The Shadow Acquisitions Budget: 
APCs and Open Access Publications at a Research University

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CNI Fall Meeting
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Environment – The Campus

- University of Illinois at Urbana-Champaign
  - Comprehensive, land-grant mission
  - 49,339 students
  - 14,672 graduate students
  - 1,880 faculty
  - ICR income 2017: $138 million
  - Sponsored research 2017: $462 million
  - Prominent programs in engineering, physical sciences, psychology, music, area studies
Environment – Scholarly Communications

• **Status of OA Mandates**
  - Campus Open Access Policy (2016)

• **Library Partnership with Research Admin**
  - Illinois Experts ([www.experts.Illinois.edu](http://www.experts.Illinois.edu)).
  - Illinois Data Bank ([https://databank.illinois.edu/](https://databank.illinois.edu/))

• **Library Support for Open Access**
  - Leadership in Campus OA Policy Development
  - Strong Support for Open Digitization
  - Support for Acquisition-related OA/Scholarly Communications Efforts
    - SCOAP3
    - ArXiv
    - Knowledge Unlatched
  - Developing Library Publishing Program
  - No history of Library or OVCR underwriting/paying APCs
Conversations Lead to Questions...

- How much does Illinois spend on subvention fees?
- How do subvention costs break down when analyzed against the type of OA publication?
- What is the percentage spent with commercial OA publications as a percentage of the institutional spend on similar content (journals) with the same commercial publishers?
- Could this data influence negotiation toward offsetting models for commercial journal pricing?
- Is there any correlation between author rank and OA publication?
- Do APC costs present a measurable opportunity cost to an institution?
Open Access

• Several studies attempt to determine % of literature that is OA
  – Science Metrix, 2018, funded by NSF: “at least 50% of articles become available in OA within 12-18 months of publication”
  – Piwowar, Priem, at al, 2018, PeerJ: 28%-47%
  – Martin-Martin, Costas, et al, 2018, Journal of Infometrics: “overall availability of 54.6% with important differences by country and subject”
Open Access Initiatives

• Pay it Forward project, OA2020 and Plan S pursuing Gold Open Access built around APC costs
• Research I (RI) universities have invested in Gold OA
• We are attempting to measure OA frequencies at UIUC
Methodology

- From local SciVal PURE database:
  - Extracted metadata from 37,229 UIUC researcher publications from 2013 to mid-2018
  - Identified 27,131 articles - not including erratum, letters, editorials; 72.9% of the publications, 4.93K articles/year
  - Metadata includes title, author, ISSN, EISSN, DOI

- Downloaded DOAJ database, Ulrich’s Open Access records
Determination of Open Access

- From 27,131 Journal Articles (2013-2018)
  - Searched ISSN, EISSN, title against DOAJ & Ulrich’s APIs for Gold OA articles
  - Searched article DOI against UnPaywall API to determine OA availability
- UnPaywall gives Gold, Green, Hybrid, and Bronze OA types
- Recorded APC Charges in US $ using:
  - DOAJ database
  - Max Planck OA APC list
  - Journal websites
Caveats

• Used Base Cost APCs in calculations
  – Did not pro-rate for non-Illinois co-authorship
  – Did not attempt to calculate additional charges if journal charged based on pages, words, additional images, etc....
  – Did not differentiate between faculty, graduate students, etc...

• No date/time adjustment For:
  – Moving Walls
  – Embargo Periods for NIH Sponsored Articles
Gold OA

- 12.9% of articles (3,494) are in Gold OA journals
- Total of 409 different Gold journals. Long tail: 205 had 1 article only
- Only 9 of the top 100 Gold OA journals DO NOT charge APCs (incl 4 in Scoap3)
- Total APC expenses were $4.785 million
- Average APC article charge was $1,511
  - Compares with $1,825 for Research I universities in Pay it Forward Project
Scoap3 OA

- Scoap3 journals: CERN negotiates & tenders offers to 11 High Energy Physics journals
- UIUC authors were on 569 articles in these journals 2013 - 2018
- Assessed $10,203 in 2018 for UIUC SCOAP3 access
- Cost of $88 per article over the 5+ years
- At $1,500 per article this would be $854K
- Very inexpensive model
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<th>Articles</th>
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% of Articles any Type of OA

• Totaling DOAJ, Ulrichs, Unpaywall OA:
  • 40.9% of all articles (11,095)
  • Includes Gold, Green, Hybrid, or Bronze OA – adding in UnPaywall matches
• Problems with Bronze UnPaywall data
• Compares with numbers in quoted previously
• Is this representative of similar R1 institutions?
All OA (Gold, Green, Bronze)

Percent of Articles that are OA (Gold, Green, Bronze) by Year

% of Articles OA All

Year

2013 2014 2015 2016 2017 2018
Next Steps

- Duplicate the study at other Institutions

More Questions to Answer:
- How do existing models contribute toward, drive, or undermine negotiation toward offsetting models for commercial journal pricing?
- How do the publications released via OA line up in terms of author type? For example, tenured faculty, tenure line faculty, and graduate students/research assistants?
- Do APC costs present a measurable opportunity cost to an institution?
- Is there a correlation between the cost of the APC-based publications and the relative impact factor of the titles?
- How does align with Plan S requirements?

- Qualitative Surveys with Faculty
- Discussion of Economic Implications (who will pay?)
  - For Campus....
  - For Faculty....