

# Would an APC-funded business model for open access be sustainable at scale?

## *Pay-It-Forward Project Findings*

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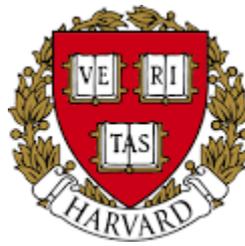


# Pay It Forward

*Investigating a Sustainable Model of Open Access Article Processing Charges for Large North American Research Institutions*

**“build a set of financial scenarios, or models, depicting the financial implications an APC-based system of scholarly journal publishing, for the conversion of the current system of scholarly journal publishing to an APC-based system, for large North American research institutions.”**





# Scope

- North American research institutions (U.S. and Canada)  
Library partners: University of California, Harvard, Ohio State University, University of British Columbia
- Scholarly journals and conference proceedings only
- Models APC-funded scholarly journal publishing system at 100% scale





# Qualitative Research

Carol Tenopir, University of Tennessee, Knoxville  
(authors)

Greg Tananbaum and ALPSP (publishers)



# Importance of Factors When Selecting Where to Publish

1. Quality and reputation of journal
2. Fit with Scope of journal
3. Audience
4. Impact Factor
5. Likelihood of acceptance
6. Time from submission to publication
7. Editor or editorial board
8. Open Access

***“Taken together, it is evident that reputation building within a specific field is at the heart of what matters most to academic scholars.”***





# Author Willingness to Pay

- **Personal Funds** [English, Engineering: ~\$0, Microbiology, Business: ~\$250]
- **Discretionary Research Funds** [English: <\$100, Genetics: <\$1000]
- **Library Open Access Funds** [History: ~\$100, Genetics: <\$2000]
- **Grant Funds** [History: ~\$100, Genetics: <\$2000]

Observation:

**author discretion → incentive to *economize***



# Publisher Attitudes

- OA has a substantial impact on long-term business model strategy and growth plans, for number of papers and new journal titles
- Most (non-OA) publishers experimenting with OA journals or planning to soon



# Quantitative Research

Solomon & Björk

Mark McCabe

Greg Tananbaum

Mat Willmott

# Lots of Data!

4 partner libraries, including 10 UC campuses and CDL

- Library journal expenditures for 2009-2013
- Publication data from Web of Science and Scopus for 2009-2013
- Research expenditure data from HERD (except UBC)
- APC data from websites, EU databases, Heather Morrison, Solomon & Björk, Scopus
- Publisher revenue data





# What Does it Cost to Publish?

- Cost Per Article: ~\$500 to ~\$2500  
Depends on how it's calculated and publisher 'fixed effects'
- plausible minimum CPA is **\$1,084** (including 13% surplus)
- **\$1,864** emerged as a defensible CPA, based on current OA expenditures at partner institutions





# What are Current APCs?

- APCs for full OA journals published by partner university authors averaged **\$1,775 USD**
- APCs for converted journals published by major subscription publishers averaged **\$1,825 USD**

Solomon & Björk





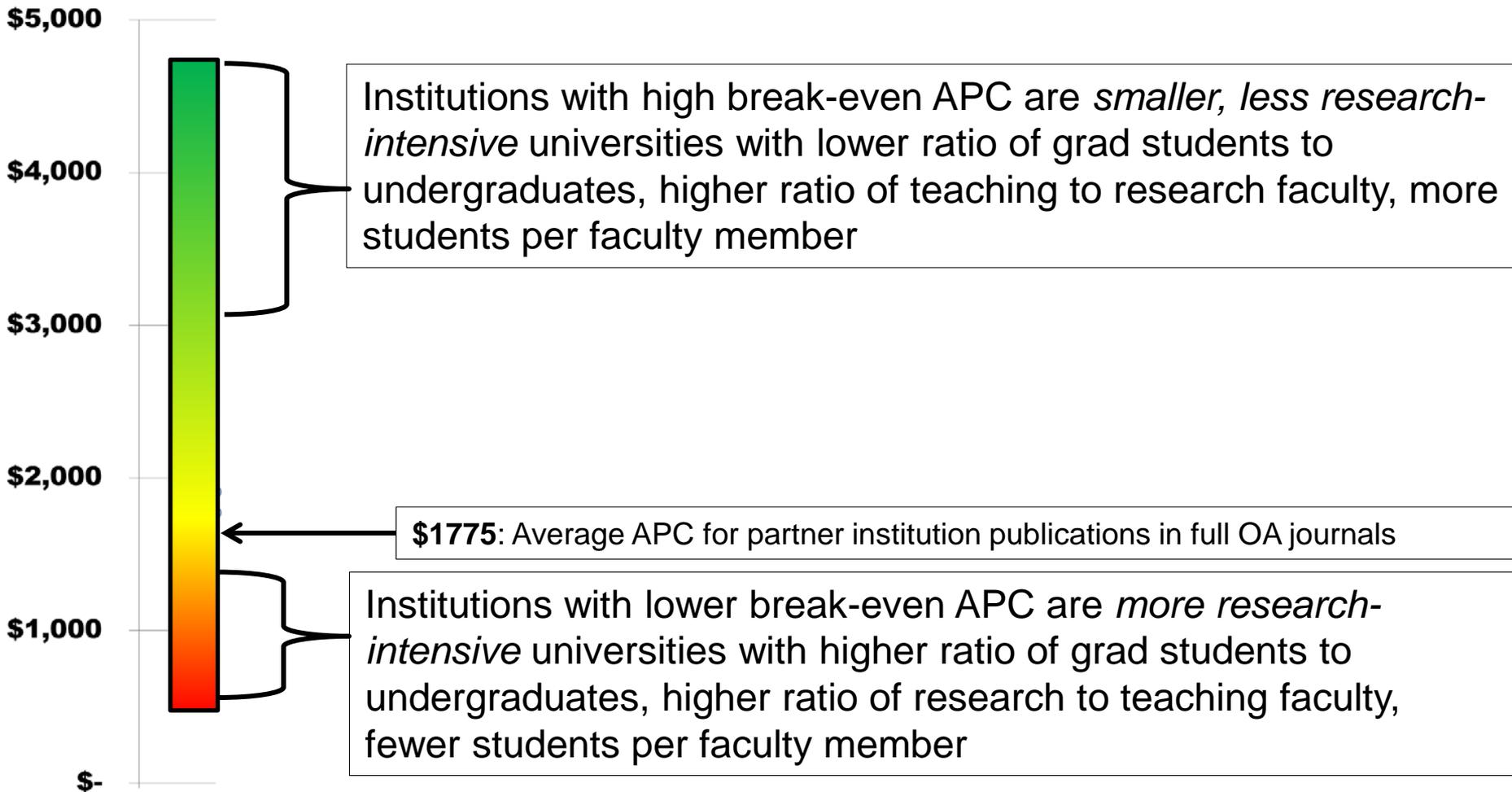
# Break-even APC: Example

- Journal subscription budget: **\$3,989,987**
- Published papers: **3,429**
  - Published papers with associated grants: **2,389**
  - Published papers without grants: **1,040**
- Break-even APC
  - library budget only: **\$1,164**
  - including grant funds: **\$3,837**

(avg APC now \$1,775; avg CPA now \$1,864)



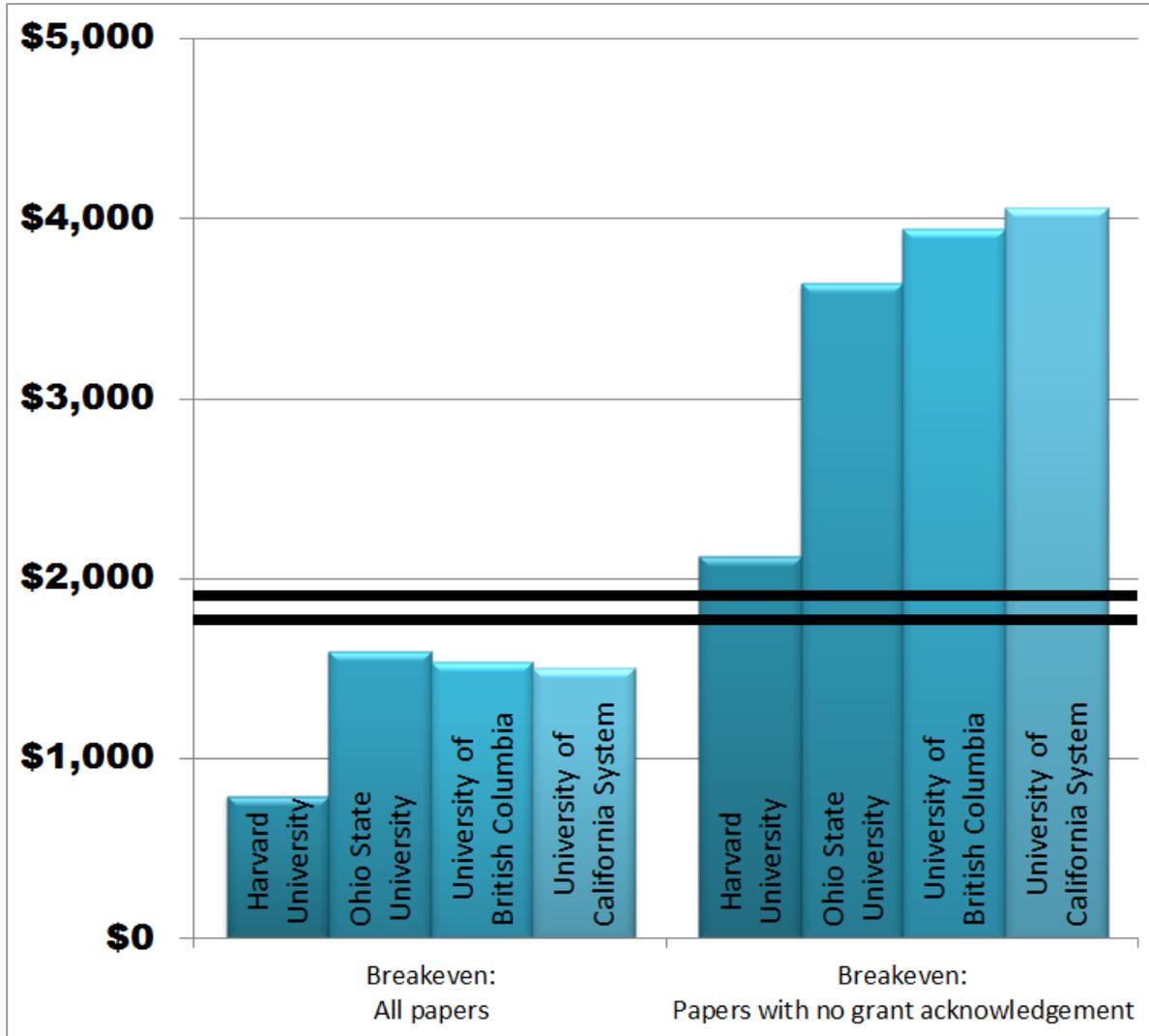
# Break-even APC: Library Budgets



Demographic data from IPEDS <http://nces.ed.gov/ipeds/>



# Break-even APC: Grants Pay First



**\$1775:** Average APC for partner institution publications in full OA journals





# What Will Future APCs Cost?

Two distinct publisher populations today

- No significant relationship between “quality” and APC levels (lots of these now)
- Strong, positive correlation between “quality” and APCs (smaller set but includes most of the major publishers)

Assume that publishers set APCs in relation to journal “quality”;  
IF and SNIP are proxies for “quality”

$$\text{Estimated APC} = 1147 + 709.4 * \text{SNIP}$$

**Baseline (SNIP=1.0) journal cost will be \$1,856**





# Library Pays Scenario: Example

- Journal subscription budget: **\$3,989,987**
- Estimated APC Expenditure for 3,429 papers: **\$7,229,706**
- Estimated APC Expenditure for 1,040 papers with no grants: **\$2,118,504**



# How to Achieve Sustainability?

“...funding a journal with APCs is acceptable **if authors do not have to pay the money themselves.**”

“I think this is beginning to happen [OA Big Deals], and that publishers are finding ways to create an APC-based market that will be as dysfunctional as the subscription-based market is. The basic problem with APCs is that publishers can charge what they like, knowing that if universities start to tell academics that they must publish in cheaper journals, there will be an uproar about the perceived threat to academic freedom. **I have never seen a convincing explanation for how a properly free market in APCs could work.**”

Sir Tim Gowers, interview with Richard Poynder, 2016



# How to Achieve Sustainability, continued?

## Behavioral Objective:

- Authors choose the “best” platform (given the price of access, publication funding, platform readership, quality of editors, etc.)
- Publishers respond to *elastic* author demand by competing for submissions.

## Claim:

- Under *ideal* conditions competition in an OA environment *lowers* cost of scholarly communication
- Many mitigating factors, e.g. platform ownership concentration, *delegation of APC payment responsibility, etc.*



# Multi-payer Scenario Example 1

Library subsidy of up to **\$1,164** (break-even APC)

- Library pays **\$3,989,697** in subsidies for 3,429 papers; fully covers APCs for 28 papers
- Grant funds cover **\$2,331,418** for ~2,374 papers
- **Other discretionary funds** covers **\$908,592** for ~1,027 papers



# Multi-payer Scenario Example 2

Library subsidy of up to **\$1,857** (APC for SNIP=1.0 journal)

- Library pays **\$6,148,241** in subsidies for 3,429 papers; fully covers APCs for 1,043 papers
- Grant funds cover **\$799,541** for ~1,728 papers
- **Other discretionary funds** cover **\$281,923** for ~658 papers



# Conclusions So Far (1 of 4)

- We can't perfectly predict future APCs, or how they'll differ between disciplines.
- But we can build crude estimations and they'll improve over time



# Conclusions So Far (2 of 4)

- It appears that library journal budgets alone won't cover all APCs for research-intensive institutions
- But grant funding at those institutions could cover the difference



# Conclusions So Far (3 of 4)

- Attitudes toward open access and APCs vary widely between disciplines.
- But all authors are price sensitive and exhibit the behavior we want, when they have discretion to choose where to publish based on cost/quality.



# Conclusions So Far (4 of 4)

- Giving authors discretionary funds introduces competition to APC pricing, without interfering with author choice in where to publish.
- This is the best chance to encourage a competitive journal market, drive costs down over time.

