



Stakeholder Report

Nov 27, 2020

LAPSE:2020.1174

News

The Living Archive for Process Systems Engineering (LAPSE, <http://PSEcommunity.org/LAPSE>) has been holding strong. Although the pandemic drastically reduced the volunteer hours we normally see over the summer, **we still continue to grow and operate**. LAPSE has been gaining recognition within the PSE community and see submissions from major research groups that help bolster LAPSE's reputation.

Journal Partners

We remain partnered with *Processes* and *Energies* which continue to provide many of our submissions. However, as of the time of writing, **we are now negotiating with a major subscription-based publisher** to include new journals. Under the current proposal, all authors would either automatically, or with an opt-in check box, have their preprints and/or post-prints submitted to immediately LAPSE upon acceptance, in fulfillment of the National Science and Engineering Research Council (of Canada) open-access requirements. This would be a huge step as the first subscription-based journal to participate, and would open the doors for all relevant journals to participate.



energies



processes

Funders

We continue to receive support from these organizations:



Computer Aids for Chemical Engineering



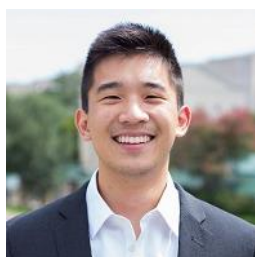
Technical University of Denmark



SINTEF

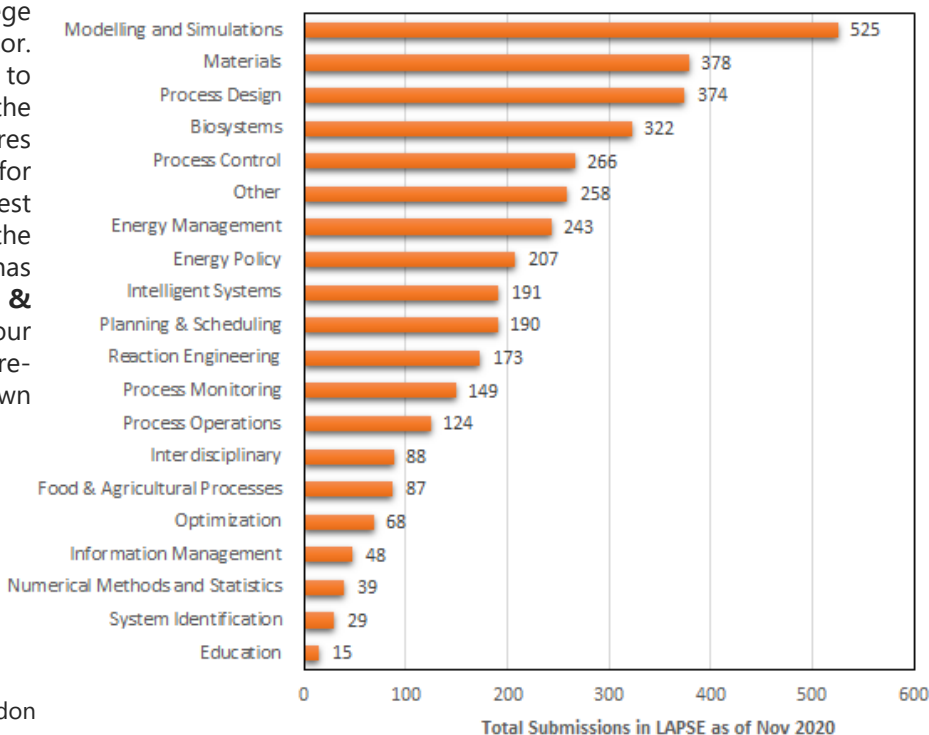
Curation and Categorization

Dr. Calvin Tsay (now at Imperial College London) continues to serve as head curator. Dr. Tsay examines each submission to ensure that it has been categorized in the correct subject area, which often requires considering each abstract individually for appropriateness. For 2020, the biggest growth area Dr. Tsay identified was the Food – Water – Energy nexus, and so he has added the **new subject category Food & Agricultural Processes** and is now in our Top 20. **Modelling and Simulations** remains the #1 category and has also grown dramatically compared to the others.



Dr. Calvin Tsay
LAPSE Head Curator
Imperial College London

Top 20 Subject Areas in LAPSE

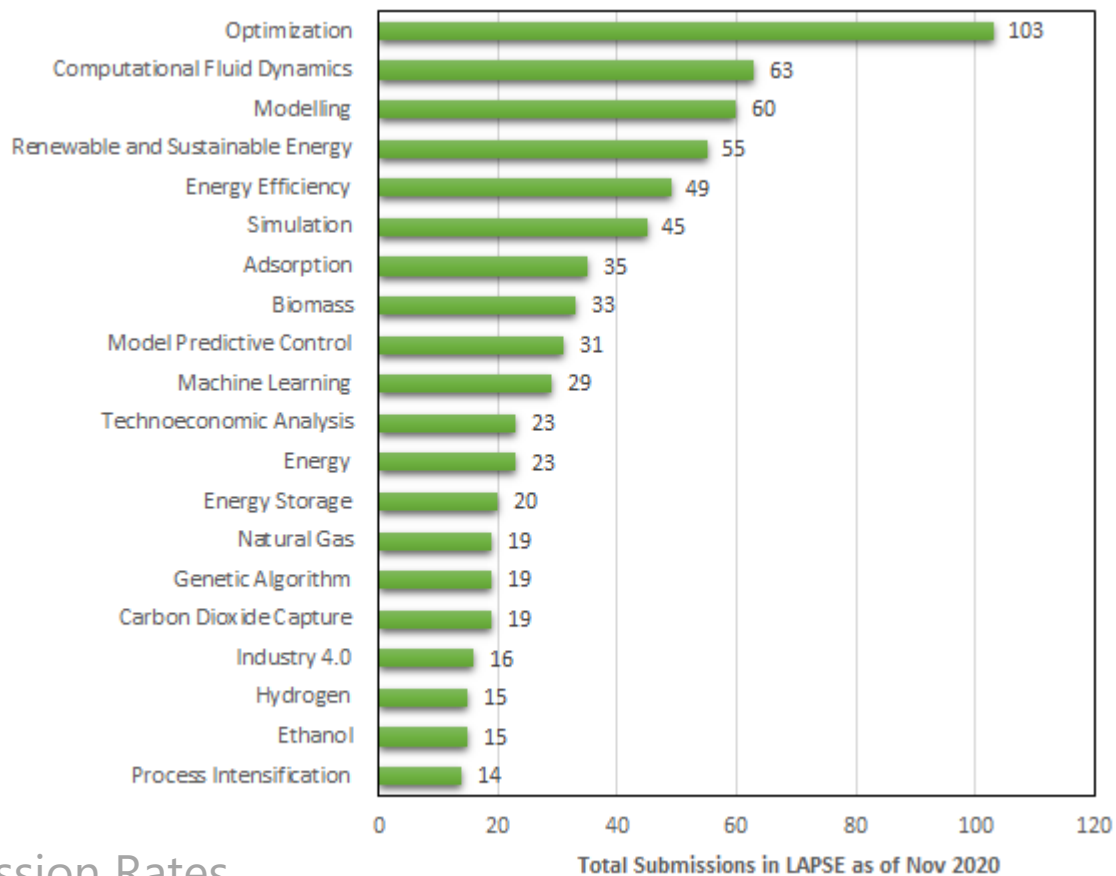


Statistics

Keywords and Rising Trends

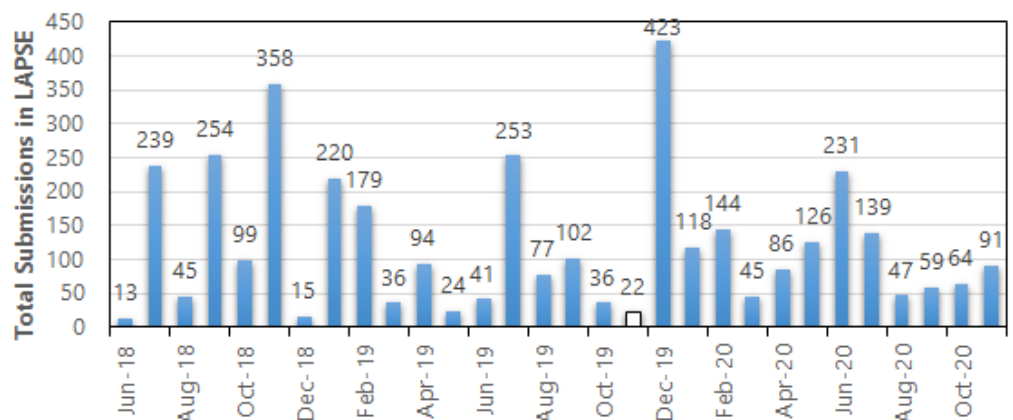
LAPSE allows users to enter their own searchable keywords when making submissions. The system also includes a collection of **controlled keywords** from which users can choose, to better help link related articles. LAPSE automatically suggests and identified controlled keywords from user submissions, as well as links variations in spelling and synonyms together into one controlled keyword (for example, Modelling and Modeling are matched, LNG and Liquefied Natural Gas, etc). The most commonly used keywords by users in LAPSE are below. **Optimization** remains the most common, because many papers incorporate optimization but are not necessarily about optimization. This differs from the Optimization subject category, where optimization algorithm development is the primary purpose of the work. **Computational Fluid Dynamics, Technoeconomic Analysis,** and **Carbon Dioxide Capture** have all **jumped many places** this year, showing rising trends within PSE.

Top 20 Keywords in LAPSE



Submission Rates

Submissions by month are irregular and tend to come in waves. A huge push by Dr. Tsay to curate and clear the backlog of journal dumps was finally completed in Dec 2019. The Dec 2020 numbers are all for new submissions. **The January to November 2020 submission count was 1150, more than the same time last year.**



Record Views

There continues to be a trend of “killer submissions”. The most popular items tend to be **Aspen Plus models, Educational Materials, Conference Presentations** and **Course Lecture Slides**. Although the vast majority of articles are papers, only a few diamonds rise from the rough. Conversely, non-paper submissions are by far more popular, although our total submissions in those categories are far lower.

Amazingly, the #14 most downloaded item is last year’s LAPSE stakeholder report, indicating a general interest in the service.

Although research papers continue to be our bread and butter, LAPSE’s highest impacts are in non-paper submissions. Our goals for 2021 will include proactive recruiting of these materials. Having more “killer” offerings can help bring new users and exposure to the site.

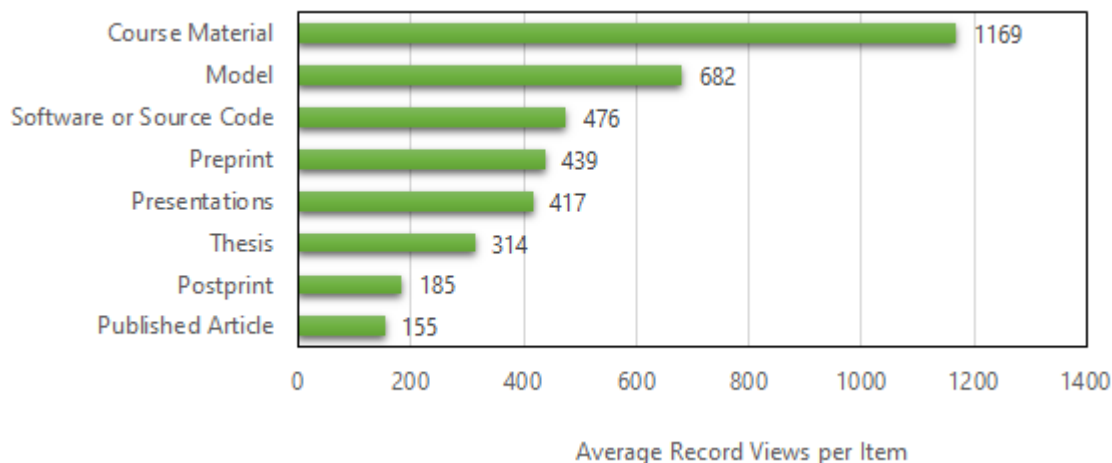
Our course material is the most popular type (an entire undergraduate course lecture slide set in this case) but these are the most difficult types of submissions to secure.

As a whole PSEcommunity.org receives approximately 150 unique visitors per day.

Top 20 Most Viewed Submissions to LAPSE

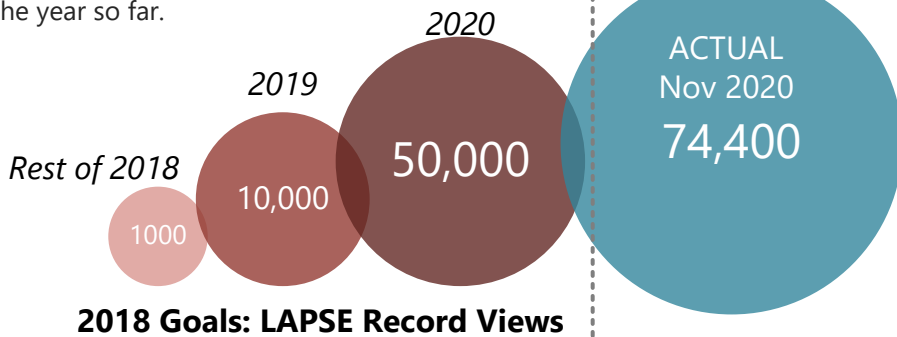
Record Type	LAPSE ID	Page Views	Description
Model	LAPSE:2018.0126	3291	Aspen Plus Simulation, Polygeneration
Published Article	LAPSE:2018.0134	2810	CO2 Capture Paper
Conference Presentation	LAPSE:2019.0620	2163	FOCAPD Talk on TEAs
Preprint	LAPSE:2018.0443	1448	Ind Eng Chem Res Paper, Steel
Model	LAPSE:2018.0394	1177	Aspen Plus Simulation, Polygeneration
Course Material	LAPSE:2018.1189	1169	Course Lecture Slides
Presentation	LAPSE:2019.0442	1155	Department Seminar Slides
Software or Source Code	LAPSE:2019.0444	1133	Aspen Plus Simulation, Steel
Preprint	LAPSE:2018.0738	1115	Comp Chem Eng Paper, Distillation
Model	LAPSE:2018.0444	1111	CFD Simulation, SOFC
Software or Source Code	LAPSE:2018.0136	986	Educational video game
Model	LAPSE:2018.0148	951	Aspen Plus Simulation, Oil & Gas
Presentation	LAPSE:2018.0806	912	Non-conference, steel refining
Report	LAPSE:2019.1135	783	Stakeholder Report
Published Article	LAPSE:2018.0128	777	Frontiers Energy Res Paper, Optimization
Preprint	LAPSE:2018.0133	771	Int J H2 Energy Paper, Nuclear
Preprint	LAPSE:2018.0144	753	J Opt Theory App Paper, Optimization
Conference Presentation	LAPSE:2018.0807	746	Interamerican Congress of Chem Eng Paper, CO2 Capture
Conference Presentation	LAPSE:2018.0143	734	PSE 2018 Presentation, Modelling
Report	LAPSE:2018.0147	668	Stakeholder Report

Average Record Views Per Submission by Record Type



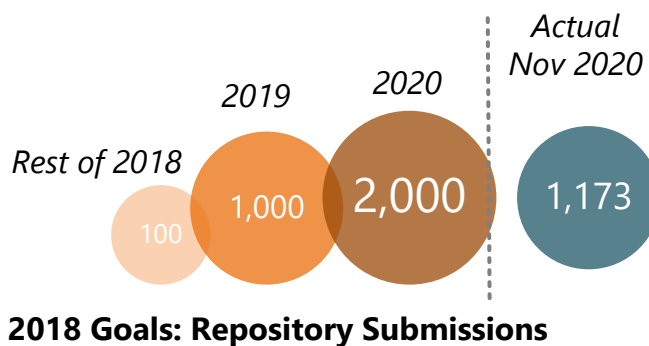
Metrics for Success and Goals for Growth

The plots below were goals set in 2018, showing how we have stacked up so far. We have met or exceeded 3 of our 4 goals for the year so far.



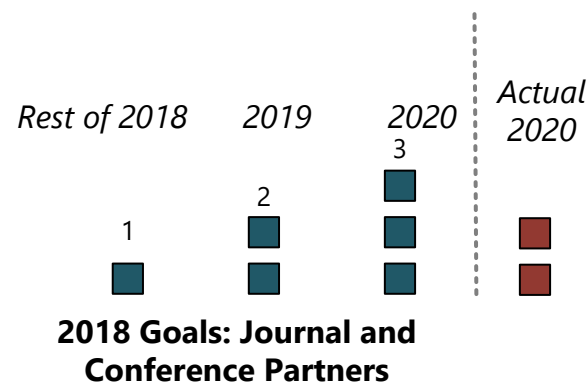
Notes:

- Views have been growing rapidly
- Views are driven by “killer” submissions.
- **We need to identify and solicit more “killer” submissions to keep views growing.**



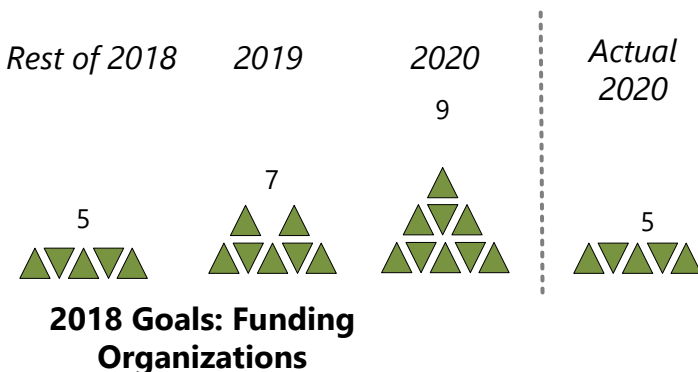
Notes

- Actual submission numbers grew 17% over 2019
- Our 100% growth target was too ambitious
- Targeting 25% growth per year is more realistic going forward.



Notes

- Negotiations are on going for a 3rd partner, perhaps that will be achieved by the end of 2020.
- Once we get the first non-open access publisher as a partner, this should open up the door for everyone else.
- **Those of you on editorial boards, please suggest this with your journals!**



Notes

- Thank you to our sponsors!!!
- Volunteer hours were stretched during the pandemic.
- We will be seeking paid help to alleviate burden allow volunteers to pursue more donors.

Security and Data Protection

Hacking Attempts

LAPSE is routinely the target of cyber attacks. We currently pay for security options with our hosting service (IONOS) that helps to mitigate this risk. For example, **our protection service blocks about 400 attacks on the site per day.**

Spam Attempts

There are many spam related attacks in addition to this. Primarily they are robot registrations (automatic creation of false accounts) which are then used to post spam on our discussion forums. We use a number of tools to block these attacks, through a combination of a third-party CAPTCHA software, Akismet Anti-Spam, and BanHammer. Moreover, in 2020 we removed the discussion forums completely, as they were rarely used. **Successful robot registration attacks have now been reduced to a few per month, down from a few per day** in 2019, and successful attacks have no impact on site function and are ultimately invisible to the user.

We have also upgraded our underlying system code over the summer of 2020, resulting in a more pleasing appearance of PSEcommunity.org but also helping to reduce robot registration attacks at LAPSE.

Human Verification

Human verification continues to be a major component of LAPSE. We presently rely on our volunteers to verify that each contribution is legitimate and appropriate. Unverified submissions are immediately available to the

public in a specially marked section: only when a human curator has verified it will it show up on our front page, or within our curated subject and keyword indices. This will eventually be replaced with an earned-trust system as the number of submissions becomes too great but currently functions quite well.

Data Security and Privacy

Data Security is always a concern with web-based systems relying on user-supplied content. In addition to the anti-hacking systems in place, we use security principles in managing the website. The primary principle is *minimalism*, which is a combination of (1) designing the working systems to be as simple as possible, and (2) collecting, storing, and using as little data as possible. The simplicity aspect as a strategy can be very effective because simple systems are far easier to maintain than complex ones, meaning that updates, errors, and security risks can be resolved quickly and easily. Complex systems are more difficult to maintain, and simultaneously offer more possibilities and avenues to attack. Data minimalism means that we simply collect as little data as physically possible to run the service. For example, user profiles contain the bare minimum amount of information necessary to identify a user. No IP addresses, sensitive information, or credit card information are collected or stored. All information (except passwords, which are only stored in encrypted form and cannot be seen by any human, including the programmers) are intended for public display, and so virtually all user data remains public. With this strategy, in case of a breach, there simply does not exist any sensitive personal information to be stolen to begin with.

Future Directions

Going forward, we have some key goals for 2021.

- **Code Improvements** – We maintain a bug list and continually work to fix things as they come.
- **Journal Relationships** – We will be meeting with relevant journals from major publishers to increase the number of journals, especially subscription-based journals, who automatically put submissions on LAPSE, or otherwise provide easy options for their authors to do so.
- **Paid Support Staff** – Based on the advise of external advisors, we hope to hire some temporary gig-based contractors that can help with some PHP coding needs, since our volunteers are stretched.
- **Conference Proceedings Partnerships** – We continue to hear feedback from conference organizers that want to move away from *Computer Aided Chemical Engineering* for their conference proceedings and use LAPSE instead. Unfortunately these regrets come after the conference is over. **We need help identifying who to contact at the right times as a conference is being organized but before they have signed a contract with the publisher.** Please let us know of any relevant conference organizers we should approach. A small regional conference would be a great starting point.
- **Social Media Feeds.** We will be recruiting a volunteer to create and manage a social media feed (Twitter, etc.) for LAPSE and/or PSE Community.org to help drive growth.

Thank You!

Thank you for your support for LAPSE! Since our volunteers are providing their time, this allows your donations to support key infrastructure requirements such as:

- High throughput web servers
- Storage space
- Anti-virus software
- Geo-colocation
- DDOS attack management
- Redundancy
- Domain name and hosting

Contact Us

For general inquiries about LAPSE, or for how you can **become a supporting member or a volunteer**, contact:

info@psecommunity.org

To report abuse, spam, copyright violations, or other legal issues, contact:

abuse@psecommunity.org

For website useability, contact:

help@psecommunity.org

To contribute to the online discussion about LAPSE, check out our discussion forums at:

<http://psecommunity.org/forums/forum/lapse>



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