Authority framework in 1.6
and
CILEA’s customization
for
The University of Hong Kong

Andrea Bollini *CILEA*
Allen Lam *HKU*
Susanna Mornati *CILEA*
David Palmer *HKU*
Flight Plan

David

- New design & customizations for HKU’s IR
- The reason & funding wherefore
- Serendipitous discoveries

Andrea

- Authority Framework in 1.6
- Linkage between DSpace items, and author profiles
- Technical background of the RPs Project
The HKU Scholars Hub is the institutional repository of The University of Hong Kong. It seeks to collect the intellectual output of HKU and make it available to the widest possible audience. Records are made in the Hub for items that are fulltext open access, or for URLs that hyperlink to the same.

We seek Knowledge Exchange with the World.

Quick search of The Hub

Search the author, title, abstract and series fields.

Search

For phrase search, please use quotation marks, for example, "Wann, John", or "Behavior Therapy".

Prof. I. Samaranayake
An interview with the HKU Dean of Dentistry on the role
Prof Tam, Paul Kwong Hang

Pro-Vice-Chancellor and Vice-President (Research)
Chair of Paediatric Surgery

Also Cited As:
- Tam, Paul
- Tam, Paul KH

Research Interests:
- Genomics
- Developmental biology
- Immunology
- Paediatric surgery

 HKU Data

Tel: 2865 4850
Office: G3 1540
Dept: Vice-Chancellor's Office
Email: paulTam@hkuc.c.hkcu.hk
Personal Page | Biography

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Prof Tam, Paul Kwong Hang

Pro-Vice- Chancellor and Vice-President (Research)
Chair of Paediatric Surgery

Tel: 2855 4850
Office: GS 1540
Dept: Vice- Chancellor's Office
Email: paultam@hsoc.hku.hk

Research Interests:
- Genomics
- Developmental biology
- Immunology
- Paediatric surgery

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Prof Tam, Paul Kwong Hang

Pro-Vice-Chancellor and Vice-President (Research)
Chair of Paediatric Surgery

Tel: 2855 4850
Office: OK 1540
Dept: Vice-Chancellor's Office
Email: paultam@hkucc.hku.hk

Personal Page | Biography

ResearcherID
Paul Tam
RID: C-4405-2009
The University of Hong Kong

Most cited publications:
1. A haplotype map of the human genome
   Times Cited: 2056 (Web of Science®)
2. The International HapMap Project
   Times Cited: 1911 (Web of Science®)
3. A second generation human haplotype map of over
   3.1 million SNPs
   Times Cited: 877 (Web of Science®)

Go to ResearcherID.com to view more information

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Media Comment
Spoken Languages: English | Cantonese | Putonghua (英语 | 粵語 | 普通话)
Written Languages: English | Chinese (英文 | 中文)

Area of expertise:
• Paediatric surgery (Hirschsprung's disease and related disorders; genetics of neuroblastoma, experimental immunology, genomics of childhood tumours, minimal invasive surgery, biliary atresia and choledochal cyst)

Bibliometric Data

<table>
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<tr>
<th>Scopus</th>
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<td>AuthorID</td>
<td>7209538421</td>
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<tr>
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<tr>
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<td>3477</td>
</tr>
<tr>
<td>h Index:</td>
<td>25</td>
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<tr>
<td>Co-authors:</td>
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Hub Items for: Tam, PKH

 Authorized items in the HUB - 1 to 20 of 43

<table>
<thead>
<tr>
<th>Title</th>
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<th>Year</th>
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<td>Abdominal compartment syndrome after open biopsy in a child with bilateral Wilms tumour</td>
<td>Chung, PHY; Wong, KKY; Lam, LCU; Tam, PKH (HK)</td>
<td>2009</td>
</tr>
<tr>
<td>Abnormal enteric nervous system development</td>
<td>Zhang, M; Leung, C; Lui, VCH (HK)</td>
<td>2009</td>
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</table>
Results  Author=(tam pkh) OR Author=(tam paul) OR Author=(tam kwong hang paul)
Timespan=All Years. Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

Results: 275

1. Title: Clinical Experience in Managing Pediatric Patients with Ultra-short Bowel Syndrome using Omega-3 Fatty Acid
   Author(s): Chung PHY, Wong KKY, Wong RMS, et al.
   Source: EUROPEAN JOURNAL OF PEDIATRIC SURGERY  Volume: 20  Issue: 2  Pages: 139-141  Published: MAR 2010
   Times Cited: 0
   More options

2. Title: Lack of association between nNOS-34G > A polymorphism and risk of infantile hypertrophic pyloric stenosis in a Chinese
   Author(s): Miao XP, Garcia-Barcelo MM, So MT, et al.
   Source: JOURNAL OF PEDIATRIC SURGERY  Volume: 45  Issue: 4  Pages: 709-713  Published: APR 2010
   Times Cited: 0
   More options

3. Title: Reduced RET expression in gut tissue of individuals carrying risk alleles of Hirschsprung's disease
   Author(s): Miao XP, Leon TYY, Ngan ESW, et al.
   Source: HUMAN MOLECULAR GENETICS  Volume: 19  Issue: 8  Pages: 1461-1467  Published: APR 15 2010
   Times Cited: 0
   More options

4. Title: Silver Nanoparticles Mediate Differential Responses in Keratinocytes and Fibroblasts during Skin Wound Healing
   Author(s): Liu XL, Lee PY, Ho CM, et al.
   Source: CHEMMEDCHEM  Volume: 5  Issue: 3  Pages: 468-475  Published: MAR 2010
   Times Cited: 0
   More options

5. Title: Management of choledochal cyst: 30 years of experience and results in a single center
   Author(s): She WH, Chung HY, Lan LCL, et al.
   Conference Information: 42nd Annual Meeting of the Pacific-Association-of-Pediatric-Surgeons, MAY 10-14, 2009 Hong Kong, FEOR
Web Services to Integrate with Workflow

Institution automatically creates RID profiles

- Unique identifier for each researcher
- Researchers maintain control of information and privacy
- Current updated Web of Science citation counts into institutional repositories and systems

Updated citation counts, profile and publication data flow into institutions

Slide, courtesy of Thomson Reuters.

HKU
港大
Tam, Paul

ResearcherID: C-4405-2009
Other Names: Tam PKH; Tam P; Tam KH; 潘廣亨
URL: http://www.researcherid.com/rid/C-4405-2009
Subject: Critical Care Medicine; Emergency Medicine; General & Internal Medicine; Genetics & Heredity; Immunology; Integrative & Complementary Medicine; Neurosciences & Neurology; Pathology; Pediatrics; Surgery; Transplantation
Description: Chair of Paediatric Surgery and Division Chief. Professor Tam has received numerous awards including the BAPS prize, Royal College of Surgeons' gold medal etc. He has published extensively including 19 chapters in 11 books and over 211 original articles in international journals. He was the Founding Director of the Centre of Human Development and Birth Defects.


Publications
My Publications (673)
View Publications Citation Metrics

Publication List: Citation Metrics
This graph shows the number of times the articles on the publication list have been cited in each of the last 20 years. Note: Only articles from ISI Web of Knowledge with citation data are included in the calculations. More information about these data.

Citation Distribution by year

- Total Articles in Publication List: 673
- Articles With Citation Data: 278
- Sum of the Times Cited: 7372
- Average Citations per Article: 26.52
- h-index: 27
- Last Updated: 05/15/2010 14:04 GMT
Authority Control

Hierarchy of Authority & Synonymy
- Authorized headings
- Variant headings

Multi-script Synonymy
- Roman, Traditional Chinese, Simplified Chinese, Japanese, Korean, etc. (UTF-8)
Prof. Bacon-Shone
Associate Dean of Social Sciences
Research Interest: “Gambling”

Relevant searches usually appear at top, or near the top of the list.
Why did we do it?

Knowledge Transfer:
- “the systems and processes by which knowledge, including technology, know-how, expertise and skills are transferred between higher education institutions and society, leading to innovative, profitable or economic or social improvements”

US$6.5M/yr, divided by 8 Universities in Hong Kong

At HKU
- Re-articulated Vision:
  - Teaching & Learning
  - Research
  - Knowledge Exchange (KE)
- KE includes,
  - Database of Visible Expertise to Enable & Measure KE
    - Metrics from citation databases
    - Research Output & Grants, etc.
    - Expanded OA Strategy
Serendipity
1) Online Reputation Management

- Internet Footprint
- Findability
- Identity exposure, disclosure
- Cybervetting
  - One bad apple...
2) Meanwhile,

Reputation & identity of the institution:
- University rankings
- RAE
- Peer Review
- Parent’s choice of school for child
- Recruiter’s choice
- Media spokespersonship
- Collaborative partnerships
- Contract research undertaken
- Funding received
- Etc.
The Reputation of the University?
### Increases

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<th>30 June 2010</th>
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<td>47,013</td>
<td>46,720</td>
<td>-0.62%</td>
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<tr>
<td>Scopus – Citation Count</td>
<td>484,679</td>
<td>493,641</td>
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<td>50,767</td>
<td>51,155</td>
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<td>8,165</td>
<td>8,281</td>
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<td>RID – Citation Count</td>
<td>346,374</td>
<td>392,540</td>
<td>13.33%</td>
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<td>RID – h index</td>
<td>4,892</td>
<td>5,210</td>
<td>6.5%</td>
</tr>
</tbody>
</table>
3) HK’s Research Assessment Exercise

UK:
  • Research Excellence Framework (REF)

Australia
  • Excellence in Research for Australia (ERA)
4) For HKU, a trusted authority

- **ORCID - Open Researcher & Contributor ID**
  - Based upon ResearcherID
  - All authors & publishers to use
  - Citation databases; Scopus, WoS
  - June 2010

- **BKNpeople – Bibliographic Knowledge Network People**
5) Re-positioning the academic library

OCLC Report
- Leverage value of IR in RAEs
- Provide a researcher-centred view
- Moving beyond putting books on shelves
- Aligned with institution’s vision & mission

6) Re-thinking the IR

Moral and philosophical approaches have failed
And here, pilots switch in mid-stream

Authority Framework in DSpace 1.6
Technical details

- The Authority framework is one of the new major features of DSpace 1.6

- Main contribution & projectual idea by Larry Stone

- CILEA / HKU Project was an early adopter. For this we provided JSPUI & PostgreSQL porting, browse & search enchangememt with support for variants names and forms
Authority Framework: responsibilities

- Bind metadata fields to an Authority
- Retrieve **matching values** from user queries / input
- Supply the standard form and variants for an **authority key**
Authority Framework: main classes

```
org.dspace.content.authority

MetadataAuthorityManager
ChoiceAuthorityManager

Extensibility provided by:

ChoiceAuthority
AuthorityVariantsSupport
```

How TO Query? WS, SQL, ...

Retrieve variants
Authority Framework: extension points

```
org.dspace.content.authority

ChoiceAuthority 5124

- getMatches(String, int, int, int, String) : Choices
- getBestMatch(String, int, String) : Choices
- getLabel(String, String) : String

AuthorityVariantsSupport 4365

- getVariants(String, String) : List<String>
```
Authority Framework: which authorities?

- Library of Congress Personal names authority: LCNameAuthority
- Sherpa RoMEO Project, publisher names authority: SRPublisherAuthority
- Sherpa RoMEO Project, Journal titles authority: SRJournalTitle
- DSpace Input Form XML based controlled list: DCInputAuthority
Authority Framework: which authorities?

```java
plugin.named.org.dspace.content.authority.ChoiceAuthority = \n  org.dspace.content.authority.SampleAuthority = Sample, \n  org.dspace.content.authority.LCNameAuthority = LCNameAuthority, \n  org.dspace.content.authority.SHERPARoMEOPublisher = SRPublisher, \n  org.dspace.content.authority.SHERPARoMEOJournalTitle = SRJournalTitle

### This ChoiceAuthority plugin is automatically configured with every
### value-pairs element in input-forms.xml, namely:
###   common_identifiers, common_types, common_iso_languages
plugin.selfnamed.org.dspace.content.authority.ChoiceAuthority = \n  org.dspace.content.authority.DCInputAuthority
```
Changes to the Data Model

Two new fields for the MetadataValue class: authority & confidence

```
CREATE TABLE MetadataValue

<table>
<thead>
<tr>
<th>metadata_value_id</th>
<th>INTEGER PRIMARY KEY DEFAULT NEXTVAL('metadatavalue_seq'),</th>
</tr>
</thead>
<tbody>
<tr>
<td>item_id</td>
<td>INTEGER REFERENCES Item(item_id),</td>
</tr>
<tr>
<td>metadata_field_id</td>
<td>INTEGER REFERENCES MetadataFieldRegistry(metadata_field_id),</td>
</tr>
<tr>
<td>text_value</td>
<td>TEXT,</td>
</tr>
<tr>
<td>text_lang</td>
<td>VARCHAR(24),</td>
</tr>
<tr>
<td>place</td>
<td>INTEGER,</td>
</tr>
<tr>
<td>authority</td>
<td>VARCHAR(100),</td>
</tr>
<tr>
<td>confidence</td>
<td>INTEGER DEFAULT -1</td>
</tr>
</tbody>
</table>
```

Added fields in DSpace 1.6
Authority Framework: settings

Interactive settings

choices.plugin.dc.contributor.author = LCNameAuthority
choices.presentation.dc.contributor.author = lookup | suggest | select
choices.closed.dc.contributor.author = false

General settings – model constraints

authority.controlled.dc.contributor.author = true
authority.required.dc.contributor.author = false
authority.minconfidence.dc.contributor.author = accepted *
authority.minconfidence = ambiguous *

* More on this later
Authority Framework: UI lookup

Pop-up windows

![Authority Framework: UI lookup](image)
Authority Framework: UI lookup

An icon show metadata value bind to an authority key
Authority Framework: UI suggest

Autocomplete AJAX
Authority Framework: UI conclusion

- For a short authority list a simple `html select` widget can be used.
- The input facility is available also in the `edit item page`.
- All the widgets are available in both UIs: JSPUI and XMLUI.
## Authority Framework: UI conclusion

<table>
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<th>Remove</th>
<th>Name</th>
<th>Value</th>
<th>Language</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>dc.</td>
<td>Twain, Mark, 1835–1910</td>
<td></td>
</tr>
<tr>
<td></td>
<td>contributor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>pub</td>
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<td>en_US</td>
</tr>
<tr>
<td></td>
<td>publisher</td>
<td></td>
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</tr>
</tbody>
</table>

This website is using Manakin, a new front end for DSpace created by Texas A&M University Libraries. The interface can be extensively customized through Manakin aspects and XSL-based themes. For more information visit: [http://tamu.edu](http://tamu.edu) and [Contact UTM Librarians](http://tamu.edu).
Authority Framework: XML response

The html widget are build on standard AJAX XML response

Developers can easily extend or build new widget reusing existing infrastructure

```xml
<select xmlns="http://www.w3.org/1999/xhtml" start="0" total="6">
  <option authority="n 89103996" value="Clemens, Olivia Langdon, 1845-1904">
    Clemens, Olivia Langdon, 1845-1904
  </option>
  <option authority="n 93099439" value="Clemens, Samuel Langhorne, 1835-1910">
    Clemens, Samuel Langhorne, 1835-1910
  </option>
  <option authority="no2003079632" value="Conte, Louis de, 1835-1910">
    Conte, Louis de, 1835-1910
  </option>
  <option authority="n 93099461" value="Snodgrass, Quintus Curtius, 1835-1910">
    Snodgrass, Quintus Curtius, 1835-1910
  </option>
  <option authority="n 82045653" value="Twain, Mark, 1835-1910">
    Twain, Mark, 1835-1910
  </option>
  <option authority="n 79021164" value="Twain, Mark, 1835-1910">
    Twain, Mark, 1835-1910
  </option>
</select>
```
Keep the metadata clean

- New administrative tool to:
  - Check authority usage
  - Review, reject, or confirm automatic linkage

- Plan to release this functionality to the community after the HKU Scholars Hub migration to DSpace 1.6
Tentative matches for RP rp00857

RP Details

Label: He, Hongming
Authority key: rp00857
Variants: He, Hongming, He, H, 何洪铭,
Department: Dept of Geography;

Researcher interests:
1. Climate change impacts on human demensions
2. Water resources sciences, specialized in hydrological modelling
3. Urbanization process
4. Environmental modelling

Items awaiting Accept/Reject

Confidence level: UNCERTAIN

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Year</th>
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<tbody>
<tr>
<td>Early Upregulation of Cyclooxygenase-2 in Human Papillomavirus Type 16 and Telomerase-Induced Immortalization of Human Esophageal Epithelial Cells</td>
<td>Zhuang, Z; Tsao, GSW; Deng, W; Wang, J; Xia, HHX; He, H; Heng, H; Wang, L; Gu, Q; Lan, SK; Lin, MC; Kung, HF; Wong, BCY</td>
<td>2008</td>
</tr>
<tr>
<td>Generation of repetitive sequence-depleted microdissected chromosome arm painting probe</td>
<td>He, H, Huang, W; Guan, XY</td>
<td>1999</td>
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<tr>
<td>Generation of repetitive sequence-depleted microdissected chromosome arm painting probes</td>
<td>He, H, Huang, W; Guan, XY</td>
<td>1999</td>
</tr>
</tbody>
</table>
ResearcherPage technology

- Spring IoC & AoP (TxManager)
- Hibernate & Hibernate Search
- Spring MVC

... some tricks/tips to use Spring DI in the Authority Plugin in the next slides
Integration authority framework to HUB

it.cilea.hku.authority.dspace.HKUAuthority implements ChoiceAuthority,
AuthorityVariantsSupport, NotificableAuthority

Keep static references to the RP "services" (persistence + search), injected by Spring
Integration

- Dependencies Injection with Spring on classes managed by the DSpace plugin system needs a workaround:
  - Use static fields and semaphore/init method to assure proper initialization both in web and batch contexts (Our approach for the RP Project)
  - Expose and retrieve the Spring context as JMXBean: use the Spring API to retrieve dependencies (DSpace services approach)
Integration of RP presentation

- Servlet filter on the browse url to make HTTP redirect to the RP
  - No changes in dspace jsp tags
  - No changes in browse pages
  - Simple turnoff of ResearcherPage without loss of the metadata quality
  - Low overhead for no rp browsing

- Integration with the HKU SSO, the netID as bridge between DSpace Eperson & RPs
HKU Colleagues
港大同僚

Terima Kasih
спасибо
شكرا لك
謝謝您
감사합니다
धन्यवाद
 cảm ơn bạn
Σε ευχαριστώ
กรุณา
有り難うございます
Thank You
Grazie
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