Identity, Collaboration, and Impact:

Enhancing Research With Open, Integrated Digital Systems

Dr. Bruce Herbert, Director
Office of Scholarly Communications
Digital and networking technologies are prompting significant change and opportunity in the publication and scholarly communications process. These disruptive technologies are causing the academy to assess the traditional role of commercial publishers, copyright, fair use, rankings of journals and the process of peer review.

While challenging, the changes also present exciting opportunities for fundamental improvement to the scholarly communications process.
Academic/research libraries are seeking to **work with faculty** to influence and promote **positive change** so that access to scholarly information continues its vital role in research and scholarship with changes that:

- Improve access
- Strengthen author/faculty rights
- Decrease costs
- Enhance scholarship

*The top 50 word [wordle.net](http://wordle.net) cloud of terms from *Transforming Scholarly Communication*, an Workshop co-hosted by Harvard University & Microsoft Research (New England).*  
[http://msrworkshop.tumblr.com/tagged/resources](http://msrworkshop.tumblr.com/tagged/resources)*
The Challenge

Serving the 21st Century Scholar

Bapst Library - Boston College

Ironman’s Multitouch Wall Computer Interface

Most Beautiful College Libraries
http://www.campusgrotto.com/most-beautiful-college-libraries.html
TAMU’s embarking on the final phase of **Vision 2020: Creating a Culture of Excellence**.

To achieve this vision, TAMU will:

- Provide an outstanding educational experience for all students
- Produce impactful new knowledge, innovations, and creative works
- Place the needs of the public good at the forefront of our mission

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**Defining Goals**

**TAMU Strategic Planning**

**Strategic Planning 2015-2020**

We are embarking on the final phase of **Vision 2020: Creating a Culture of Excellence**, which articulates Texas A&M University’s bold recognition of necessary institutional evolution required to achieve its mission as a land, sea, and space grant institution of global preeminence. Adopted in 1999, with an explicit vision for acceptance as a consensus leader among peer public institutions, more than 250 stakeholders worked to identify benchmarks, which if achieved, would enhance the value of Texas A&M to The Texas A&M University System, the State of Texas, and the nation.

The next five years will be critically important for Texas A&M University. The University as a whole — including all colleges and divisions — is currently formulating strategic plans for the period leading up to 2020. It is vital that all our planning efforts be as coordinated and inclusive as possible. To that end, the Office of the Provost, the Faculty Senate and the Council of Principal Investigators are jointly convening four planning forums, open to all faculty and staff and also broadcast by TTVN to our campuses outside College Station. The forums will be brown bag, with drinks provided.

**Strategic Planning Process**

**Strategic Planning Open Forums**

The forums will be organized as follows:

- **Forum 1** Tuesday, Feb. 10, 11:30 a.m. - 1 p.m., Rudder 601  
  Overview with discussion of university academic goals and measures of success  
  [Download PDF of Highlights of Forum 1](#)  
  [Click here to watch video recording of the forum.](#)

- **Forum 2** Thursday, Feb. 26, 11:30 a.m. - 1 p.m., Rudder 601  
  Dialogue on Texas A&M’s strengths and inhibitors, both internal and external  
  [Download PDF of Highlights of Forum 2](#)  
  [Click here to watch video recording of the forum.](#)

- **Forum 3** Friday, March 13, 11:30 a.m. - 1 p.m., Rudder 601  
  Dialogue on strategies for excellence at Texas A&M  
  [Download PDF of PowerPoint Slides](#)

TAMU Strategic Planning, 2015-2020

WE CAN DO EVEN BETTER.

Among our Vision 2020 peers, we are 13th in total research expenditures, 18th in federal research expenditures, 15th in faculty with prestigious awards, 18th in number of National Academy members, and 18th in citations for our scholars’ work.

To improve, TAMU will enhance:

- Multidisciplinary programs especially areas of grand challenges
- Research, funding, and faculty awards
- Research facilities
Maps of science resulting from large-scale clickstream data provide a detailed, contemporary view of scientific activity.

Research Has Evolved
Expectations

Transformative & Translational Research
Trends in Funding

Resources

NSF Division of Environmental Biology

Proposals keep increasing.
(Success keeps decreasing, since awards have not changed.)

https://nsfdeb.wordpress.com/2013/03/11/deb-numbers-revisiting-performance-of-pi-demographic-groups-part-1/
Open Access literature is digital, online, free of charge, and free of most copyright and licensing restrictions.

Works are still covered by copyright law, but Open Access terms apply to allow sharing and reuse.

All major OA initiatives for scientific and scholarly literature insist on the importance of peer review.

Emerging federal mandates for public access to publications and data.

New Rules
Public Access to Research

http://www.whitehouse.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research
Fig. 1. Distribution of article team sizes in astronomy in two time periods separated by 45 y. The distribution from 1961 to 1965 is well described by...
Fig. 1. The rise in multi-university collaboration. By comparing the incidence of papers produced by different authorship structures, we see that the share of multi-university collaborations strongly increases from 1975 to 2005. This rise is especially strong in SE (A) and SS (B), whereas it appears weakly in AH (C), in which collaboration of any kind is rare. The share of single-university collaborations remains roughly constant with time, whereas the share of solo-authored papers strongly declines in SE and SS.


Fig. 2. The relative impact of teams. (A to D) Mean team size comparing all papers and patents with those that received more citations than average in the relevant subfield. (E to H) The RTI, which is the mean number of citations received by team-authored work divided by the mean number of citations received by solo-authored work. A ratio of 1 indicates that team- and solo-authored work have equivalent impact on average. Each point represents the RTI for a given subfield and year, whereas the black lines present the arithmetic average in a given year.
Supporting Open Research
Strategies to Support Research

- Access to Research
- Scholarly Identity & Impact
- Data Management & Access
Strategies to Support Research

Initiatives

**Curmudgeons**
Motivated to maintain status quo.
Change supported by mandates and policy

**Pragmatists**
Motivated by cost benefit analysis.
Change supported by awareness program that highlight benefit,
service programs that address costs,
and design of IT systems that maximize benefits
and minimize costs

**Idealists**
Motivated by purpose & identity (calls to action).
Change supported by awareness programs

Numbers of People Changing Practice

100%

Time
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(Loosely) Coupled Systems

Identity, Collaboration, and Impact

Scholarly Impact Metrics  ⇄ Researcher Identity  ⇄ Scholarly Object  ⇄ Research Grants

Repositories

Value Proposition

- Scholarly Identity & Impact
- Societal Impact
- Comply with Federal Mandates
- Business Practices
Access to Research

OAKTrust: The Texas A&M Repository

http://osd133.library.tamu.edu/
OFFICE OF SCHOLARLY COMMUNICATIONS

Access to Research

OAKTrust: Integrated Metrics

Annual Report for the OAK Fund, Academic Year 2013-2014

Annual report (year 1) for the OAK Fund, the funding to support publication fees for open access articles written by Texas A&M faculty.

URI
http://hdl.handle.net/1969.1/153711

View/Open
Oak Fund Annual Report (1.943Mb)

Date
2015-02-17

Author
Herbert, Bruce E.

Subject
OAK Fund, open access publication fee funding

Department
University Libraries

Collections
Faculty Publications [1029]

Citation

The following license files are associated with this item:

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Except where otherwise noted, this item's license is described as Attribution-NonCommercial 4.0 International

DSpace - Downloads: 11
DSpace - Abstract Views: 11
Facebook - Shares: 1
Facebook - Likes: 1
Twitter - repository.tamu.edu: 1
The Research Information Network, a British research center, recently analyzed the distribution and impact of articles published in hybrid science journal *Nature Communications*.

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Scholarly Identity & Impact

Value Proposition

- Disambiguation
- Discoverability
- Business Practices

Repositories

Initiatives

Scholarly Impact Metrics
Researcher Identity
Scholarly Object
Research Grants

VIVO
ORCID
PLUM Analytics
Scholarly Identity & Impact

VIVO, PlumX, and ORCIDs

http://vivo.tamu.edu/
Scholarly Identity & Impact

VIVO, PlumX, and ORCIDs

https://plu.mx/tamu/g/
Emerging Issue: Identity & Reputation

Scholarly Identity on the Internet

The research community has lacked the ability to link researchers and scholars with their professional activities.

- Name ambiguity
- Discoverability within and across databases
- Author, grantee, and faculty record management
- Output tracking
- Research reporting and impact assessment
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Scholarly Identity & Impact

VIVO, PlumX, and ORCIDs

DISTINGUISH YOURSELF IN
THREE EASY STEPS

ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. Find out more.

1. REGISTER
Get your unique ORCID identifier. Register now! Registration takes 30 seconds.

2. ADD YOUR INFO
Enhance your ORCID record with your professional information and link to your other identifiers (such as Scopus or ResearcherID or LinkedIn).

3. USE YOUR ORCID ID
Include your ORCID identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work.

http://orcid.org/
“Nature journals authors can link their ORCID to their account in our manuscript submission and tracking system, and we[are now] publishing authors’ ORCIDs in papers.”

ORCID iDs are being received by CrossRef and PubMed

Diehl LA, Souza RM, Alves JB, Gordan PA, Esteves RZ, Jorge ML, Coelho IC. InsuOnline, a Serious Game to Teach Insulin Therapy to Primary Care Physicians: Design of the Game and a Randomized Controlled Trial for Educational Validation. JMIR Res Protoc. 2013 Jan 21;2(1):e5. doi: 10.2196/resprot.2431. PubMed PMID: 23612462, AUID-ORCID: 0000-0002-9958-7213
Emerging Issue: Identity & Reputation

ORCID IDs in the Grant Application Process

The U.S. National Institutes of Health (NIH) SciENcv includes ORCID IDs.

Link grant application to ORCID identifier

Import information from ORCID record
Challenges Remain

- **Data Management**
- **Federal Mandates**

A step too far?
The Obama administration must fund human space flight adequately, or stop speaking of exploration?

For the space shuttle Columbia burned during re-entry into the Earth's atmosphere in 2003, the board that was convened to investigate its destruction beyond its technical causes in NASA's organizational malaise. For decades, the board pointed out, the shuttle program had been trying to do too much with too little money. NASA's dismally revealing a clear vision and a better-established mission for human space flight.

The next year, President George W. Bush attempted to supply that vision with a new long-term goal: send astronauts to build a base on the Moon, then send them to Mars. This idea immediately set off a debate that is still continuing, with sceptics asking whether there is any point in returning to the Moon nearly half a century after the first landings. Why not go to Mars directly, or visit near-Earth asteroids, or send people to survey habitats in the deep space beyond Earth?

Yet the shuttle is both counter-productive: a new set of rockets could go to all of these places — and cost, because Bush's vision has been the practicality of the budget increases. Indeed, a blue-ribbon commission reporting on the US President Barack Obama's view (see page 153) finds the organizational malaise unchanged. NASA is still doing too much with too little. Without more money, the agency won't be sending people anywhere beyond the International Space Station, which resides in low Earth orbit at only 500 kilometres up. And even the ability to do that is in question. A new US rocket that would return
Public Access to Data

Data Repository

https://www.tdl.org/
Open Sharing of the Paper and the Data

Ontogeny in the tube-crested dinosaur *Parasaurolophus* (Hadrosauridae) and heterochrony in hadrosaurids

Andrew A. Farke\(^1\), Derek J. Chok\(^2\), Annisa Herrero\(^2\), Brandon Scolieri\(^3\), Sarah Werning\(^3\)

Published October 22, 2013

PubMed 24167777

https://peerj.com/articles/182/#supplemental-information
Open Data

Open Sharing of the Paper and the Data

Segmentation data for braincase of Parasaurolophus sp. (Hadrosauridae: Dinosauria)


Open Data

Open Sharing of the Paper and the Data

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000308
Open Data

Open Sharing of the Paper and the Data

Societal Impacts of Open Access
Roscoe Collegiate High School

- Roscoe Collegiate became the first rural Early College in Texas in 2009 – a college readiness program
- Roscoe Collegiate Model Goals
  - Each student to complete the Associate Degree as an indicator of college readiness,
  - Students earn a STEM field endorsement as an indicator of workforce readiness.

http://www.wtc.edu/students/distancelearning/roscoecollegiate.html
Roscoe Collegiate Capstone
STEM Research Experience

- As alternatives to standardize testing, students engage in authentic research projects
  - Student-led questioning, data collection and analysis, poster development & presentation
  - All students in grades 3-11 conduct 4H-based (agricultural) research projects
  - Grade 12 year-long, career path relevant capstone research project.
- Bond approval to construct STEM Research Center
Open Access to Knowledge Search (OAKSearch)

- “It was very helpful to me as I used it for writing some curriculum material.
- Another teacher I know used it for her work on her masters degree.
- We used it in our college readiness program to teach students the differences between lower level sources and academic sources.
- Lastly, our STEM research class students used it to find sources!”

http://library.tamu.edu/oaksearch/
Next Steps
Populate the systems with information
Stakeholder buy-in
Professional development
Scale the projects

Next Steps

Implementation & Scaling

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Citation