Educational treasures in Radiology:

A highly customizable Radiology specific literature search engine

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ABSTRACT

This article focuses on PubRad (www.pubrad.org) - a custom defined and Radiology targeted medical literature search software which can be used in multiple ways to adjust to the individual user's needs. PubRad can be used from its website, from the user's desktop, it can be implemented into the user's own website or can be even integrated into third party programs.

TECHNICAL/IT & INNOVATIVE

EDUCATIONAL TREASURES IN RADIOLOGY

In this new series "Educational treasures in Radiology" we introduce the Radiology community to interesting and useful educational resources which can be found on the Internet. The World Wide Web (WWW) offers a plenitude of educational tools, programs and other resources. It becomes more difficult for the individual user to find the "best" resources and to separate the good from the less helpful ones. In each article of this series we present a selected online resource, which we think should be made aware to the Radiology community.

This article focuses on PubRad, an online program for customizing medical literature search.

PubMed (1), available via the NCBI Entrez retrieval system (2), is the most used literature database for researching newest knowledge in medicine. However, PubMed also displays a large amount of non-radiological search results which the radiologist needs to filter out. A tool is desired which collects only radiology related publications from PubMed and bundles them in a categorial way and targeted to the user's needs.

PubRad (3) has been developed for this specific purpose and provides an interface between the user's web-browser and PubMed. All PubMed indexed radiological journals are offered for search. The information is obtained via XML feed from the *PubMed* database and provided to the user as HTML code in form of a custom-defined website.

Users may search either all journals for articles or select specific journals for the user's personal preference. Users may save multiple search criteria in a personal profile. The program may be used in different modes for a broad overlook about all defined search criteria with access to the PubMed information as well as for on-the-fly access to the information directly from the user's computer. By using the latter mode, users receive an instant access to custom defined search criteria with literally a click of the mouse. Multiple other features, including export functions may be customized in an individualized user account.

Just recently has been PubRad integrated into the international Radiology community Radiolopolis (4,5) which demonstrates a new feature for third party program integration of PubRad. Members on Radiolopolis can search the medical literature and organize them in their preferred way. Crosslinking of literature between the co-authors provides an innovative social component into research.

In conclusion, PubRad is a freely available user-tailored online tool, that filters out relevant Radiology related articles from *PubMed* and saves the radiologist the time to manually filter out irrelevant articles. By individualization of search criteria, access and layout of the information presentation, the user is provided with a flexible and practical tool to facilitate the radiologist's daily workflow.

Do you have a potential topic for "Educational treasures in Radiology"? Then please contact journals@edurad.org.



Figure 1: This is a screenshot of *PubRad's* homepage (www.pubrad.org). PubRad allows for creating, organizing and multi-way integration of user-tailored medical literature search. A freetext search can be performed as it is done in PubMed (top left side). The user may choose the journals which should be searched for articles (all PubMed indexed Radiology journals). If the user does not select a specific journal, ALL PubMed indexed journals are searched for articles.

ser: Roland Talanow	PubRad - PubMed for Radiology
	Custom defined & radiology targeted Publied research software
Select your journals (CTRL+click)	Create :: View :: Edit :: Export :: Delete :: My Preferences :: Logout :: Help
ABDOM IMAGING	Published: . Aug 2006
INN NUCL MED	Canyigit M, Oguz KK
APPL RADIAT ISOTOPES BRIT J RADIOL CANCER BIOTHER RADIO CARDIOVASC INTER RAD	Epidermal nevus syndrome with internal carotid artery occlusion and intracranial and orbital lipomas. (AJNR Am J Neuroradiol)
PubRad Search	We report a case of epidermal nevus syndrome involving the brain in which there is chronic occlusion of the left distal internal carotid artery resulting in ipsilateral atrophy. Orbital and cerebellopontine angle cistern lipomas and a wide cortical developmental malformation are associated with the condition. We present MR imaging findings of a patient and discuss features in the context of other neurocutaneous diseases.
	-> Read fulltext
0	Read more articles from the authors: 1. <u>Canvigit M</u> 2. <u>Oquz KK</u>
۷	Related articles
	Read abstract in PubMed
	Do search in PubMed
	Copy citation:
3	Canyigit M, Ogus KX. Epidermal nevus syndrome with internal carotid artery occlusion and intracranial and orbital lipomas. AJNR Am J Neuroradiol. 2006 Aug ;27(7):1555-61.
	Export to Bibtex
4	Export to EndNote
	Export to Reference Manager

Figure 2: After selecting a title, the abstract (1) can be read with pertinent metadata. A link to the fulltext article is also provided. The user is provided with a multitude of links e.g. to read similar articles, more from the authors or to go directly to PubMed (2). Several options are provided that allow to copy the citation directly into the user's own manuscript (3) or import it into multiple popular referencing software (4).

Figure 3: PubRad allows to "create" searches (e.g. for research of a specific topic to check if any updates available etc.). The search can be later further edited or deleted.





Figure 4: The probably most powerful features are the export functions. Several options to choose regarding type of display and contents of the search results are offered. The search results may be displayed in a separate window with custom-defined size, location and layout. The provided link can be copied and also saved as a shortcut directly on the user's desktop - for direct access from the user's computer. The link to the query can be also saved in the user's web-browser favorites. Another powerful feature is the export as XML file function and integration into external websites.

www.RadiologyCases.com



Figure 5: Example of an exported link that has been saved as a shortcut directly on the user's desktop - for direct access from the user's computer (A). B demonstrates the XML export function that allows the integration into external, third party programs.



Figure 6: Example of the export function for usage in external websites. (Courtesy www.pedrad.info). The search results are displayed on-the-fly on the external website (within red rectangle) – just by simply implementing the exported PubRad RSS feed.



Figure 8: The latest feature has been the integration into Radiolopolis - an international Radiology community for education, research and clinical practice. PubRad has been fully integrated into this community and allows usage of its features directly from the Radiolopolis website - without the need for a separate login (1). In addition several other features have been implemented (2) such a "social" research features, customized literature portfolio and cross-linking of literature between the co-authors to stay up-to-date what the other colleagues are doing.

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My Literature Portfolio		example of third party integration. This		
1. Utility of diffusion-weighted MRI in characterization of adm AJR Am J Roentgenol - Feb , 2010	feature saves and organizes preferred literature in a personal portfolio (link within red rectangle).			
 Intracranial Stent Placement for Recanalization of Acute (Occlusion in 32 Patients, AJNR Am J Neuroradiol - Apr 1, 2010 				
3. Aortic arch malformations. Pediatr Radiol - Mar 31, 2010				
Acute limbic encephalitis and glutamic acid decarboxylase antibodies: a reality?				
 5. F-18 FDG brain PET and Tc-99m ECD brain SPECT in a recurrent epileptic seizures. 6. F-18 FDG brain SPECT in a recurrent epileptic seizures. 	a patient with multiple			
 6. <u>In vivo imaging of dopamine receptors in a model of temp</u> Epilepsia - Mar, 2010 	ooral lobe epilepsy.			
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	My Literature Portfolio II My Publications II My Publication Network Roland Talanow[author]			
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	 Imaging protocols for 18F-FDG PET/CT in overweight patients: limitations. Roland Talanow, Sankaran Shrikanthan J Nucl Med; published: Apr., 2010 			
	Abstract :: Metadata :	: <u>Get the full text</u>		
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Acad Radiol; published: May , 2009

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My Literature Portfolio || My Publications | My Publication Network

My Publication Network

#	Sort by: Name or	Shared publications
1.	Talanow, Roland	7
2.	<u>Wu, Guiyun</u>	2
3.	Wilkinson, lain D	1
4.	<u>Wignall, Emma</u>	1
5.	Weber, Marc-Andrè	1
6.	Wagner, Matthias	1
7.	<u>Uhl, Markus</u>	1
8.	Spörl, Markus	1
9.	Shrikanthan, Sankaran	1
10.	Ruggieri, Paul	1
11.	Rengier, Fabian	1
12.	Paetzel, Martina	1
13.	Neumann, Donald	1
14.	Lachhwani, Deepak	1
15.	Kauczor, H U	1
16.	Hirsch, Wolfgang	1
17.	Hart, Anthony R	1
18.	Hahn, Horst K	1
19.	Grunewald, Markus	1

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KEYWORDS

PubMed, Medline, medical literature, research, literature search, customized, user-tailored

Figure 11: Integration of PubRad into the Radiology community Radiolopolis as an example of third party integration. This feature shows different ways of connectivity between co-authors – as in this case: shared publications (link within red rectangle).

Online access

This publication is online available at: www.radiologycases.com/index.php/radiologycases/article/view/477



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