

The Rest of STm

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American Society of Civil Engineers

Founded in 1852

Over 150,000 members world-wide

Publisher of Technical Content

- 36 technical journals
- 40-50 books per year
- Standards
- Member magazines



Putting the S and T back in STM

What makes civil engineering journals different than medical journals?

- Funding of research
- Many smaller communities within one (true for some medical disciplines as well)
- Citation and usage behavior
- Traditions in peer review
- Slower uptake in publishing standards

Funding

Funding of research comes from varied sources:

- National Science Foundation
- Department of Energy
- Department of Defense
- States
- Industry

The NSF is the largest driver of adoption of new regulations

- Data policies
- Archiving policies

R&D has been stable but China is definitely outspending everyone else

Large influx of research from Middle East and India



Small Communities with Overlap

Environmental Engineers: overlaps with chemistry and climate science

Mechanics: overlaps with physics

Construction: overlaps with business management

Ports: overlaps with oceanography

Water Resources: overlaps with geophysics and oceanography

Structural and Material well formed self-supporting communities

Citation and Usage

Citations to Civil Engineering content peaks at about 4.5 years post publication

- 2 year Impact Factors typically low (avg. 1.250; range 0.033 – 5.288)
- 5 year Impact Factors more appropriate

Similarly usage (downloads) builds over longer periods of time

- Lots of usage of content older than 24 months
- Classic literature still heavily downloaded and cited
- Large demand for back content

Peer Review

Traditionally single-blind review

Longer review times

- ASCE recently reduced reviewer time to 30 days
- Avg. time to publication 8 months

Extensive reviews

- 3-4 reviews per paper
- Only 45% of papers rejected without review
- Many authors receiving feedback

Entire process dominated by US or European editors and reviewers

Let's Try Something New

Very slow to adopt new workflows and tools

- Data driven decision makers
- Very (very) risk averse

Things Civil Engineers don't care about yet:

- Open Access*
- Data Availability*
- Transparent COIs
- Reproducibility of research*
- Preprints

*Starting to see some movement

Open Access

Overwhelmingly feel that everyone who needs access can get access under current system

Very burned out of spam email from OA journals

Not fans of government mandates in general

Unaware of funding available to pay APCs

See OA Journals as lesser quality

See online only journals as lesser quality (getting better)

Uncomfortable with CC-BY

Data Availability

Sees significant burden in making data available

Many industry sources of funding require researchers NOT share the data

Starting to see shift

- One journal piloting the requirement of Data Availability statement with each paper
- Second journal thinking of joining pilot
- Pilot does not require that the data be made available

Transparency

Journals and editors are a little loosey goosey on COI

Authors expected to disclose conflicts in the acknowledgement section

More attention coming on this topic

- Impact of Climate Change
- Hydraulic Fracturing
- Emphasis on Life-cycle Costs

Reproducibility



Preprints

Not being discussed at all

Traditionally use conference proceedings for early dissemination

Remember: Risk averse, long citation tail

- Civil Engineers wait a while before using and citing peer reviewed content
- Preprint model requires HUGE cultural shift



Other Industry Initiatives

ORCID

- DATA Driven!
- Value seen though it needs to be easy
- Seeing more ORCID use (as funders start talking about it)

Credit

- Current system works just fine
- Using acknowledgements

Peer review credit

- Like It!
- Letting people share reviews: Resounding No!

Open/signed reviews

Publishing reviews

Social Media

How Do We Get There?

Education

- Ed board meetings
- Annual Editor's Workshop (like a mini-CSE)
- Sharing links to articles of interest

Share What Competitors Do

Find Data to Make the Sell

Find Champions Among the Ranks

Thank you!

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