Digital Science Strategy Presentation
LIBER 2017
Mission of Digital Science

Digital Science develops and supports technologies and businesses that accelerate scientific research.

These are usually started by researchers seeking ways to make the research process simpler and more efficient.

We believe passionately that tomorrow’s research will be different and better than today’s
Some of the partners we work with
Digital Science Areas

- **Tools/ Technologies**
  - Core Businesses Portfolio

- **Consulting**
  - Thought-Leadership
  - Custom Projects
  - Professional Services

- **Grants/ Investments**
  - Catalyst Grant Investments
Guiding Principles

Accelerate research based on digital workflows
Build a more connected research system
Serve researchers where they work rather than driving them to “hubs”
Minimise administrative burden on researchers and administrators
Pursue integrations that improve efficiency and productivity
Provide open APIs and rich documentation
Advocate use of non-proprietary identifiers – ORCID, DOIs etc
Encourage re-use of data and metadata to help researchers get more credit for all of their work and institutions to get better strategic insights
Serve researchers across both STEM and Arts, Social Sciences & Humanities
Addressing the full workflow
Academics like and use our tools, a boon for administrators looking to invest wisely

Overleaf - An online collaborative tool, built for writing research manuscripts

Since 2014
- 10 million documents
- 700,000 authors
- 180 countries

Use of Overleaf by Stanford (Dec 2014) (June 2017)

<table>
<thead>
<tr>
<th></th>
<th>(Dec 2014)</th>
<th>(June 2017)</th>
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<tbody>
<tr>
<td>Confirmed users</td>
<td>375</td>
<td>5,400</td>
</tr>
<tr>
<td>Projects by confirmed users</td>
<td>1,896</td>
<td>49,000</td>
</tr>
</tbody>
</table>
Strategic goal is to connect research collaboration with knowledge as it takes place.
Research data mechanics

*and other research molecules such as grants, datasets, patents....
Consider how the publication travels, influencing the world around it

- Connecting people to ideas through its discovery
- Creating research identity through aggregation
- Enabling assessment, and supporting strategic decisions around research investment

All the time gathering further context and value
Harnessing the flow of these publication molecules* is at the heart of managing and monitoring research

*and other research molecules such as grants, datasets, patents....
Consistent identifiers as the glue

Before

Isolated research system

Internal org.

After

Connected research system

GRID
Global Research Identifier Database
Cataloging the world's research organisations
DOWNLOAD THE FREE DATABASE
An Ideal flow...

Collaboration

Discovery

Publishing

Institution and Government Reporting + Public Profiles
Immediate signals

In learning how to integrate, institutions are gaining new capabilities
In the connecting we get new data
For Mark’s tips to policy makers on interpreting scientific claims, see his paper published in Nature in November 2013 [here](#).
And new imperatives for real-time reporting
Faster dissemination, new indicators of engagement & impact

Dreadnoughtus schrani 3D PDF images - Lacovara et al., 2014, A Gigantic, Exceptionally Complete Titanosaurian Sauropod Dinosaur from Southern Patagonia, Argentina, Scientific Reports,

I n the mudflats of southern Patagonia, 80 miles off the electrical grid, scientists have unearthed a remarkably complete skeleton of a new species of dinosaur — one of the largest creatures ever to have walked Earth.

This bulking dinosaur stood two stories tall at the shoulders and weighed as much as seven Tyrannosaurus rex. It measured 10 feet from head to tail, including an 80-foot-long neck and 30-foot-long tail.
Improved science communication through data availability

A beautiful interactive map of all previous Ebola outbreaks produced by the New York Times

The underlying data article with data sets hosted by Figshare
ORCID is really important for connecting systems
Pushing author metadata through Overleaf
Easier collaboration
How we are thinking about Digital Scholarship & Digital Humanities?

Preserve, share, visualise

Collecting data with the goal of preserving, sharing and visualising it is important to data management.

Research as a cycle

There are research products that happen throughout the cycle that should be published, shared, and disseminated.

Cross-disciplinary research

The future of research: disciplines will matter less and the data collected will matter more.
Built with Figshare’s Open API Toolset
A visual dataset of dance steps for behavioural experimentation
The Music Archive of Monash University creates a community of digital archives to further scholarship

- Digitising archives helps preserve artefacts from deterioration
- Accessible research through 3D imaging allows those who can’t visit the artefact in person to study and understand it.
- By sharing images of the artefacts, it encourages others to further research
Digitising and showcasing the Jeune Scott-Kemball collection - a finite number of shadow puppets made of leather

Rambut Geni - Wayang Kulit (shadow puppet) found on MAMU
Altmetric for Books

Badges and explorer data integration
Tracking at the book (ISBN) and chapter (DOI) level
Over 1.3million mentions of over 650,000 books & book chapters
32,000 references from public policy, nearly 60,000 wikipedia citations, over 65,000 mentions in the mainstream media
Digging into the details

So far, Altmetric has seen this research output assigned in 191 syllabi from 48 institutions on Open Syllabus Project.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Syllabi count</th>
<th>Course subject areas covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>44</td>
<td>Philosophy, Agriculture, Law, Economics, Medicine, Public Health, Sociology, Business, Psychology</td>
</tr>
<tr>
<td>The University of Texas at Dallas</td>
<td>14</td>
<td>Unknown</td>
</tr>
<tr>
<td>University of Oregon</td>
<td>11</td>
<td>Psychology, Education</td>
</tr>
<tr>
<td>Woodbury University</td>
<td>8</td>
<td>Philosophy, Writing and Composition</td>
</tr>
<tr>
<td>The University of Texas at Austin</td>
<td>8</td>
<td>Philosophy</td>
</tr>
</tbody>
</table>
Tracking attention over time
Analysing the data
Questions?

Please e-mail the team with any follow-ups you would like to do:

Digital Science Research Metrics – s.cawley@digital-science.com

Figshare for Institutions – e.gardeur@figshare.com

Overleaf for Institutions - villy.ioannou@overleaf.com