Academic Libraries’ Role in Improving Institutions Research Impact

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Agenda

- World Class Universities
  - Rankings and Research Impact
  - Where does KAUST stands now

- Role of Libraries
  - Institutional repository role in scholarly communication
  - Institutional repository within the CRIS context
  - Tracking research output: Article, conference paper, patent...
  - Measuring impact
  - Trainings and awareness

- Future
Our intention is to create an enduring model for advanced education and scientific research.
World Class University

Teaching
Knowledge Transfer
Global outlook
Research
How the Rankings are Done?

Where can Libraries help to increase the Scores?

Research publications impact on 38.5% of the total scores

Industry income - innovation
Research income from industry (per academic staff) 2.5%

Libraries can help in **Improving the impact**
By increasing the visibility of the research

Teaching - the learning environment
- Reputational survey - teaching 15%
- PhD awards per academic 6%
- Undergraduates admitted per academic 4.5%
- Income per academic 2.25%
- PhD awards/ bachelor's awards 2.25%

Citations - research influence
Citation impact (normalised average citations per paper) 30%

For the latest World University Rankings news, debate and social networking, see www.timeshighereducation.co.uk/world-university-rankings/
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Code</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Education</td>
<td>Alumni</td>
<td>10%</td>
</tr>
<tr>
<td>Quality of Faculty</td>
<td>Award</td>
<td>20%</td>
</tr>
<tr>
<td>Research Output</td>
<td>HiCi</td>
<td>20%</td>
</tr>
<tr>
<td>Per Capita Performance</td>
<td>PCP</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

* For institutions specialized in humanities and social sciences such as London School of Economics, N&S is not considered, and the weight of N&S is relocated to other indicators.
KAUST started in September 2009.

Ranked World First in research impact (Citation per faculty) (QS University ranking) in 2015/16
Based on publications in Thomson Reuters' Web of Science database in the period 2010–2013. Only so-called core publications are included.

**KAUST ranks 42\textsuperscript{nd} in the world, 2\textsuperscript{nd} in Asia**
Field-Weighted Citation Impact
(Scopus data from 2011 to 2014, excluding self-citations)

Energy

- CALTECH
- KAUST
- MIT
- HKUST
- ETH ZURICH
- GEORGIA TECH
- CAMBRIDGE

Material sciences

- CALTECH
- MIT
- KAUST
- GEORGI...
- ETH...
- CAMBRI...
- HKUST
Benchmarking against other Universities outside the Kingdom

Based on Scopus data between 2011 and 2013 (excluding self-citations)
Role of Library
Connecting the Pieces

- Institutional repository role in scholarly communication
- Institutional repository within the CRIS context
- Tracking research output: Article, conference paper, patent...
- Measuring impact
- Trainings and awareness
KAUST Research Repository development

- Established in 2011
- Working in Prototype mode
- Official launch in September, 2012
- KAUST Theses/Dissertation open access policy December, 2012
- KAUST Open Access Policy June, 2014
- KAUST ORCID integration October, 2014
- KAUST Metrics improvement October, 2015
How is research evaluated externally?

HOW IS RESEARCH EVALUATED?

- Research
  - Volume, income, reputation
- Prestigious awards
  - Nobel Prizes
- Innovation
  - Industry income and patents
- Teaching
  - Academic Reputation Survey, higher degrees
- International Mix
  - National / International staff and students
- Citation analysis
  - Normalised for volume and subject area
- Peer Evaluation
  - Reputational survey

http://wok.mimas.ac.uk/support/documentation/presentations/1ResearchEvaluationBiblio1010.ppt
Surviving in the Social Network of Science

Typical needs:
- Develop research strategy
- Obtain funding
- Acquire talent
- Prioritize activities
- Working efficiently
- Measure/Demonstrate societal impact
- Develop career
- Publish
- Find reviewers
- Build reputation
- Ranking...

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Database coverage

Figure 1. JISC-ADAT coverage comparison of Web of Science and Scopus
KAUST Research Evolution

vision
What does the repository do?

- Organize and present a comprehensive and up-to-date record of the university’s published research.
- Increase access to and discovery of full text research outputs (thus increasing their use).
- Support tools to track and explore the ways in which research is being used and referenced.
How do we find out what is being published?

**Sources:**

- **Databases/Indexes:** Crossref, Google Scholar, Scopus, Web of Science, PubMed Central, SHARE, JISC Router.

- **Publisher APIs:** Sciencedirect (Elsevier), IEEE, Springer/Biomed Central, Nature, PLOS.
How do we find out what is being published?

- Search based on:
  - Affiliation
  - Author name or ID
  - Funding acknowledgement
How do we process what is retrieved?

Steps:

- Duplication
- Author identification and control
- Departmental control
- Full-text deposit
How do we obtain the full-text of publications?

- Direct from publishers:
  - Open Access journals (CC license)
  - Journals with policies that allow redistribution of final publisher versions (as listed in Sherpa/Romeo)
  - Articles in hybrid journals for which authors have purchased a CC license.
  - Articles for which the journal has temporarily made available the accepted manuscript (with embargo based on journal policy).
How do we obtain the full-text of publications?

➢ From authors:
  ▪ Direct deposit
    ○ Especially of preprints and technical reports
  ▪ In response to manuscript request email
    ○ To all university co-authors
    ○ Required creation of email generation tool
    ○ Individual follow-up communication needed
Version and License of Items Published after Start of Open Access Policy with Full-text in the Repository

- Publisher version with CC license (32%)
- Publisher version deposit allowed by journal policy (2%)
- Accepted manuscript deposited (46%)
- Other versions or licenses (20%)
Today KAUST Repository Content

Peer reviewed articles: 5385
- 2210
- 3275

Conference Papers: 1144

Theses/Dissertation: 494

Book chapter: 27

Technical Report: 20

专利: 6

Posters: 4
KAUST Funded Articles (Future content)

- **Fully funded (only KAUST funding is acknowledged)**
- **Non-funding Acknowledgement**
- **Partially funded (multiple funders acknowledged)**
- **2 per. Mov. Avg. (Fully funded (only KAUST funding is acknowledged))**
- **2 per. Mov. Avg. (Partially funded (multiple funders acknowledged))**
KAUST Patent Information
Future content
How do we spread information about what is in the repository?

- Author ORCID records (via member integration)
- University websites (via RSS feeds)
- Crawled by search engines (primarily Google Scholar)
- Harvest by OAI-based search engines:
  - Library catalog
  - BASE (Bielefeld Academic Search Engine)
  - Woldcat’s OAIster
  - NDLTD’s Global ETD Search
  - OATD
  - WorldWideScience.org
How do users arrive at the repository?

- **Google Scholar**: 35%
- **Library website and catalog**: 15%
- **Other university websites**: 15%
- **WorldWideScience.org**: 15%
- **All other sources**: 5%

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Repository add on features

**ORCID**
Connecting Research and Researchers

**Member Organization**

**Statistics**

**Item Statistics**

Scopus

- Picked up by 7 news outlets
- Tweeted by 24
- On 3 Facebook pages
- 39 readers on Mendeley
- 2 readers on CiteULike

See more details | Close this

**Usage**

- Clicks: 1
- Abstract Views: 128
- HTML Views: 3707
- PDF Views: 1136

**Captures**

- Exports-Saves: 13
- Readers: 11

**Social Media**

- Tweets: 24

**Citations**

- CrossRef: 3
- PubMed: 1
- Scopus: 1

see details

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University systems can use ORCIDs for automated exchange of information with external systems, saving researchers time and keeping systems up-to-date.
How do we integrate with ORCID?

- Research Repository
  - Sample item display:

  ```
  AUTHORS:
  Melino, Gianluca (0000-0001-8060-651X) id
  ADVISORS:
  Di Fabrizio, Enzo (0000-0001-5886-4678) id
  COMMITTEE MEMBER:
  Alshareef, Husam N. (0000-0001-5029-2142) id; Falqui, Andrea (0000-0002-1476-7742) id
  ```

  - Add ORCID(s) for authors as well as other roles.
  - Retrieve ORCID(s) from Crossref by DOI when available.
  - Search by ORCID ID.
  - Link to ORCID records.
How do we integrate with ORCID?

KAUST/ORCID Integration:

ORCID at KAUST

KAUST uses ORCID identifiers to identify researchers and their research. Select from the options below before connecting to the ORCID system.

- Create a new ORCID ID or identify an existing one (required).
- Read information from my ORCID record.
- Add KAUST affiliation to my ORCID record.
- Add publications from the KAUST Repository to my ORCID record.

You can change these permissions at any time in the Accounts Settings section of your ORCID record.

Connect with ORCID

- Send custom ORCID creation email.
- Researchers grant permissions to KAUST.
- Daily update of ORCID record with new works in the repository.
Is our Integration with ORCID Successful?

- All theses and dissertations for the last year have an ORCID ID for the student author.

- 75% of articles and conference papers in the repository have an ORCID ID for at least one author.

- 78% of current faculty have an ORCID ID.

- 82% of KAUST researchers and students with an ORCID ID have granted permissions through the KAUST/ORCID integration.
How are we supporting the adoption of a current research information system?

- Transfer of repository metadata to Pure:
  - Custom tool to create CERIF XML for import.

- Enable deposit into the repository via Pure:
  - Work in progress.

- Stability and flexibility of repository complement the robust reporting and analytics possible through Pure.
Track and explore a more comprehensive landscape of research and how it is shared and used.

1. More types of research outputs:
   - Presentations, videos, posters, code, datasets, patents, technical reports, theses, dissertations...
   - In addition to articles, conference papers, book chapters, books...

2. More types of metrics:
   - **Usage** (downloads, views, etc.)
   - **Captures** (bookmarks, bibliographic reference exports, forks, etc.)
   - **Citations** (from multiple sources)
   - **Mentions** (comments, reviews, blog mentions, news mentions, etc.)
   - **Social media** (likes, shares, tweets, etc.)
How does the connection between PlumX and the repository work?

- Repository retrieves PlumX widget based on DOI or Handle for display for individual items.

- PlumX retrieves works from the repository via OAI harvest and matches them to faculty and research scientist profiles based on ORCID ID.

- PlumX retrieves download and abstract view stats from the repository and combines them with stats from other sources for each item.
What does it look like in the repository?

KAUST Repository

Recent reversal in loss of global terrestrial biomass

This item has been cited 4 time(s), (data provided by Scopus)

HANDLE URI:
http://hdl.handle.net/10754/564113

TITLE:
Recent reversal in loss of global terrestrial biomass

AUTHORS:
Liu, Yi Y.; Van Dijk, Albert I J M; De Jeu, Richard A M; Canadell., Josep G.; McCabe, Matthew (0000-0002-1279-5272) ; Evans, Jason P.; Wang, Guojie

ABSTRACT:
Vegetation change plays a critical role in the Earth's carbon (C) budget and its associated radiative forcing in response to anthropogenic and natural climate change. Existing global estimates of aboveground biomass carbon (ABC) based on field survey data provide brief snapshots that are mainly limited to forest ecosystems.
How to explore further for an item?

**CAPTURES** (58)
- Exports-Saves: 39
- EBSCO: 39
- Readers: 19
- Mendeley: 19

**CITATIONS** (62)
- Cited by: 62
- Scopus: 62
- PMCEurope: 42
- CrossRef: 36
- PubMed Central: 36

**USAGE**
- HTML Views: 2529
- PLoS: 2308
- PubMedCentral: 184
- EBSCO: 37
- PDF Views: 402
- PLoS: 237
- EBSCO: 121
- PubMedCentral: 44
- Abstract Views: 392
- EBSCO: 391
- DSpace: 1

**MENTIONS** (104)
- Comments: 101
- Facebook: 101
- Blog Mentions: 1
- Blog: 1
- Links: 1
- Wikipedia: 1
- News Mentions: 1
- News: 1

**SOCIAL MEDIA** (51)
- Tweets: 21
- www.nature.com: 21
- Likes: 17
- Facebook: 17
- Shares: 9
- Facebook: 9
- +1s: 4
- Google+: 4
What can we see in the dashboard?

1. Groups for divisions, programs, core labs and research centers.
   - Sort and filter by metrics types, artifact types and year.
   - Use the analytics functions to visualize the metrics for subgroups and researchers within a group.

1. Individual profiles for faculty and researchers with ORCID IDs.
More analysing!!!
Sample analytics views: subgroups and researchers

Subgroups Overview - Biological and Environmental Sciences and Engineering (BESE) Division

Social Media

Researchers Overview - Physical Sciences and Engineering (PSE) Division

Social Media
Sample analytics view: Individual

Comparative genomics of the apicomplexan parasites Toxoplasma gondii and Neospora caninum: Coccidia differing in host range and transmission strategy.


Usage:
- DSpace - Downloads: 6
- EBSCO - Abstract Views: 273
- EBSCO - PDF Views: 60
- EBSCO - HTML Views: 18
- EBSCO - Link-outs: 2
- EBSCO - Data Views: 1
- PLoS - HTML Views: 13017
- PLoS - PDF Views: 1702
- PubMedCentral - HTML Views: 1753
- PubMedCentral - PDF Views: 720

Captures:
- EBSCO - Exports-Saves: 16
- Mendeley - Readers: 95

Mentions:
- Facebook - Comments: 25
- Wikipedia - Links: 2

Social Media:
- Facebook - Likes: 66
- Facebook - Shares: 15
- Twitter - www.plospathogens.org: 5

Citations:
- CrossRef - Cited by: 36
- PubMed Central - Cited by: 36
- PubMedCentralEurope - Cited by: 42
- Scopus - Cited by: 62
KAUST Articles in Social Media by division

Subgroups Overview - Academic Divisions

Social Media

<table>
<thead>
<tr>
<th>Division</th>
<th>Tweets</th>
<th>Shares</th>
<th>Likes</th>
<th>Artifacts</th>
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<tbody>
<tr>
<td>Biological and Environmental Sciences and Engineering (BESE) Division</td>
<td>2624</td>
<td>1353</td>
<td>3430</td>
<td>1252</td>
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<tr>
<td>Physical Sciences and Engineering (PSE) Division</td>
<td>971</td>
<td>299</td>
<td>1764</td>
<td>2203</td>
</tr>
<tr>
<td>Computer, Electrical and Mathematical Sciences and Engineering (CEMSE) Division</td>
<td>533</td>
<td>251</td>
<td>688</td>
<td>1342</td>
</tr>
</tbody>
</table>

Download as...
Theses/ Dissertation usage by division

Usage

- Computer, Electrical and Mathematical Sciences and Engineering (CEMSE) Division
  - Abstract Views: 16820
  - Downloads: 18848
  - Artifacts: 198

- Physical Sciences and Engineering (PSE) Division
  - Abstract Views: 15439
  - Downloads: 16540
  - Artifacts: 161

- Biological and Environmental Sciences and Engineering (BESE) Division
  - Abstract Views: 10778
  - Downloads: 20524
  - Artifacts: 134

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Repository unique material citation
Based in google scholar

Number of Citation

Item Type

Conference Papers
Dissertations
Patent
Presentation
Technical Report
Thesis
Library Trainings, Campus Out Reach

- Citation databases in the literature search
- Citation metrics (h-Index, Impact Factor)
- Publications and institutional rankings
- Researcher profiling (ORCID, PLUMX.)
- Open access and Institutional Repository
- Academic honesty, Plagiarism
Benefits (as per the Feedbacks)

Researchers

- Improves their understanding of how to communicate their research
- Helps to have organized scholarly profile and presence
- Guides to navigate in the complex aspects of the changing scholarly communications landscape
- Helps in connecting the pieces of the research life cycle

Institution

- Enhancing the profile of individual researchers will improve their research impact and the reputation of our institution,
- Helps in research funding, faculty evaluations and recruitment.
Future

• Digital preservation and long term-retention of special items.
• Special Digital Collections (biological image collections, GIS images, etc.)
• More training programs within the university.
• More outreach programs in the region.
• Promote good practices in Research Data Management (RDM).
• Services and initiatives around RDM.
• Increased importance of Reputation Management
• Evolving scholarly record – transition from an article to a package (of article and associated video, data, software methods, other media etc)