

Research on COVID19

Giovanni Colavizza



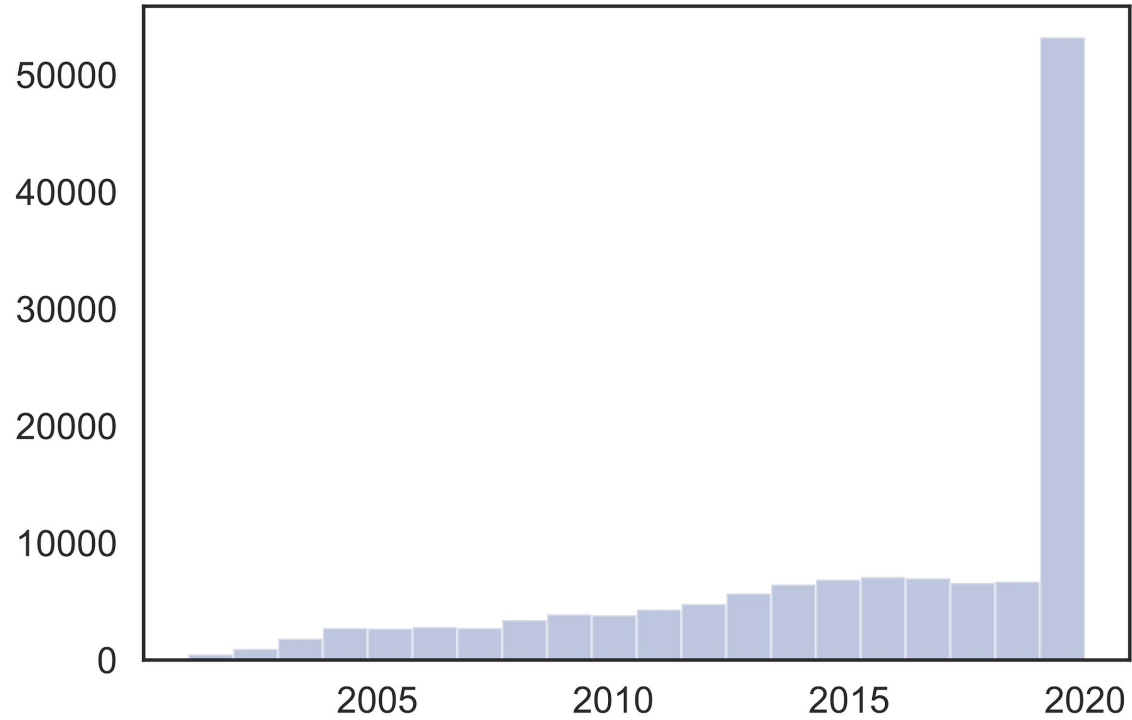
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What I will focus on

- Volume (+ pre-prints and information retrieval)
- Research topics and collaborations

Scientific communication: research volume



Scientific communication: research volume

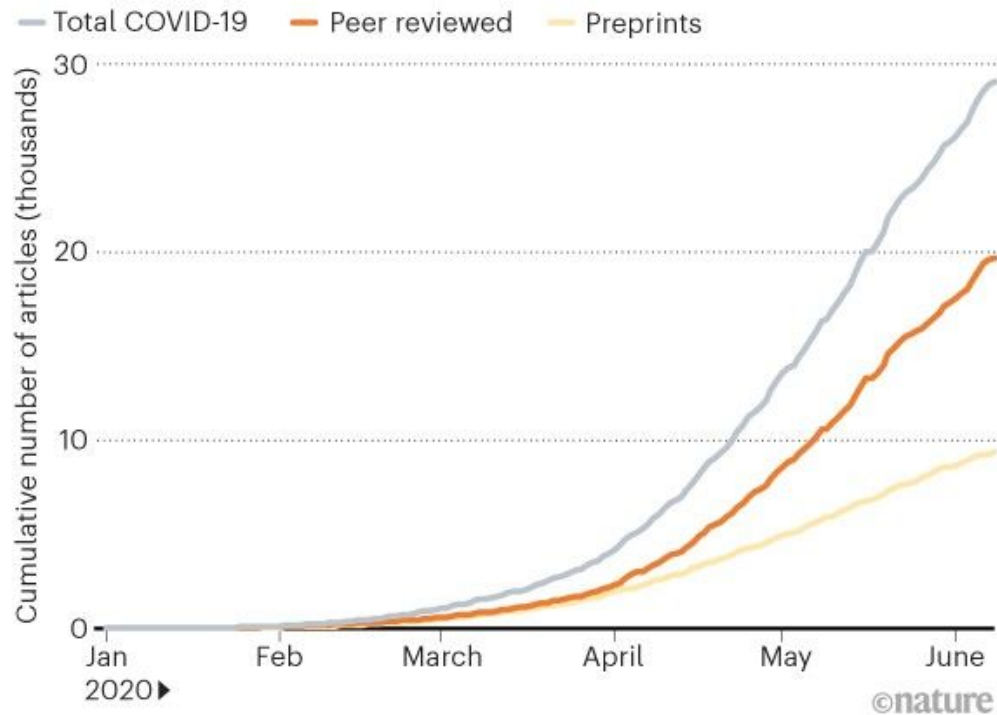
“To give some context, the area of ‘Deep Learning’ in AI is one of the fastest growing fields today and comprises around 150,000 papers.

When deep learning started out, it took around seven and a half years to go from a few hundred papers a year of output to more than 11,000. In the case of COVID, the same volume has been reached in just four and a half *months*.”

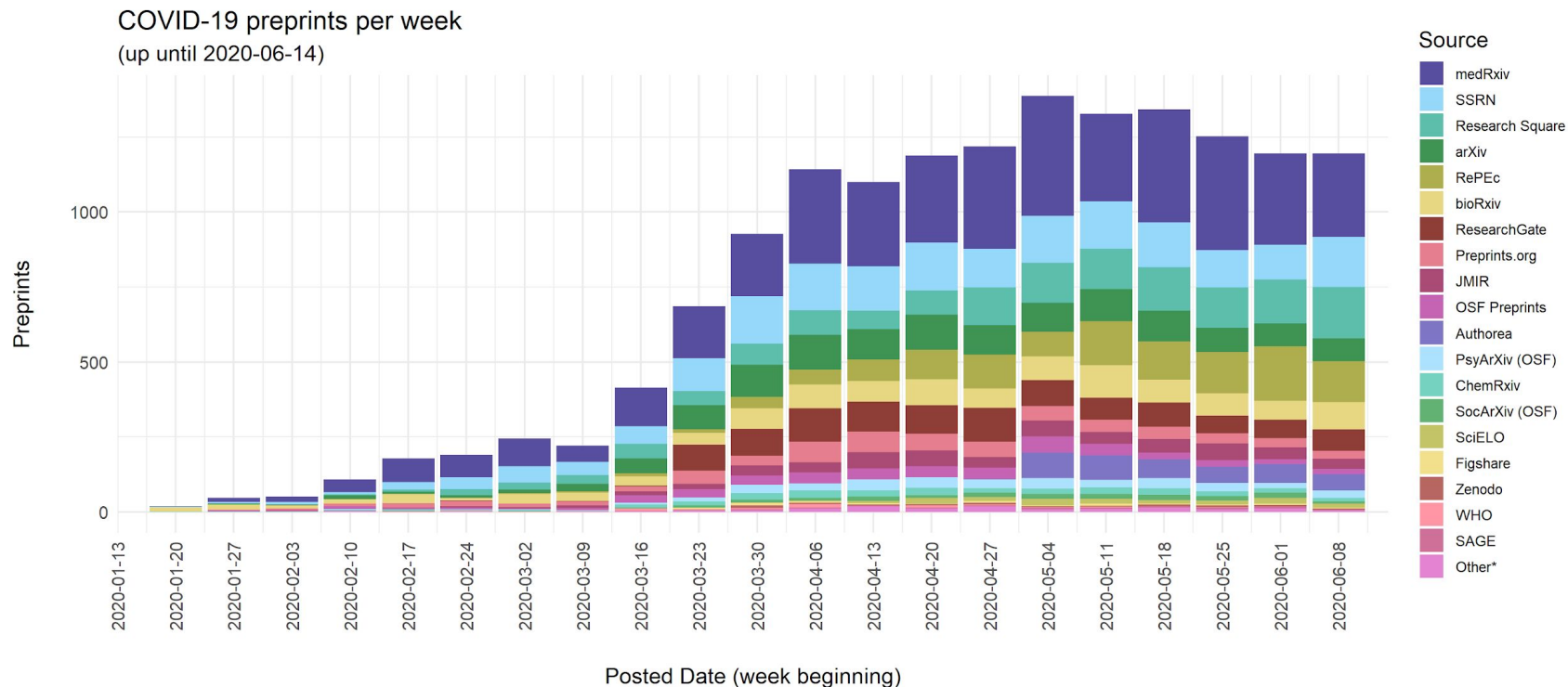
Scientific communication: pre-prints

EXPLOSIVE GROWTH

Since 1 January, nearly 30,000 articles on COVID-19 have been published, according to the the NIH's COVID-19 Portfolio.



Scientific communication: pre-prints



* 'Other' refers to preprint repositories containing <30 total relevant preprints. These include: AfricArXiv (OSF), AgriXiv (OSF), BioHackrXiv (OSF), EarthArXiv (OSF), EcoEvoRxiv (OSF), EdArXiv (OSF), engrXiv (OSF), Frenxiv (OSF), INA-Rxiv (OSF), IndiaRxiv (OSF), LawArXiv (OSF), MediArXiv (OSF), NutriXiv (OSF), ScienceOpen, SportRxiv (OSF), Techrxiv (IEEE).

Scientific communication: information retrieval

AI2 Allen Institute for AI



SPIKE-CORD: Extractive Search over CORD-19

Type Query



T incubation period ... from:* -|to to:* days

The Query | incubation period ... from:* -|to to:* days



Chapter 5 Virus Transmission and Epidemiology

For example , the **incubation period** of rhinovirus , a cause of the common cold , tends to be about 1 - 3 days .

1 from - 3 to

19809



AORN Guidance Statement: Human and Avian Influenza and Severe Acute Respiratory Syndrome

When a person is exposed , the average **incubation period** for influenza is two days , but it can range from one to four days . "

one from to four to

27183



Emerging and re-emerging infectious diseases: Review of general contributing factors and of West Nile virus

26 WNV commonly manifests as a subclinical infection , with an **incubation period** of 1 to 6 days .

1 from to 6 to

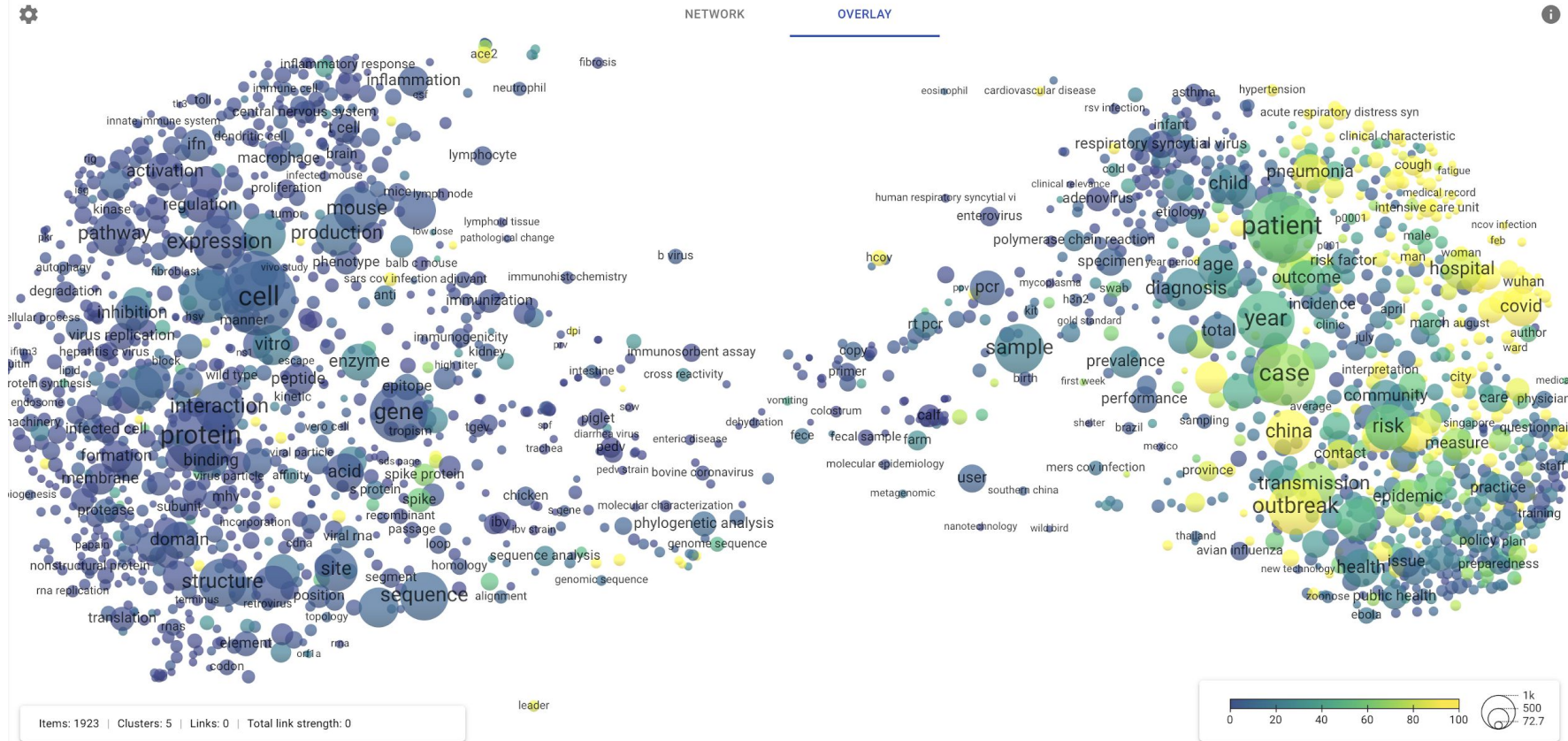
36386

In summary

- Very large volume in very short time: unprecedented
- Importance of pre-prints
- Acceleration in tool development

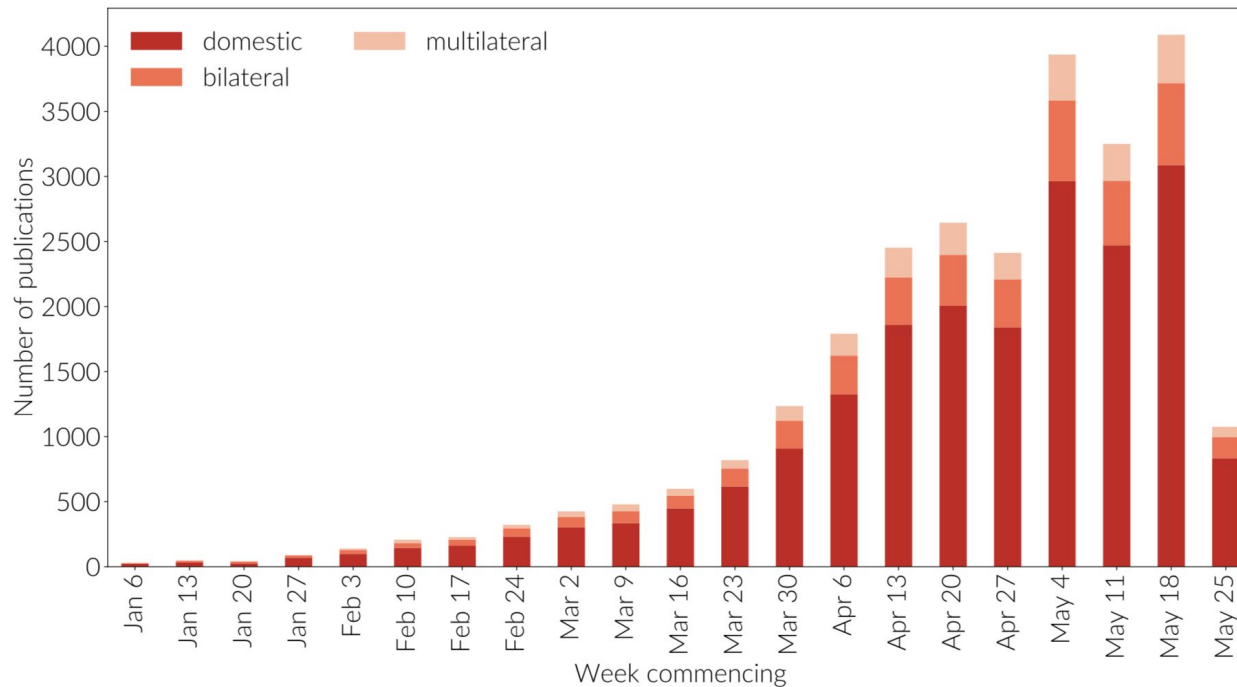
> Still unclear what will stay and what will go

What is being researched

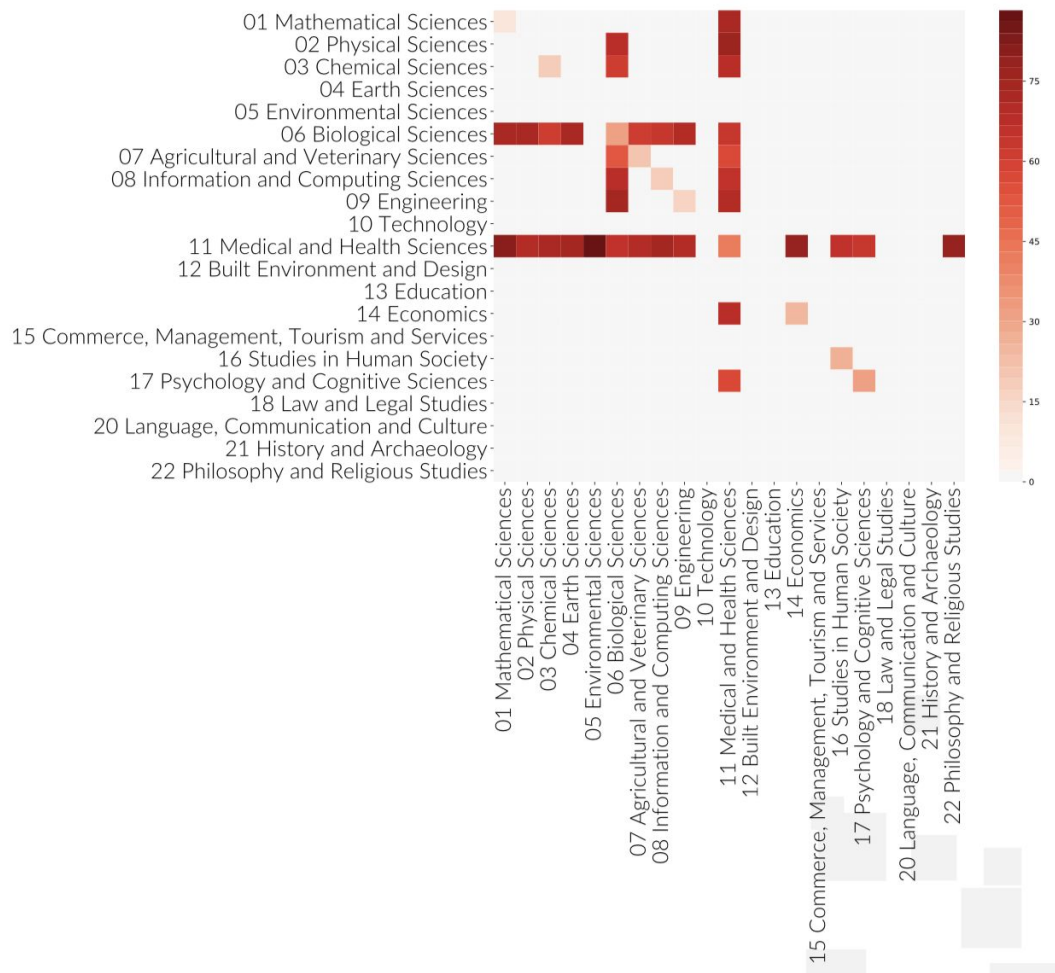


Colavizza et al. (20 April 2020) "A scientometric overview of COVID-19" <https://www.biorxiv.org/content/10.1101/2020.04.20.046144v1> and CWTS VOSviewer https://app.vosviewer.com/?map=https://www.cwts.nl/projects/covid19/VOSviewer_term_map_CORD19_200404.txt&overlay_visualization=1

Collaborations



Collaborations



In summary

- Initial focus on biomedical research (e.g., transmission and vaccines), epidemics and pandemic containment
- Other disciplines and topics now also contributing more (from health responses to societal responses)
- Primarily domestic research (due to resources already in place and national funding)
- Interdisciplinary collaborations primarily focused on biomedicine + another discipline

> This picture will likely diversify in the near future, as new projects start

What I did not mention

- Reviewing
- Open access
- Funding
- Social and online media
- Societal issues and impact on researchers
- ...

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