



20 ISMPP WEST 20

**THE WINDS OF CHANGE: NAVIGATING UNCHARTED TERRITORY
FOR MEDICAL COMMUNICATION PROFESSIONALS**

Pressure to Publish. Preprints, Peer Review and Retractions in
the Spotlight

Theodora Bloom, Allison Leung, Miriam Merad, Jerry Sheehan, Nicolas Vabret, Susan Wieting

October 1-2, 2020 • Virtual





Today's Panel



Theodora Bloom, PhD
Executive Editor, The BMJ



Jerry Sheehan, MS
Deputy Director, National Library of
Medicine - National Institutes of Health



Allison Leung
Publisher, SAGE



Nicolas Vabret, PhD
Assistant Professor, Precision
Immunology Institute, Mount Sinai
School of Medicine



Miriam Merad, MD, PhD
Director, Precision Immunology
Institute, Mount Sinai School of
Medicine



Susan Wieting
Director, Scientific Publications
Takeda



Have you prepared a manuscript that included a preprint posting?



- a) Yes
- b) No

Total Responses	66	
Yes	7	11%
No	59	89%



Do you include preprints as part development of a publication plan?



- a) Never
- b) Sometimes
- c) Always

Total		
Responses	59	
Always	2	3%
Sometimes	7	12%
Never	50	85%

Preprints, journals, and clinical decisions

Theodora Bloom, PhD

Executive Editor, The BMJ



Competing Interests

- **I'm Executive Editor of *The BMJ*.** It is published by BMJ, a wholly owned subsidiary of the British Medical Association.
- BMJ (the company) receives 8.7% of revenues from drug & device companies through advertising, reprint sales, & sponsorship. For *The BMJ* it's 12%. *The BMJ* is an open access journal that charges article-processing fees for Research Articles.
- I chair the Advisory Board of Europe PubMed Central.
- **I am a founder of the MedRxiv clinical preprint server.**
- I am European Coordinator for the quadrennial Peer Review Congress.
- I am on the Board of AIP Publishing





medRxiv: a server for health science preprints

The screenshot shows the medRxiv website homepage. At the top left, there are logos for CSH (Cold Spring Harbor Laboratory), BMJ, and Yale. The navigation menu includes HOME, ABOUT, SUBMIT, and ALERTS / RSS. The main heading is "medRxiv" with the tagline "THE PREPRINT SERVER FOR HEALTH SCIENCES". Below this is a search bar and a link to "Advanced Search". A red caution notice states: "Caution: Preprints are preliminary reports of work that have not been peer-reviewed. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information." A "Subject Areas" section lists various medical fields in three columns, including All Articles, Addiction Medicine, Allergy and Immunology, Anesthesia, Cardiac Medicine, Dermatology, Emergency Medicine, Endocrinology, Epidemiology, Forensic Medicine, Gastroenterology, Genetic and Genomic Medicine, Geriatric Medicine, Health Economics, Health Informatics, Health Policy, Health Systems and Quality Improvement, Hematology, HIV/AIDS, Infectious Diseases, Intensive Care and Critical Care Medicine, Medical Education, Medical Ethics, Nephrology, Neurology, Nursing, Nutrition, Obstetrics and Gynecology, Occupational and Environmental Health, Oncology, Ophthalmology, Otolaryngology, Pain Medicine, Palliative Medicine, Pathology, Pediatrics, Pharmacology and Therapeutics, Primary Care Research, Psychiatry and Clinical Psychology, Public and Global Health, Radiology and Imaging, Rehabilitation Medicine and Physical Therapy, Respiratory Medicine, Rheumatology, Sexual and Reproductive Health, Sports Medicine, Surgery, Toxicology, and Transplantation. At the bottom left, there is a "View by Month" link.

- Conceptually and technologically similar to bioRxiv
- Not-for-profit
- A service not a product
- Publisher-neutral
- Operated by CSH Laboratory
- Managed in partnership with BMJ and Yale University
- Launched Q2 2019
- Now supported by CZI



medRxiv is receiving many new papers on coronavirus SARS-CoV-2. A reminder: these are preliminary reports that have not been peer-reviewed. They should not be regarded as conclusive, guide clinical practice/health-related behavior, or be reported in news media as established information.

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

8775 Articles (6884 medRxiv, 1891 bioRxiv)

Most recent first

Page 1: Articles 1-10 | Next ↻

Introduction of two prolines and removal of the polybasic cleavage site leads to optimal efficacy of a recombinant spike based SARS-CoV-2 vaccine in the mouse model

Amanat, F., Strohmeier, S., Rathnasinghe, R., Schotsaert, M., Coughlan, L., Garcia-Sastre, A., Krammer, F.

10.1101/2020.09.16.300970 — Posted: 2020-09-18

Mutational signatures in countries affected by SARS-CoV-2: Implications in host-pathogen interactome

Rahman, S. A., Singh, J., Singh, H., Hasnain, S. E.

10.1101/2020.09.17.301614 — Posted: 2020-09-17

Subject Areas

All Articles

Addiction Medicine

Allergy and Immunology

Anesthesia

Cardiovascular Medicine

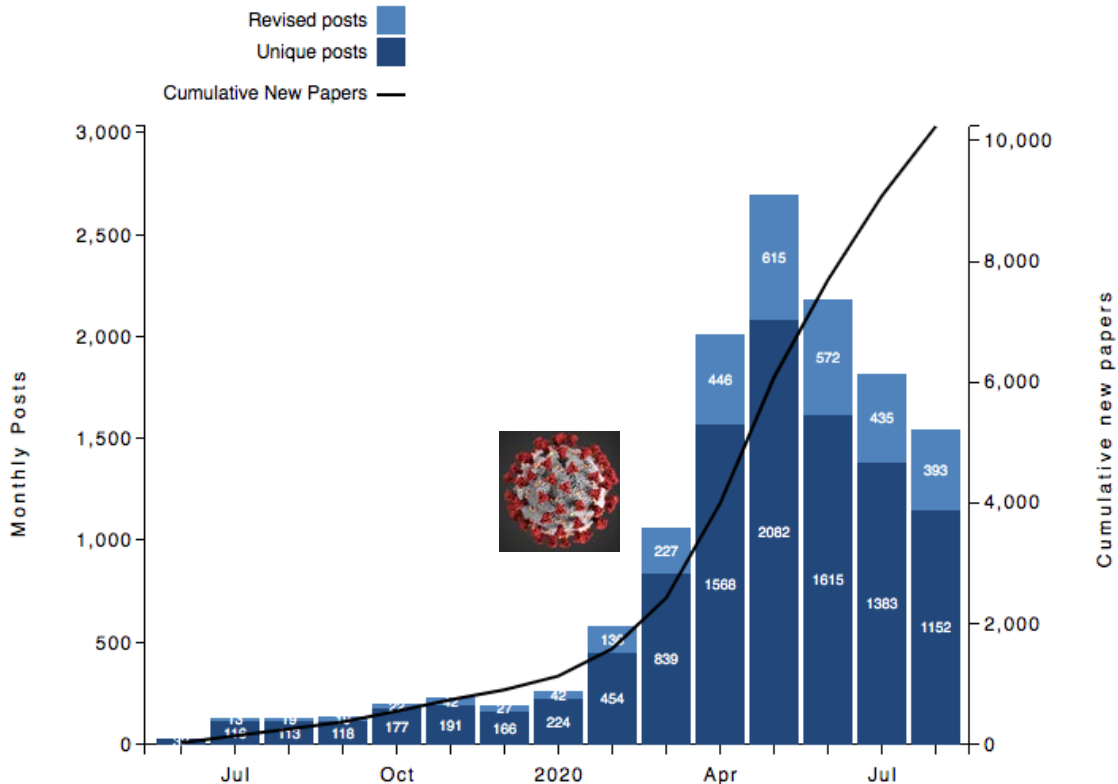
Dentistry and Oral Medicine

Dermatology

Emergency Medicine

Endocrinology (including Diabetes Mellitus and Metabolic Disease)

Monthly posted:



Daily submitted: ->

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
9	20	45	92	77	59	57	52



medRxiv submission requirements

- Original clinical/health research, including clinical trials, observational or qualitative research, quality improvement and implementation, policy studies, and medical education
- Systematic reviews and meta-analyses
- Methodological research
- Clinical study Protocols
- Not commentaries, editorials, opinion pieces, essays, letters to editors, narrative reviews, case reports
- Follow ICMJE guidance
- Funding and competing interests statements
- Statement of IRB / ethics committee oversight
- Study registration when applicable (e.g. ClinicalTrials.gov; PROSPERO)
- Data availability statement
- EQUATOR Network reporting guidelines checklists



medRxiv: risk mitigation

Is it nonsense?

Is it non-science?

Is it a paper?

Is it research?

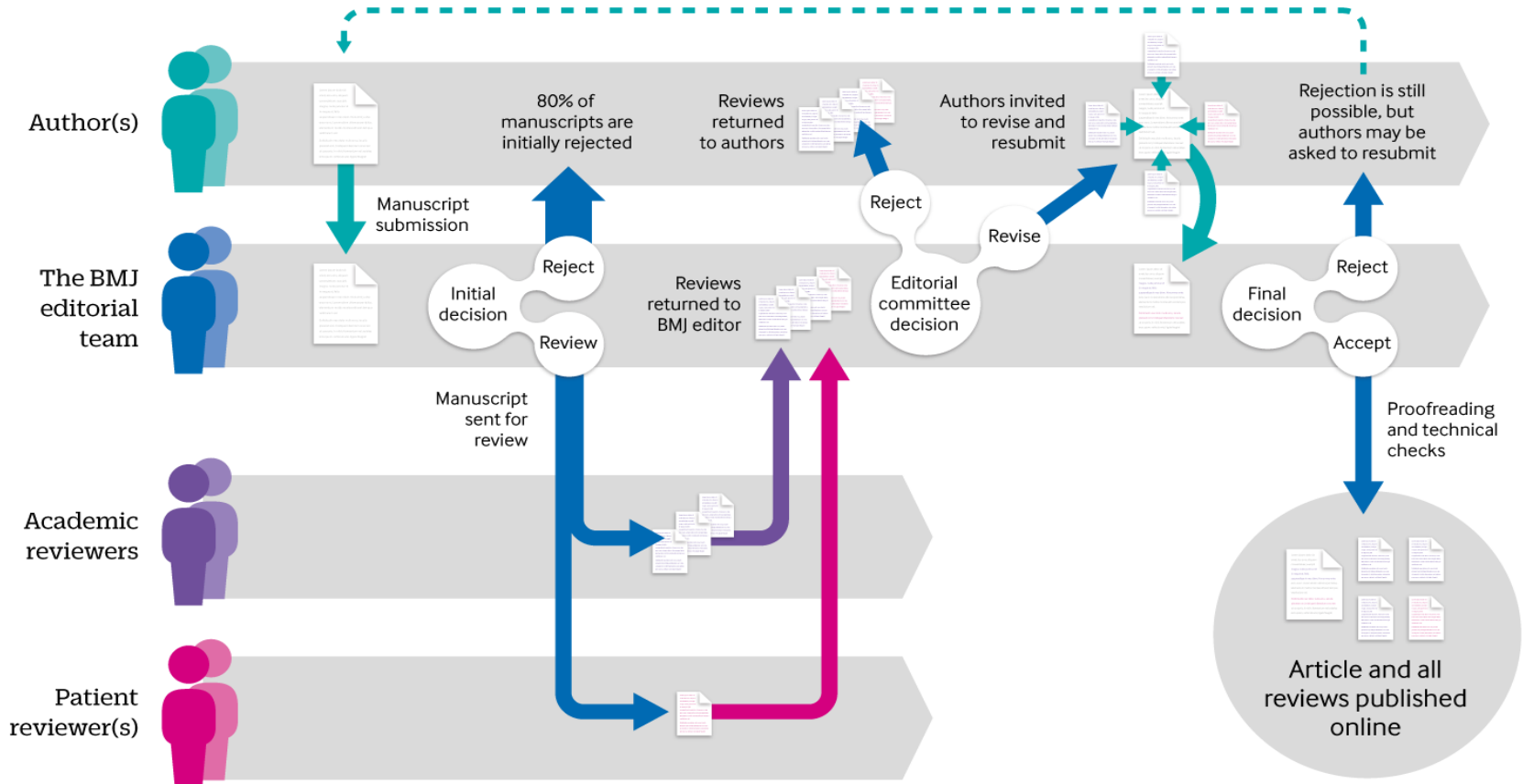
Is it plagiarized?

Is it a health threat?

***Is there a benefit to sharing
now vs. after peer review?***

- 1 Author undertakings
- 2 Automated check
- 3 CSHL Check
- 4 medRxiv Affiliate check
- 5 Escalation 1- experienced clinician-editor(s)
- 6 Escalation 2 - medRxiv leadership
- 7 Posting and public discussion

Outline of **thebmj** review process



Date: Tue, 16 Jun 2020 at 15:51

Subject: FOR IMMEDIATE RELEASE: WORLD FIRST CORONAVIRUS TREATMENT APPROVED FOR NHS USE BY GOVERNMENT

To:

****FOR IMMEDIATE RELEASE****

Effect of Dexamethasone in Hospitalized Patients with COVID-19: Preliminary Report

[Comments \(17\)](#)

[Previous](#)

Posted June 22, 2020.

ORIGINAL ARTICLE

Dexamethasone in Hospitalized Patients with Covid-19 — Preliminary Report

The RECOVERY Collaborative Group*

[Article](#) [Figures/Media](#)

[Metrics](#)

July 17, 2020

DOI: 10.1056/NEJMoa2021436

[39 References](#) [89 Citing Articles](#)

[Related Articles](#)



Preprint withdrawals; journal retractions

The authors have withdrawn this manuscript because of the controversy about hydroxychloroquine and potential changes in results after peer-review, the authors intend to share their results in formal publication. Therefore, the authors do not wish this work to be cited as reference for the project. If you have any questions, please contact the corresponding author.

medRxiv THE PREPRINT SERVER FOR HEALTH SCIENCES

CSH Cold Spring Harbor Laboratory | BMJ | Yale

HOME | ABOUT

Search

WITHDRAWN [Comments \(1\)](#)

Treatment Response to Hydroxychloroquine, Lopinavir/Ritonavir, and Antibiotics for Moderate COVID 19: A First Report on the Pharmacological Outcomes from South Korea

Min Seo Kim, Soon-Woo Jang, Yu-Kyung Park, Bong-ok Kim, Tae-Ho Hwang, Seok Ho Kang, Won Jun Kim, Hea-Woon Park, Wonjong Yang, Joonyoung Jang, Min Ho An
 doi: <https://doi.org/10.1101/2020.05.13.20094193>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Abstract | **Info/History** | Metrics | [Preview PDF](#)

ARTICLE INFORMATION

doi: <https://doi.org/10.1101/2020.05.13.20094193>
 History: June 14, 2020.

ARTICLE VERSIONS

Version 1 (May 18, 2020 - 08:12).
 You are viewing Version 2, the most recent version of this article.

Copyright The copyright holder for this preprint is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. It is made available under a CC-BY-NC-ND 4.0 International license.

Posted 18 May,
Withdrawn 14 June

THE LANCET Log in Register

COMMENT | VOLUME 395, ISSUE 10240, P1820, JUNE 13, 2020

PDF [42 KB]

Retraction—Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis

[Mandeep R Mehra](#) [Frank Ruschitzka](#) [Amit N Patel](#)

Published: June 05, 2020 • DOI: [https://doi.org/10.1016/S0140-6736\(20\)31324-6](https://doi.org/10.1016/S0140-6736(20)31324-6) [Check for updates](#)

Reference

Article Info

Linked Articles

After publication of our *Lancet* Article,¹ several concerns were raised with respect to the veracity of the data and analyses conducted by Surgisphere Corporation and its founder and our co-author, Sapan Desai, in our publication. We launched an independent third-party peer review of Surgisphere with the consent of Sapan Desai to evaluate the origination of the database elements, to confirm the completeness of the database, and to replicate the analyses presented in the paper.

Published 22 May,
Retracted 5 June



Funder preprint mandates



What counts as a health emergency?

- Ebola
- Zika
- Covid-19

But not

- Cancer
- Parkinson's disease
- ...

<https://www.timeshighereducation.com/news/wellcome-mandates-publication-peer-review-health-crises>

Wellcome mandates publication before peer review in health crises

Organisation joins Bill and Melinda Gates Foundation in signing up to the Plan S open-access initiative

November 5, 2018

[Rachael Pells](#)

Twitter: [@rachaelpells](#)

One of the world's biggest research funders is to require research that could help to tackle disease outbreaks or other health emergencies to be published before peer review as part of a further step towards open science.

Releasing details of its new open-access policy, which comes into force in January 2020, the Wellcome Trust said that, "where there was a significant public health benefit to preprints being shared widely and rapidly", the research must be placed "on an approved platform that supports immediate publication of the complete manuscript" prior to peer review.

Robert Kiley, head of open research at Wellcome, told *Times Higher Education* that it was "clearly necessary" to bypass traditional journal publication processes if that allowed potentially life-saving research to be shared more quickly.

"We think there's real value in ensuring that once that work has been done, including some quality assurance, we get that research out there as soon as possible," he said.

Wellcome deliberately chose not to specify that preprints must be published in cases of a World Health Organisation declaration of emergency, "because that was too limiting", Mr Kiley added. "The WHO only declare that something is an epidemic when it spreads outside several countries – we want to apply this policy to all relevant cases," he said.

The funder will still expect papers to be published "in a more formal way with peer review" further down the line, but Mr Kiley stressed that disseminating data "on Zika, Ebola or whatever the next disease outbreak is as soon as possible – that is completely in line with our mission to improve world health".



Source: Getty

Crisis management: the Wellcome Trust's head of open research stressed that disseminating data on diseases such as Ebola is in line with its mission to improve world health



Rapid Recommendations; Living Systematic Reviews

thebmj covid-19 Research + Education + News & Views + Campaigns + Jobs +

Practice + Rapid Recommendations

A living WHO guideline on drugs for covid-19

BMJ 2020;370:doi:https://doi.org/10.1136/bmj.m3379 (Published 04 September 2020)
Cite this as: BMJ 2020;370:m3379

Visual summary of recommendation

Population
This recommendation applies only to people with these characteristics:
Patients with confirmed covid-19

Disease severity

Non-severe	Severe	Critical
Absence of signs of severe critical disease	SpO ₂ <90% on room air Respiratory rate >30 in adults Rapid respiratory rate in children Signs of severe respiratory distress	Requires life sustaining treatment Acute respiratory distress syndrome Septic Septic shock
Recommendation 2	Recommendation 1	

Interventions compared

Usual supportive care	Corticosteroids Suggested regimen	Acceptable alternative regimens
-----------------------	--------------------------------------	---------------------------------

Rapid Recommendations process step by step (with target times)



FAST TRACK

Response to this article

Data supplement

Print

Alerts & updates

Citation tools

Request permissions

Author citation

Add article to BMJ Portfolio

Email to a friend

Topics



Covid: the first preprinted epidemic. Will it help?

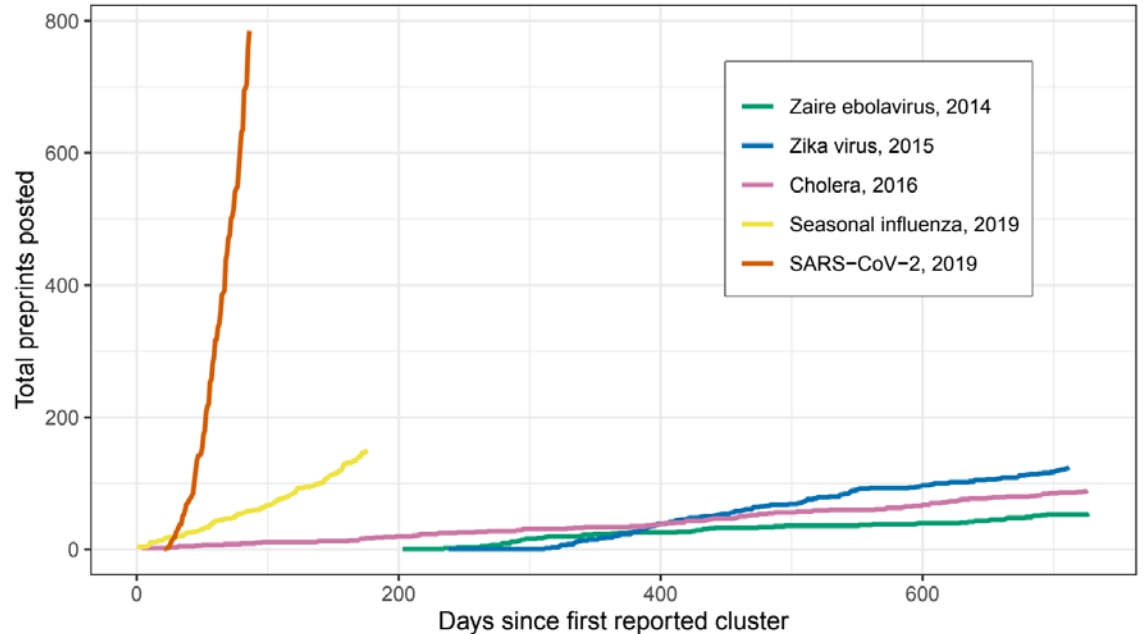
Waste in covid-19 research: how do we make the outpouring of research more effective?



Waste in covid-19 research

A deluge of poor quality research is sabotaging an effective evidence based response The medical research world is responding to the covid-19 pandemic...
© bmj.com

Paul Glasziou, Sharon Sanders, Tammy Hoffmann,
BMJ 2020;369:m1847 [doi: 10.1136/bmj.m1847](https://doi.org/10.1136/bmj.m1847)

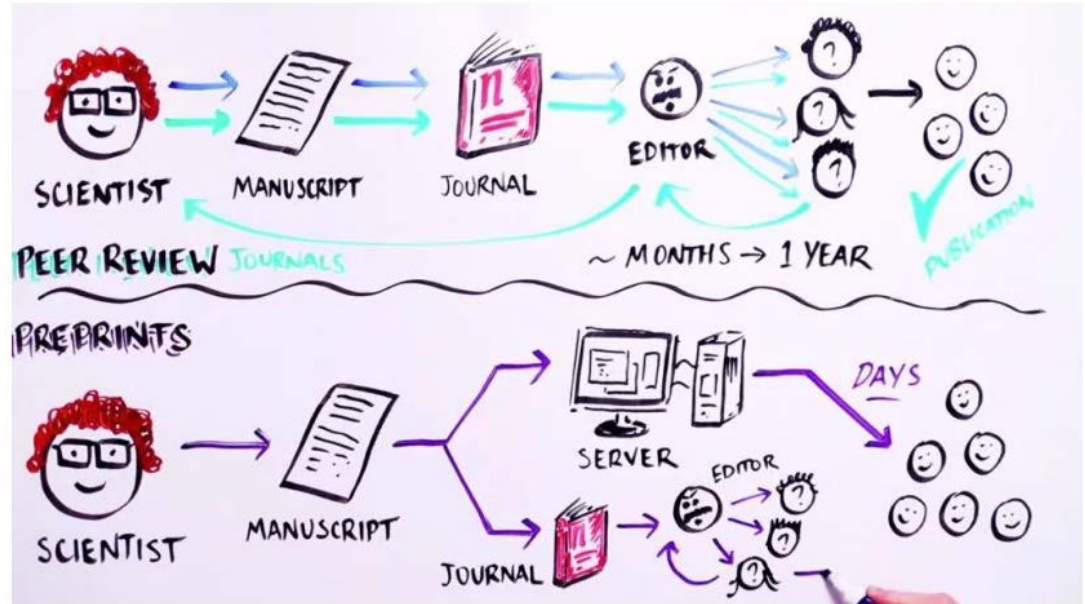


Thank you!

Web: bmj.com

Email: tbloom@bmj.com

Twitter: [@TheoBloom](https://twitter.com/TheoBloom)



<https://www.ibiology.org/biomedical-workforce/preprints/>

Preprint and Peer Reviewed Journals

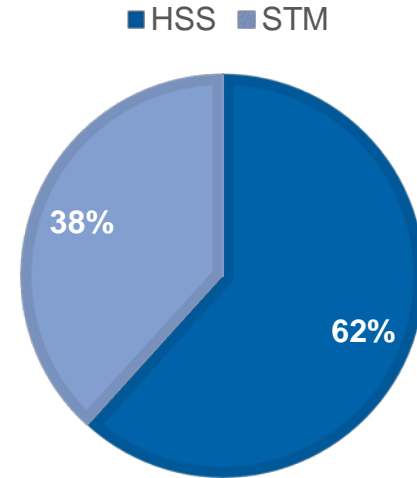
Allison Leung

Publisher, SAGE Publishing



A bit about SAGE

- Global, independent publishers 1,500 employees, 1,000+ journals, 900+ books
- 6 main offices: Los Angeles, London, New Delhi, Singapore, Melbourne, Toronto
- Majority HSS, but STM is quickly catching up



 **SAGE** journals



A bit about Advance

- Launched in 2018
- Focus on Social Science and Humanities
- Direct preprint to journal submissions
- Commenting and moderation



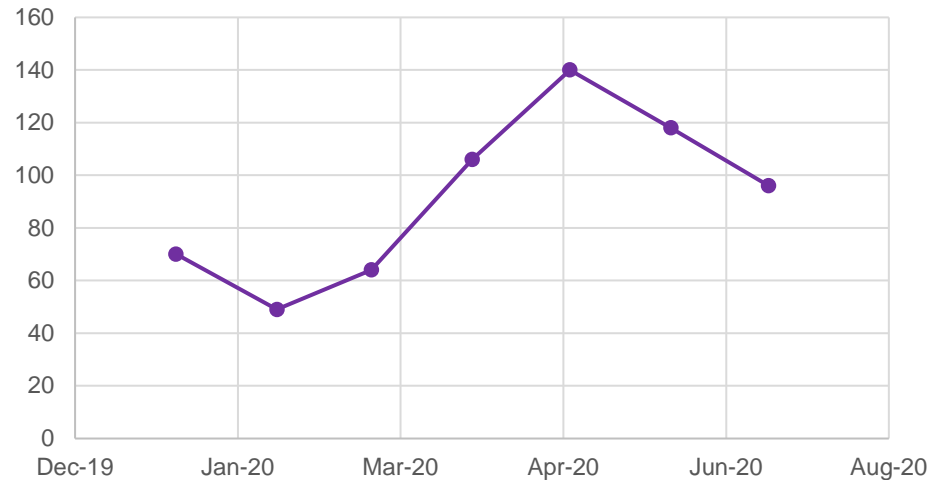


Preprints explosive growth



The Economist

Submissions received -- **Advance**





How do journals and preprints work together currently?



Direct submission to journals



Linking to final version



Simultaneous deposit to preprint

Read the peer-reviewed publication in *International Social Work*

COVID-19 and older adults in Africa: Social workers' utilization of mass media in enforcing policy change



How could journals and preprints work together in the future?



Comment or review sharing



Badging preprints




Sharing outcomes of ethics cases



What else?

BADGES

 Prescreen


PEER REVIEW TIMELINE

CURRENT STATUS: UNDER REVIEW


▼ Version 1

Posted 22 May, 2019


—

 Community comments: 2


—

 Review #2 received
Received 20 Aug, 2019


—

 Review #1 received
Received 31 Jul, 2019

—

 Reviewer #2 agreed
On 30 Jul, 2019

—

 Reviewers invited
Invitations sent on 30 Jul, 2019

Thank you!

Questions?

Contact me at: allison.leung@sagepub.com

NIH Preprint Pilot

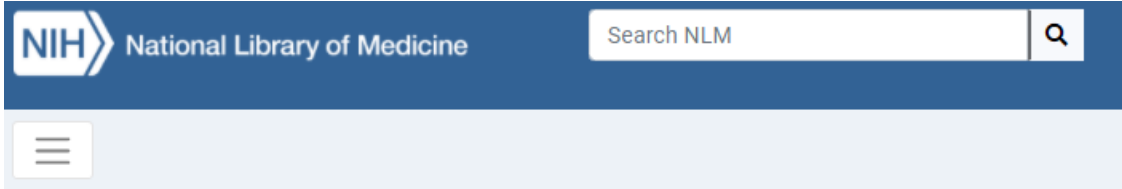
Jerry Sheehan, MS

Deputy Director

National Library of Medicine - National Institutes of Health



NIH Preprint Pilot



[Home](#) > [About the NLM](#) > [News & Events](#)

NIH launches preprint pilot to expand discovery of NIH-funded research

June 9, 2020

First phase on COVID-19 related preprints

The National Institutes of Health is launching the first phase of a pilot project designed to test the viability of making preprints resulting from NIH-funded research searchable in [PubMed Central \(PMC\)](#), a widely-used digital archive of full-text articles and, by extension, discoverable in [PubMed](#), a database containing more than 30 million citations and abstracts of biomedical literature. The [NIH Preprint Pilot](#), a project of NIH's National Library of Medicine (NLM), is intended to increase early discoverability of NIH-supported research results, maximizing the possible impact of the research. Phase one of the pilot will focus on preprints relating to the COVID-19 pandemic.

Scope

- NIH-funded research
- Select pre-print servers
- Focus on COVID-19

Preservation & Access

- Full text in PubMed Central
- Citation in PubMed



Preprints in NLM's PubMed Central (PMC)

The screenshot shows the NLM PubMed Central search results for 'covid'. The interface includes a search bar with 'covid' entered, a search button, and a 'Filter your results' section on the right. The search results show 942 items, with the first item being a preprint. Annotations with red arrows point to the 'Preprints' filter, the 'Preprint' indicator in the first result, and the 'All (942)' filter count.

NCBI Resources How To Sign in to NCBI

PMC US National Library of Medicine National Institutes of Health

Search covid

COVID-19 is an emerging, rapidly evolving situation. Get the latest public health information from CDC: <https://www.coronavirus.gov>. Get the latest research from NIH: <https://www.nih.gov/coronavirus>. Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>.

Article attributes clear Display Settings: Summary, 20 per page, Sorted by Default order Send to: Filter your results:

Associated Data Author manuscripts Digitized back issues MEDLINE journals Open access

Preprints Retracted

Text availability Include embargoed articles

Publication date 1 year 5 years 10 years Custom range...

Research Funder NIH AHRQ ACL

Search results

Items: 1 to 20 of 942

Filters activated: Preprints. Clear all to show 52542 items.

1. [Deep immune profiling of COVID-19 patients reveals patient heterogeneity and distinct immunotypes with implications for therapeutic interventions](#)

Divij Mathew, Josephine R. Giles, Amy E. Baxter, Allison R. Greenplate, Jennifer E. Wu, Cécile Alanio, Derek A. Oldridge, Leticia Kuri-Cervantes, M. Betina Pampena, Kurt D'Andrea, Sasikanth Manne, Zeyu Chen, Yinghui Jane Huang, John P. Reilly, Ariel R. Weisman, Caroline A.G. Ittner, Oliva Kuthuru, Jeanette Dougherty, Kito Nzingha, Nicholas Han, Justin Kim, Ajinkya Pattekar, Eileen C. Goodwin, Elizabeth M. Anderson, Madison E. Weirick, Sigrid Gouma, Claudia P. Arevalo, Marcus J. Bolton, Fang Chen, Simon F. Lacey, Scott E. Hensley, Sokratis Apostolidis, Alexander C. Huang, Laura A. Vella, The UPenn COVID Processing Unit, Michael R. Betts, Nuala J. Meyer, E. John Wherry

Version 1. bioRxiv **Preprint**. 2020 May 23. doi: 10.1101/2020.05.20.106401

PMCID: PMC7263500

[Abstract](#) [Article](#) [PDF-23M](#) [Citation](#)

All (942)

[NIH grants \(77\)](#)

Embargoed (0)

Manage Filters

Find related data Database: Select Find items

Search details covid[All Fields] AND preprint[filter]

Current Count

Preprint Filter

Preprint indicator



Guardrails: Preprint Display in PMC

NCBI Resources How To Sign in to NCBI

PMC US National Library of Medicine National Institutes of Health

COVID-19 is an emerging, rapidly evolving situation. Get the latest public health information from CDC: <https://www.coronavirus.gov>. Get the latest research from NIH: <https://www.nih.gov/coronavirus>. Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>.

Journal List > bioRxiv > PMC7386492

NIH National Institutes of Health Turning Discovery Into Health

Preprint Made publicly accessible prior to peer review

Version 3. [bioRxiv](#). Preprint. NaN NaN [revised 2020 Sep 14]. PMID: PMC7386492
doi: [10.1101/2020.07.16.206680](https://doi.org/10.1101/2020.07.16.206680) Other versions PMID: [32743575](#)

This article is a preprint.
Preprints have not been peer reviewed.
To learn more about preprints in PMC see: [NIH Preprint Pilot](#).

Simulations support the interaction of the SARS-CoV-2 spike protein with nicotinic acetylcholine receptors

A. Sofia F. Oliveira,^a Amaury Avila Ibarra,^b Isabel Bermudez,^c Lorenzo Casalino,^d Zied Gaieb,^d Deborah K. Shoemark,^e Timothy Gallagher,^a Richard B. Sessions,^e Rommie E. Amaro,^d and Adrian J. Mulholland^{a,*}

Author information Copyright and License information [Disclaimer](#)

The complete version history of this preprint is available at [bioRxiv](#).

Formats: Article | [PDF \(1.2M\)](#) | [Citation](#)

Share Facebook Twitter Google+

Save items Add to Favorites

Similar articles in PubMed

Nicotinic Cholinergic System and COVID-19: In Silico Identification of an Interaction between SARS- [Int J Mol Sci. 2020]

Modeling subtype-selective agonists binding with alpha4beta2 and alpha7 nicotinic acetylcholine receptors. *effec [J Med Chem. 2006]*

Multiple interaction regions in the orthosteric ligand binding domain of the $\alpha 7$ neuronal nicotinic acet [J Chem Inf Model. 2012]

2-(5-[¹¹C]Methyl-hexahydro-pyrrolo[3,4-c]pyrrol-2-yl)-xanthen-9-one [Molecular Imaging and Contrast...]

2-[¹¹C]Methyl-5-[6-phenylpyridazine-3-yl]octahydro-pyrrolo[3,4-c]pyrrole [Molecular Imaging and Contrast...]

See reviews... See all...

Prominent banners

Link to info about preprints and preprint pilot

Link to preprint server



Putting Preprints in Context

Journal articles:

37,129

2,333 identified by NLM as NIH supported

Preprints:

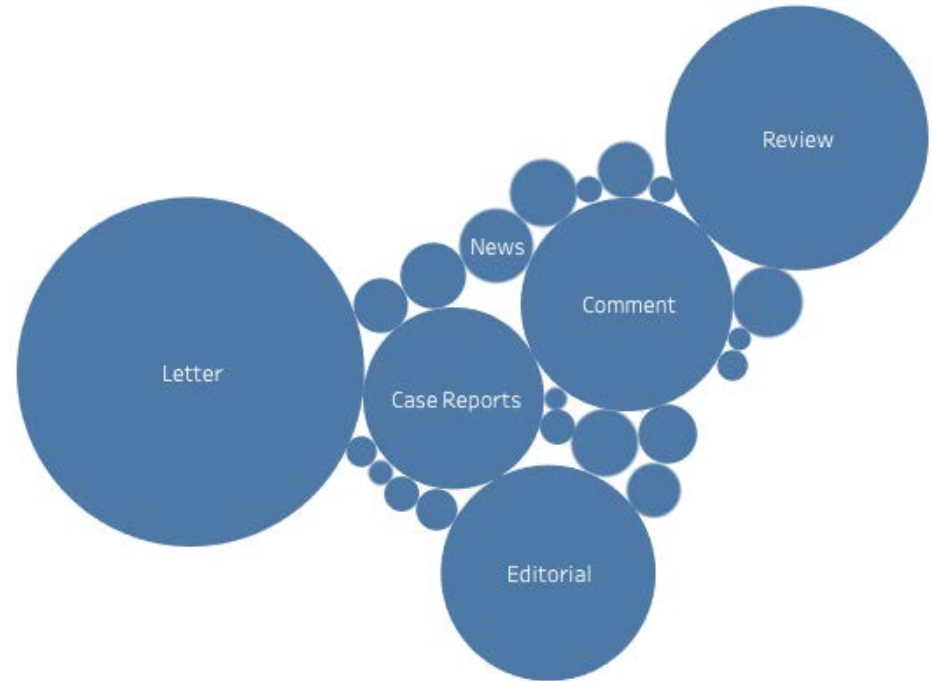
17,305

1,122 identified by NLM as NIH supported

Data from 30 Sept. 2020.
Publication type data available for 78% of included journal articles on this data.

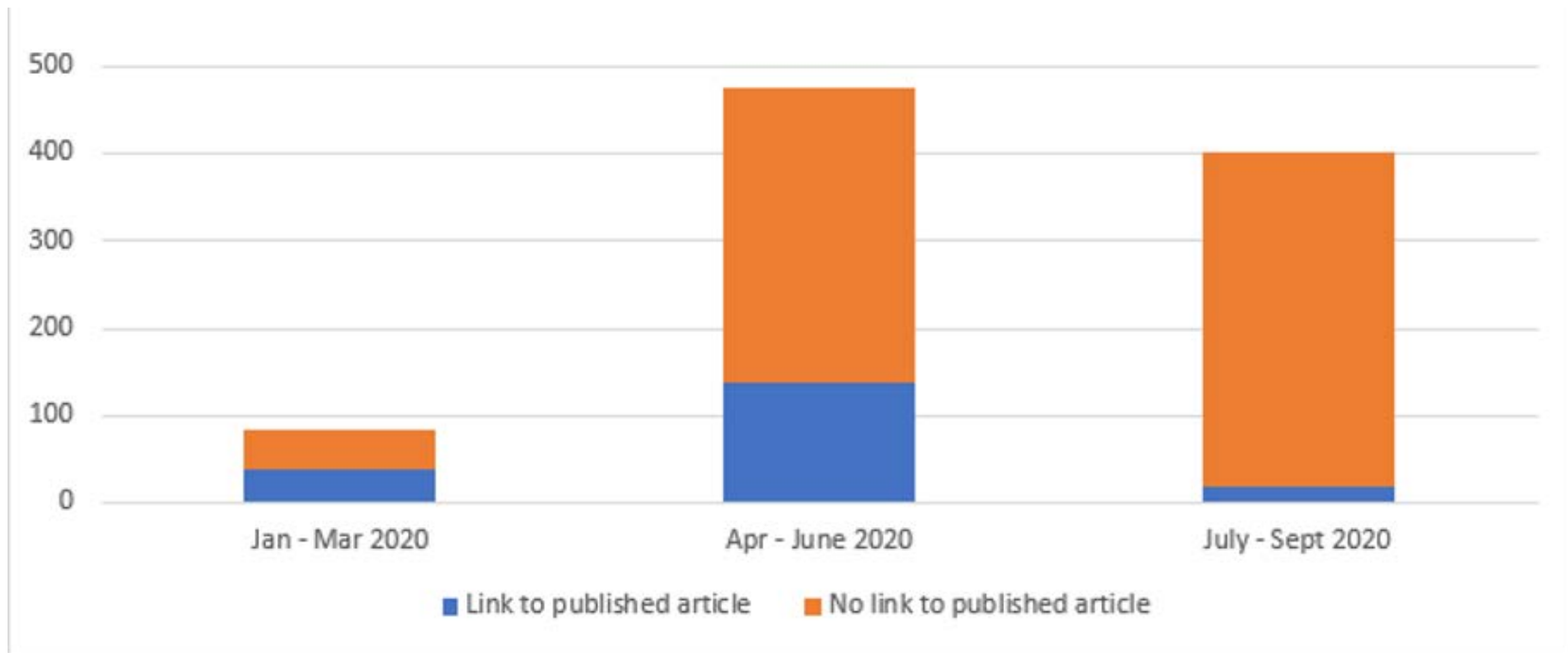
Journal Article Publication Type Breakdown (n=29,107)

Article Publication Type	Count
Case Reports	2,657
Clinical Trial	41
Clinical Trial Protocol	92
Comment	3,645
Comparative Study	365
Editorial	3,741
English Abstract	281
Erratum	236
Evaluation Study	139
Historical article	99
Interview	49
Introductory Journal Artic..	77
Letter	9,789
Meta-Analysis	242
Multicenter Study	350
News	442
Observational Study	367
Personal Narrative	59
Practice Guideline	257
Randomized Controlled Tr..	56
Review	5,605
Systematic Review	400
Validation Study	42
Video-Audio Media	76





Preprints: Prelude to Publication?





Making Effective Use of Preprints

U.S. Department of Health & Human Services

NIH National Institutes of Health
Turning Discovery Into Health

Search NIH

NIH Employee Intranet | Staff Directory | En Español

Health Information | Grants & Funding | News & Events | Research & Training | Institutes at NIH | About NIH

COVID-19 is an emerging, rapidly evolving situation.

• Get the latest public health information from CDC » • Get the latest research information from NIH » • NIH staff guidance on coronavirus (NIH Only) »

Home » About NIH » What We Do » Science, Health, and Public Trust

Science, Health, and Public Trust

About Science, Health, and Public Trust

Perspectives

Tools

Resources

Submit a Suggestion

Subscribe

August 19, 2020

Making Effective Use of Preprints

Tips for Communicators

✉ 📧 📧 📧 📧

By Jerry Sheehan, Deputy Director, NIH's National Library of Medicine (NLM) and Kathryn Funk, MLIS, Program Manager for NLM's PubMed Central.

Preprints are gaining considerable attention lately as biomedical researchers seek to quickly disseminate the latest research findings related to COVID-19, the disease caused by the novel coronavirus. Posting preprints to public repositories is not a new practice in science. Scientists in other disciplines, such as physics, have followed this approach for decades. But wider adoption in the biomedical sciences is more recent.

Preprints are research manuscripts that have not been formally published nor critiqued and refined through the peer review process. When made publicly available, they can play an important role in accelerating the dissemination of emerging research. The COVID-19 pandemic has brought early research results shared in preprints to the forefront, and coverage of preprints in the news has also increased.



Donald Bliss, National Library of Medicine

Tips for Communicators

- When citing preprints, be clear about it
- Approach preprint findings with a skeptical eye
- Continue to check if the preprint has been revised or published
- Don't be tempted by the allure of a single study
- Remember that preprints only relay preliminary information

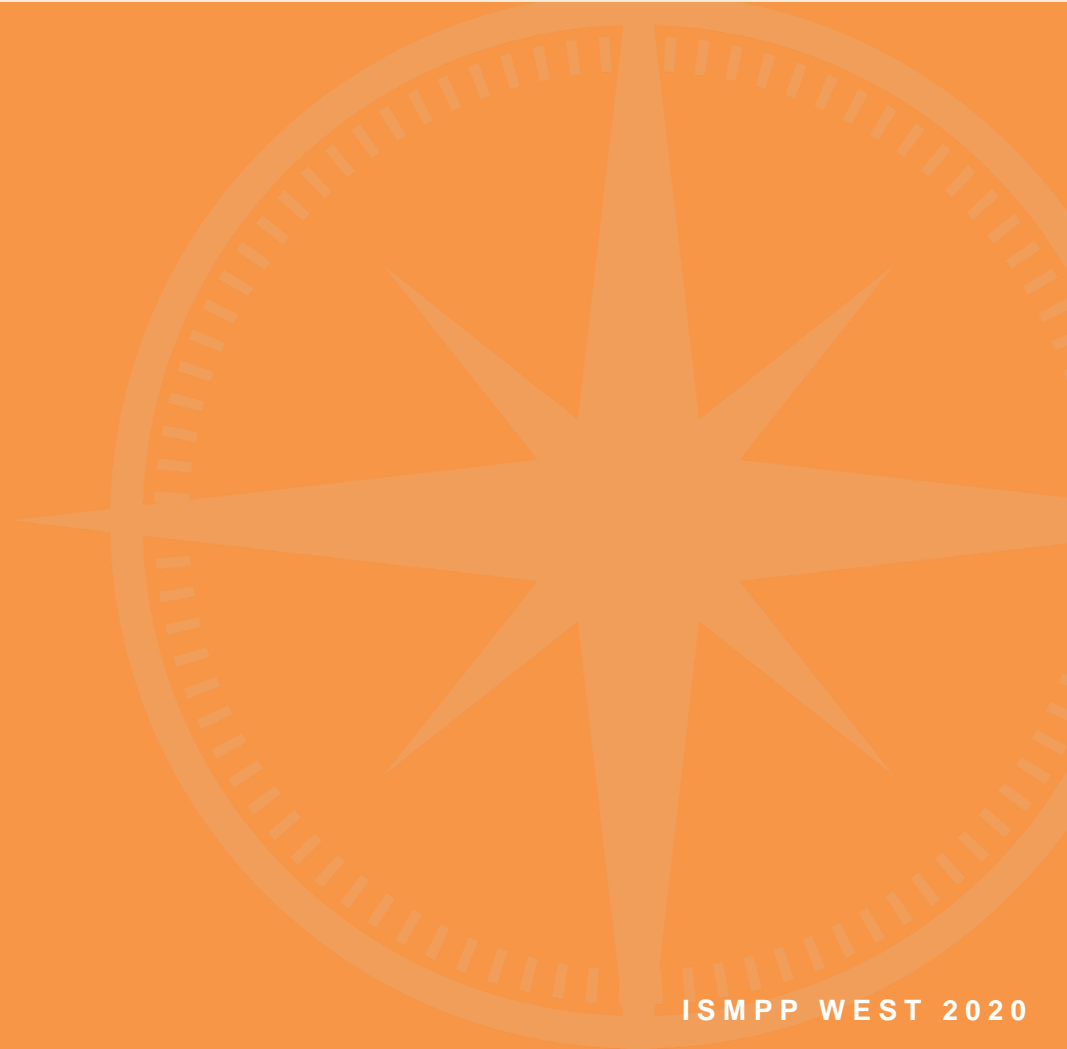


WHAT'S
NEXT?

Looking Ahead

- Confirm scalability of current workflows across spectrum of NIH research
- Review pilot preprint server eligibility criteria
- Research on preprint practices
- Other?

Thank you!



The Sinai Immunology Review Project Experience

Nicolas Vabret, PhD

Assistant Professor, Medicine, Hematology and Medical Oncology at Mount Sinai

Miriam Merad, MD, PhD

Director, Precision Immunology Institute, Mount Sinai School of Medicine



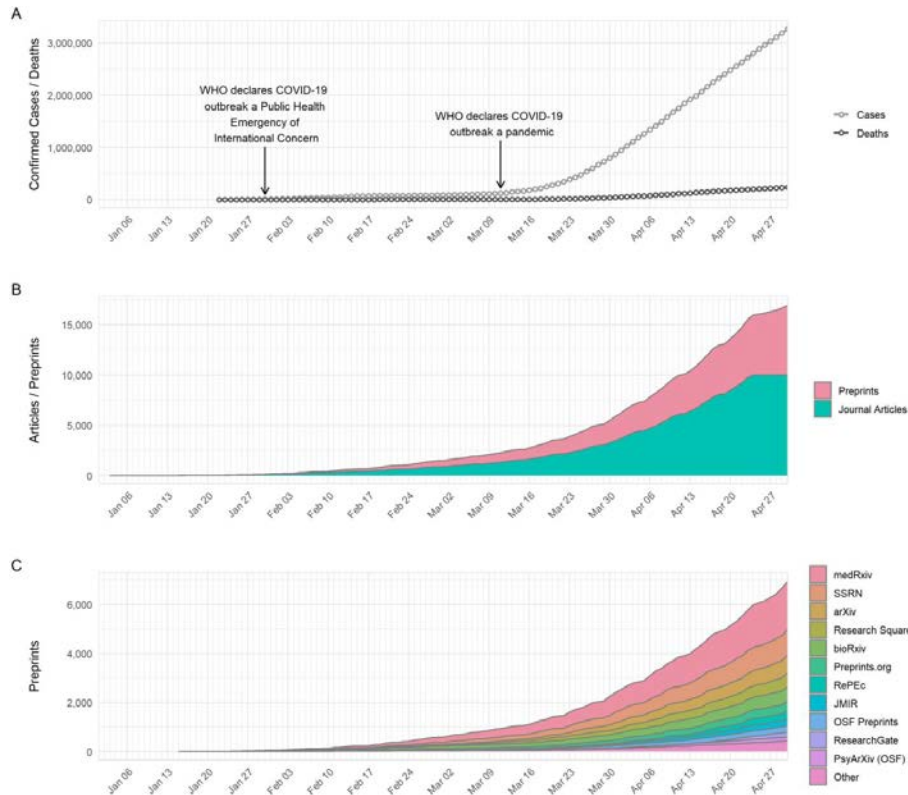
@MiriamMerad



@Neoviral



Explosion of preprints during COVID-19



- 9000+ COVID19 preprints on BioRxiv/MedRxiv
- Importance to provide rapid scientific responses
 - Inform the public
 - Help policy decision
 - Sort Signal from Noise
- New disease: lack of expert reviewer pool



The Sinai Immunology Review Project Experience

9000 preprints screened for Immunological content and relevance



PrISM: Immunology Institute at Mount Sinai

80+ PhD student and postdoc & 20 faculty members with strong Immunology expertise who joined the project

 @SinaiImmunol



The Sinai Immunology Review Project Experience



9000 preprints screened for Immunological content and relevance

200+ reviews posted online

Comment section

System-based immunology from acute to recovery phase of severe COVID-19
 Rodriguez et al. medRxiv 2020.06.15.20121982

Keywords
 + COVID-19
 + cytokine
 + immunotherapy

Manuscript
 In the preprint Rodriguez et al. performed longitudinal analysis of immunological responses in blood from 39 COVID-19 patients using mass cytometry (CyTOF) and Olink to better understand the mechanisms behind hyperinflammation in severe COVID-19. 17 subjects were re-assessed 22 days recovered patients. CyTOF was used to track immune cell populations over time while Olink was used to measure 180 plasma biomarkers from the acute disease phase and recovery. Interestingly, none of the 39 patients in this study received any immunomodulatory therapies and therefore the data reflect the natural course of COVID-19 disease.

Study Design
 Several immune cell populations changed with COVID-19 disease progression. Notably, there was a decrease in the naive phase and increase with recovery. In contrast, activated CD45, CD45RA, and CD45RO cell subsets all increased as recovery progressed. CD45RA and CD45RO were present at about 2 weeks in disease progression, and the highest immune event. The proportion of CD45RA+ CD45RO+ memory T cells and CD45RO+ memory T cells. To further study the phenotype of the re-assessed patients seen with disease recovery, the authors used Perturb-Seq gene activation to analyze changes in transcription on a single cell level. The authors report a biased expansion of CD45RA+ associated, co-receptor with IFN levels on day 5-6.

Conclusions
 To determine the immunological correlates with IgG response, the authors used a mixed effect model using immune cell populations and levels of plasma protein biomarkers. IFN γ , IL-6, CXCL10, IL-17, and MCP-1 negatively correlated with IgG response while CXCL10, IL-6, IFN γ , CXCL13, IL-17, IL-18, and CXCL16 positively correlated with IgG response.

Limitations
 First, the authors had a multicenter laboratory of recently used methods before analysis. This is a major limitation because levels of IL-6, MCP-1, IFN γ , CXCL13, IL-17, IL-18, and IFN γ were not stable. Second, the authors did not measure other cytokines, chemokines, and other immune cell populations.

References
 Though the authors do a good job of balancing the sex ratio in their patient population, age range between hospitalized patients 67 and 80 recovered patients 68-80 may be contributing to immune phenotype. Median age of each group should be provided. While the authors state that their study requires longitudinal immune monitoring from acute to recovery phase, it is unclear when of the hospitalized patients, if any, were recruited through social networks. The authors' results would be better supported by a panel analysis of hospitalized patients during their hospital course with the same methods after recovery, rather than a mixture of acute and recovered patients.

Significance
 The dataset in immune cell populations over time reported in Fig. 2 would benefit from statistical analysis to derive which changes are statistically significant, instead, several of the biomarkers, such as IL-6, CXCL10, CXCL13, CXCL16, CXCL17, CXCL18, CXCL19, CXCL20, CXCL21, CXCL22, CXCL23, CXCL24, CXCL25, CXCL26, CXCL27, CXCL28, CXCL29, CXCL30, CXCL31, CXCL32, CXCL33, CXCL34, CXCL35, CXCL36, CXCL37, CXCL38, CXCL39, CXCL40, CXCL41, CXCL42, CXCL43, CXCL44, CXCL45, CXCL46, CXCL47, CXCL48, CXCL49, CXCL50, CXCL51, CXCL52, CXCL53, CXCL54, CXCL55, CXCL56, CXCL57, CXCL58, CXCL59, CXCL60, CXCL61, CXCL62, CXCL63, CXCL64, CXCL65, CXCL66, CXCL67, CXCL68, CXCL69, CXCL70, CXCL71, CXCL72, CXCL73, CXCL74, CXCL75, CXCL76, CXCL77, CXCL78, CXCL79, CXCL80, CXCL81, CXCL82, CXCL83, CXCL84, CXCL85, CXCL86, CXCL87, CXCL88, CXCL89, CXCL90, CXCL91, CXCL92, CXCL93, CXCL94, CXCL95, CXCL96, CXCL97, CXCL98, CXCL99, CXCL100, CXCL101, CXCL102, CXCL103, CXCL104, CXCL105, CXCL106, CXCL107, CXCL108, CXCL109, CXCL110, CXCL111, CXCL112, CXCL113, CXCL114, CXCL115, CXCL116, CXCL117, CXCL118, CXCL119, CXCL120, CXCL121, CXCL122, CXCL123, CXCL124, CXCL125, CXCL126, CXCL127, CXCL128, CXCL129, CXCL130, CXCL131, CXCL132, CXCL133, CXCL134, CXCL135, CXCL136, CXCL137, CXCL138, CXCL139, CXCL140, CXCL141, CXCL142, CXCL143, CXCL144, CXCL145, CXCL146, CXCL147, CXCL148, CXCL149, CXCL150, CXCL151, CXCL152, CXCL153, CXCL154, CXCL155, CXCL156, CXCL157, CXCL158, CXCL159, CXCL160, CXCL161, CXCL162, CXCL163, CXCL164, CXCL165, CXCL166, CXCL167, CXCL168, CXCL169, CXCL170, CXCL171, CXCL172, CXCL173, CXCL174, CXCL175, CXCL176, CXCL177, CXCL178, CXCL179, CXCL180, CXCL181, CXCL182, CXCL183, CXCL184, CXCL185, CXCL186, CXCL187, CXCL188, CXCL189, CXCL190, CXCL191, CXCL192, CXCL193, CXCL194, CXCL195, CXCL196, CXCL197, CXCL198, CXCL199, CXCL200, CXCL201, CXCL202, CXCL203, CXCL204, CXCL205, CXCL206, CXCL207, CXCL208, CXCL209, CXCL210, CXCL211, CXCL212, CXCL213, CXCL214, CXCL215, CXCL216, CXCL217, CXCL218, CXCL219, CXCL220, CXCL221, CXCL222, CXCL223, CXCL224, CXCL225, CXCL226, CXCL227, CXCL228, CXCL229, CXCL230, CXCL231, CXCL232, CXCL233, CXCL234, CXCL235, CXCL236, CXCL237, CXCL238, CXCL239, CXCL240, CXCL241, CXCL242, CXCL243, CXCL244, CXCL245, CXCL246, CXCL247, CXCL248, CXCL249, CXCL250, CXCL251, CXCL252, CXCL253, CXCL254, CXCL255, CXCL256, CXCL257, CXCL258, CXCL259, CXCL260, CXCL261, CXCL262, CXCL263, CXCL264, CXCL265, CXCL266, CXCL267, CXCL268, CXCL269, CXCL270, CXCL271, CXCL272, CXCL273, CXCL274, CXCL275, CXCL276, CXCL277, CXCL278, CXCL279, CXCL280, CXCL281, CXCL282, CXCL283, CXCL284, CXCL285, CXCL286, CXCL287, CXCL288, CXCL289, CXCL290, CXCL291, CXCL292, CXCL293, CXCL294, CXCL295, CXCL296, CXCL297, CXCL298, CXCL299, CXCL300, CXCL301, CXCL302, CXCL303, CXCL304, CXCL305, CXCL306, CXCL307, CXCL308, CXCL309, CXCL310, CXCL311, CXCL312, CXCL313, CXCL314, CXCL315, CXCL316, CXCL317, CXCL318, CXCL319, CXCL320, CXCL321, CXCL322, CXCL323, CXCL324, CXCL325, CXCL326, CXCL327, CXCL328, CXCL329, CXCL330, CXCL331, CXCL332, CXCL333, CXCL334, CXCL335, CXCL336, CXCL337, CXCL338, CXCL339, CXCL340, CXCL341, CXCL342, CXCL343, CXCL344, CXCL345, CXCL346, CXCL347, CXCL348, CXCL349, CXCL350, CXCL351, CXCL352, CXCL353, CXCL354, CXCL355, CXCL356, CXCL357, CXCL358, CXCL359, CXCL360, CXCL361, CXCL362, CXCL363, CXCL364, CXCL365, CXCL366, CXCL367, CXCL368, CXCL369, CXCL370, CXCL371, CXCL372, CXCL373, CXCL374, CXCL375, CXCL376, CXCL377, CXCL378, CXCL379, CXCL380, CXCL381, CXCL382, CXCL383, CXCL384, CXCL385, CXCL386, CXCL387, CXCL388, CXCL389, CXCL390, CXCL391, CXCL392, CXCL393, CXCL394, CXCL395, CXCL396, CXCL397, CXCL398, CXCL399, CXCL400, CXCL401, CXCL402, CXCL403, CXCL404, CXCL405, CXCL406, CXCL407, CXCL408, CXCL409, CXCL410, CXCL411, CXCL412, CXCL413, CXCL414, CXCL415, CXCL416, CXCL417, CXCL418, CXCL419, CXCL420, CXCL421, CXCL422, CXCL423, CXCL424, CXCL425, CXCL426, CXCL427, CXCL428, CXCL429, CXCL430, CXCL431, CXCL432, CXCL433, CXCL434, CXCL435, CXCL436, CXCL437, CXCL438, CXCL439, CXCL440, CXCL441, CXCL442, CXCL443, CXCL444, CXCL445, CXCL446, CXCL447, CXCL448, CXCL449, CXCL450, CXCL451, CXCL452, CXCL453, CXCL454, CXCL455, CXCL456, CXCL457, CXCL458, CXCL459, CXCL460, CXCL461, CXCL462, CXCL463, CXCL464, CXCL465, CXCL466, CXCL467, CXCL468, CXCL469, CXCL470, CXCL471, CXCL472, CXCL473, CXCL474, CXCL475, CXCL476, CXCL477, CXCL478, CXCL479, CXCL480, CXCL481, CXCL482, CXCL483, CXCL484, CXCL485, CXCL486, CXCL487, CXCL488, CXCL489, CXCL490, CXCL491, CXCL492, CXCL493, CXCL494, CXCL495, CXCL496, CXCL497, CXCL498, CXCL499, CXCL500, CXCL501, CXCL502, CXCL503, CXCL504, CXCL505, CXCL506, CXCL507, CXCL508, CXCL509, CXCL510, CXCL511, CXCL512, CXCL513, CXCL514, CXCL515, CXCL516, CXCL517, CXCL518, CXCL519, CXCL520, CXCL521, CXCL522, CXCL523, CXCL524, CXCL525, CXCL526, CXCL527, CXCL528, CXCL529, CXCL530, CXCL531, CXCL532, CXCL533, CXCL534, CXCL535, CXCL536, CXCL537, CXCL538, CXCL539, CXCL540, CXCL541, CXCL542, CXCL543, CXCL544, CXCL545, CXCL546, CXCL547, CXCL548, CXCL549, CXCL550, CXCL551, CXCL552, CXCL553, CXCL554, CXCL555, CXCL556, CXCL557, CXCL558, CXCL559, CXCL560, CXCL561, CXCL562, CXCL563, CXCL564, CXCL565, CXCL566, CXCL567, CXCL568, CXCL569, CXCL570, CXCL571, CXCL572, CXCL573, CXCL574, CXCL575, CXCL576, CXCL577, CXCL578, CXCL579, CXCL580, CXCL581, CXCL582, CXCL583, CXCL584, CXCL585, CXCL586, CXCL587, CXCL588, CXCL589, CXCL590, CXCL591, CXCL592, CXCL593, CXCL594, CXCL595, CXCL596, CXCL597, CXCL598, CXCL599, CXCL600, CXCL601, CXCL602, CXCL603, CXCL604, CXCL605, CXCL606, CXCL607, CXCL608, CXCL609, CXCL610, CXCL611, CXCL612, CXCL613, CXCL614, CXCL615, CXCL616, CXCL617, CXCL618, CXCL619, CXCL620, CXCL621, CXCL622, CXCL623, CXCL624, CXCL625, CXCL626, CXCL627, CXCL628, CXCL629, CXCL630, CXCL631, CXCL632, CXCL633, CXCL634, CXCL635, CXCL636, CXCL637, CXCL638, CXCL639, CXCL640, CXCL641, CXCL642, CXCL643, CXCL644, CXCL645, CXCL646, CXCL647, CXCL648, CXCL649, CXCL650, CXCL651, CXCL652, CXCL653, CXCL654, CXCL655, CXCL656, CXCL657, CXCL658, CXCL659, CXCL660, CXCL661, CXCL662, CXCL663, CXCL664, CXCL665, CXCL666, CXCL667, CXCL668, CXCL669, CXCL670, CXCL671, CXCL672, CXCL673, CXCL674, CXCL675, CXCL676, CXCL677, CXCL678, CXCL679, CXCL680, CXCL681, CXCL682, CXCL683, CXCL684, CXCL685, CXCL686, CXCL687, CXCL688, CXCL689, CXCL690, CXCL691, CXCL692, CXCL693, CXCL694, CXCL695, CXCL696, CXCL697, CXCL698, CXCL699, CXCL700, CXCL701, CXCL702, CXCL703, CXCL704, CXCL705, CXCL706, CXCL707, CXCL708, CXCL709, CXCL710, CXCL711, CXCL712, CXCL713, CXCL714, CXCL715, CXCL716, CXCL717, CXCL718, CXCL719, CXCL720, CXCL721, CXCL722, CXCL723, CXCL724, CXCL725, CXCL726, CXCL727, CXCL728, CXCL729, CXCL730, CXCL731, CXCL732, CXCL733, CXCL734, CXCL735, CXCL736, CXCL737, CXCL738, CXCL739, CXCL740, CXCL741, CXCL742, CXCL743, CXCL744, CXCL745, CXCL746, CXCL747, CXCL748, CXCL749, CXCL750, CXCL751, CXCL752, CXCL753, CXCL754, CXCL755, CXCL756, CXCL757, CXCL758, CXCL759, CXCL760, CXCL761, CXCL762, CXCL763, CXCL764, CXCL765, CXCL766, CXCL767, CXCL768, CXCL769, CXCL770, CXCL771, CXCL772, CXCL773, CXCL774, CXCL775, CXCL776, CXCL777, CXCL778, CXCL779, CXCL780, CXCL781, CXCL782, CXCL783, CXCL784, CXCL785, CXCL786, CXCL787, CXCL788, CXCL789, CXCL790, CXCL791, CXCL792, CXCL793, CXCL794, CXCL795, CXCL796, CXCL797, CXCL798, CXCL799, CXCL800, CXCL801, CXCL802, CXCL803, CXCL804, CXCL805, CXCL806, CXCL807, CXCL808, CXCL809, CXCL810, CXCL811, CXCL812, CXCL813, CXCL814, CXCL815, CXCL816, CXCL817, CXCL818, CXCL819, CXCL820, CXCL821, CXCL822, CXCL823, CXCL824, CXCL825, CXCL826, CXCL827, CXCL828, CXCL829, CXCL830, CXCL831, CXCL832, CXCL833, CXCL834, CXCL835, CXCL836, CXCL837, CXCL838, CXCL839, CXCL840, CXCL841, CXCL842, CXCL843, CXCL844, CXCL845, CXCL846, CXCL847, CXCL848, CXCL849, CXCL850, CXCL851, CXCL852, CXCL853, CXCL854, CXCL855, CXCL856, CXCL857, CXCL858, CXCL859, CXCL860, CXCL861, CXCL862, CXCL863, CXCL864, CXCL865, CXCL866, CXCL867, CXCL868, CXCL869, CXCL870, CXCL871, CXCL872, CXCL873, CXCL874, CXCL875, CXCL876, CXCL877, CXCL878, CXCL879, CXCL880, CXCL881, CXCL882, CXCL883, CXCL884, CXCL885, CXCL886, CXCL887, CXCL888, CXCL889, CXCL890, CXCL891, CXCL892, CXCL893, CXCL894, CXCL895, CXCL896, CXCL897, CXCL898, CXCL899, CXCL900, CXCL901, CXCL902, CXCL903, CXCL904, CXCL905, CXCL906, CXCL907, CXCL908, CXCL909, CXCL910, CXCL911, CXCL912, CXCL913, CXCL914, CXCL915, CXCL916, CXCL917, CXCL918, CXCL919, CXCL920, CXCL921, CXCL922, CXCL923, CXCL924, CXCL925, CXCL926, CXCL927, CXCL928, CXCL929, CXCL930, CXCL931, CXCL932, CXCL933, CXCL934, CXCL935, CXCL936, CXCL937, CXCL938, CXCL939, CXCL940, CXCL941, CXCL942, CXCL943, CXCL944, CXCL945, CXCL946, CXCL947, CXCL948, CXCL949, CXCL950, CXCL951, CXCL952, CXCL953, CXCL954, CXCL955, CXCL956, CXCL957, CXCL958, CXCL959, CXCL960, CXCL961, CXCL962, CXCL963, CXCL964, CXCL965, CXCL966, CXCL967, CXCL968, CXCL969, CXCL970, CXCL971, CXCL972, CXCL973, CXCL974, CXCL975, CXCL976, CXCL977, CXCL978, CXCL979, CXCL980, CXCL981, CXCL982, CXCL983, CXCL984, CXCL985, CXCL986, CXCL987, CXCL988, CXCL989, CXCL990, CXCL991, CXCL992, CXCL993, CXCL994, CXCL995, CXCL996, CXCL997, CXCL998, CXCL999, CXCL1000.



The Sinai Immunology Review Project Experience



9000 preprints screened for Immunological content and relevance

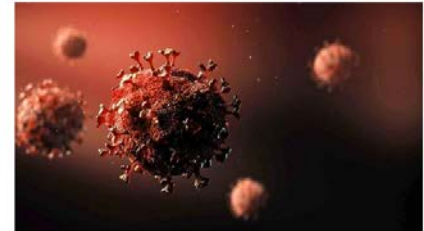
200+ reviews posted online

45 preprints highlighted at *Nat. Reviews Immunol.*

COLLECTION | 09 APRIL 2020

COVID-19 Watch

In this Collection, we bring you articles that highlight the latest research and insight into the immunology of SARS-CoV-2 and the associated disease COVID-19. They cover our emerging understanding of the immune response to this new coronavirus, prospects for vaccine... [show more](#)



Preprint Watch

IN BRIEF 7 SEP 2020 Nature Reviews Immunology	SARS-CoV-2 ORF9c: a mysterious membrane-anchored protein that regulates immune evasion? Fangling Lu
IN BRIEF 7 SEP 2020 Nature Reviews Immunology	Coordinated and sustained immune memory responses after mild COVID-19 Aljeharah Alrubayyi
IN BRIEF 7 SEP 2020 Nature Reviews Immunology	Does a host restriction factor facilitate entry of SARS-CoV-2? Ester Gea-Mallorquí
IN BRIEF 1 SEP 2020 Nature Reviews Immunology	Long-lasting SARS-CoV-2-specific T cell memories Cansu Cimen Bozkus
IN BRIEF 1 SEP 2020 Nature Reviews Immunology	Immune correlates of SARS-CoV-2 protection Matthew Brown
IN BRIEF 21 AUG 2020 Nature Reviews Immunology	Attacking the defence: SARS-CoV-2 can infect immune cells Mariana Borsa & Julie M. Mazet
IN BRIEF 21 AUG 2020 Nature Reviews Immunology	CDS⁺ T cells remember same bits of SARS-CoV-2 Julie M. Mazet & Ester Gea-Mallorquí
IN BRIEF 21 AUG 2020 Nature Reviews Immunology	Altered immune cell differentiation in the lungs of patients with critical COVID-19 Erlinke van Grinsven & Kathrin Jansen



The Sinai Immunology Review Project Experience



9000 preprints screened for Immunological content and relevance

200+ reviews posted online

45 preprints highlighted at *Nat. Reviews Immunol.*



Immunity

Review

Immunology of COVID-19: Current State of the Science

Nicolas Vabret,^{1,*} Graham J. Britton,¹ Conor Gruber,¹ Samarth Hegde,¹ Joel Kim,¹ Maria Kuksin,¹ Rachel Levantovsky,¹ Louise Malle,¹ Alvaro Moreira,¹ Matthew D. Park,¹ Luisanna Pia,¹ Emma Risson,¹ Miriam Saffern,¹ Bérengère Salomé,¹ Myvizi Esai Selvan,¹ Matthew P. Spindler,¹ Jessica Tan,¹ Verena van der Heide,¹ Jill K. Gregory,¹ Konstantina Alexandropoulos,¹ Nina Bhardwaj,¹ Brian D. Brown,¹ Benjamin Greenbaum,¹ Zeynep H. Gümiş,¹ Dirk Homann,¹ Amir Horowitz,¹ Alice O. Kamphorst,¹ Maria A. Curotto de Lafaille,¹ Saurabh Mehandru,¹ Miriam Merad,^{1,*} Robert M. Samstein,^{1,2} and The Sinai Immunology Review Project

¹Precision Immunology Institute at the Icahn School of Medicine at Mount Sinai, New York, NY, USA
²Correspondence: nicolas.vabret@mssm.edu (N.V.), miriam.merad@mssm.edu (M.M.), robert.samstein@mountsinai.org (R.M.S.)
<https://doi.org/10.1016/j.immuni.2020.05.002>

The coronavirus disease 2019 (COVID-19) pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has affected millions of people worldwide, igniting an unprecedented effort from the scientific community to understand the biological underpinning of COVID19 pathophysiology. In this Review, we summarize the current state of knowledge of innate and adaptive immune responses elicited by SARS-CoV-2 infection and the immunological pathways that likely contribute to disease severity and death. We also discuss the rationale and clinical outcome of current therapeutic strategies as well as prospective clinical trials to prevent or treat SARS-CoV-2 infection.

Collective review - Cite >200 preprints



The Sinai Immunology Review Project Experience



Differences between traditional reviews and preprints reviews (from SIRP)

Traditional

Invited

Anonymous

Private

Format variable

Help editorial decision

Preprint

Voluntary

Signed

Public and online

Format standardized

Inform the reader

Thank you!

 @MiriamMerad

 @Neoviral

Panel Discussion





What is the biggest advantage of preprints?

- a. Allows data to reach scientific communities quickly
- b. Builds towards a robust approach to complement peer review process in journal
- c. Allows for open access and open review of scientific research
- d. The preprint model allows unreproducible/unverifiable science to be identified earlier than the peer review process, potentially avoiding retraction
- a. I don't think there is an advantage to preprints

Questions



Up Next:

Exhibitor Gallery & Exhibitor Engagement

Keynote Address: 10:30 AM PT



20 ISMPP WEST 20

**THE WINDS OF CHANGE: NAVIGATING UNCHARTED TERRITORY
FOR MEDICAL COMMUNICATION PROFESSIONALS**

Pressure to Publish. Preprints, Peer Review and Retractions in
the Spotlight

Theodora Bloom, Allison Leung, Miriam Merad, Jerry Sheehan, Nicolas Vabret, Susan Wieting

October 1-2, 2020 • Virtual

