clustermed

DEFUNCT?

OR WENT COMMERCIAL?
Keeping Current with PubMed Third Party Tools
Ah, another listserv...

E-Utilities listserv

About Utilities-announce

To see the collection of prior postings to the list, visit the Utilities-announce Archives.

Using Utilities-announce

To post a message to all the list members, send email to utilities-announce@ncbi.nlm.nih.gov.

You can subscribe to the list, or change your existing subscription, in the sections below.

Subscribing to Utilities-announce

Subscribe to Utilities-announce by filling out the following form. You will be sent email requesting confirmation, to prevent availability only to the list administrator.

Your email address: [Field]
Your name (optional): [Field]

You may enter a privacy password below. This provides only mild security, but should prevent others from messing with your subscription. It will occasionally be emailed back to you in cleartext.

If you choose not to enter a password, one will be automatically generated for you, and it will be sent to you once you've confirmed your subscription.

Pick a password: [Field]
Reenter password to confirm: [Field]

Which language do you prefer to display your messages? [Options: English (USA), other]

Would you like to receive list mail batched in a daily digest? [Options: No, Yes]

Subscribe
Share feedback!
Feedback

- What ideas from third-party developers should NCBI adopt for PubMed?
- Which third-party tool(s) are you likely to use again? In what circumstances?
- If you could offer NLM one piece of advice, what would it be?
Thank you!

PLEASE DON’T FORGET TO COMPLETE YOUR EVALUATION....