

ResearchGate

REPORT

Science hasn't slowed, it's just moved online

How the COVID-19 pandemic continues to change how research is happening in 2021



The impact of COVID-19 on scientific researchers

In spring 2020, as the novel coronavirus swept the globe, ResearchGate released a [COVID-19 Impact Report](#). It provided insights about how the international scientific community was being impacted in those early days of the pandemic — in particular, how researchers' work was being affected.

Amidst the collective fear and uncertainty, there was no way of forecasting the implications of the virus on our professional and personal lives: from the historically staggering rate of vaccine development and testing; to the increased public attention on science, with vaccine researchers lionized in the media; to the horrible human toll, with millions of lives cut short — all amid growing concerns about the development of new mutations of the virus.

What you are reading now is the second-annual COVID-19 impact report for 2021. Our goal is to unpack some of the implications of the pandemic for scientific researchers, based on survey responses from 2,000 researchers and ResearchGate proprietary data aggregated from our current registered member base of more than 20 million researchers.

Our report is enriched by direct quotations from researchers, who comment on everything from the economic challenges produced by the pandemic (for example, the perception in the researcher community that grant funding has been disproportionately diverted toward coronavirus-related research), to the psychological toll of a primarily digital work mode (like the increased time devoted to preparing lessons and

communicating with students), to some perceived gaps in our survey questions (for instance, not acknowledging the effect that increased childcare during lockdown has had on researchers' work).

Science hasn't slowed, it's just moved online: How the COVID-19 pandemic continues to change how research is happening in 2021

This new report shines a light on researchers' experiences of how the pandemic has changed the way they work, with first-hand accounts and aggregate data from the frontlines of science around the world. Ultimately, we hope this report provides a barometer for the current moment, and points to shifts in the way scientific research is produced, disseminated, and consumed.



How we created this report

We conducted a COVID-19 impact survey on February 19, 2021 via a prompt to logged in registered researchers on the ResearchGate platform. All data was captured in 18 hours.

This report explores the impact on STEM researchers — **life scientists** (such as biologists, medical professionals, and psychologists), **applied scientists** (such as computer scientists, engineers, and mathematicians), **physical scientists** (such as physicists, geologists, and chemists), and **social scientists** (such as economists, anthropologists, and sociologists).

SURVEY STATS

2,000 Registered ResearchGate members

99% Confidence*

*With a +/-3% error rate that these results reflect the views of the whole ResearchGate member community, based on current analytical models.

About ResearchGate's registered members

TOTAL MEMBERS



20+ million

Registered members



79

Nobel Laureates



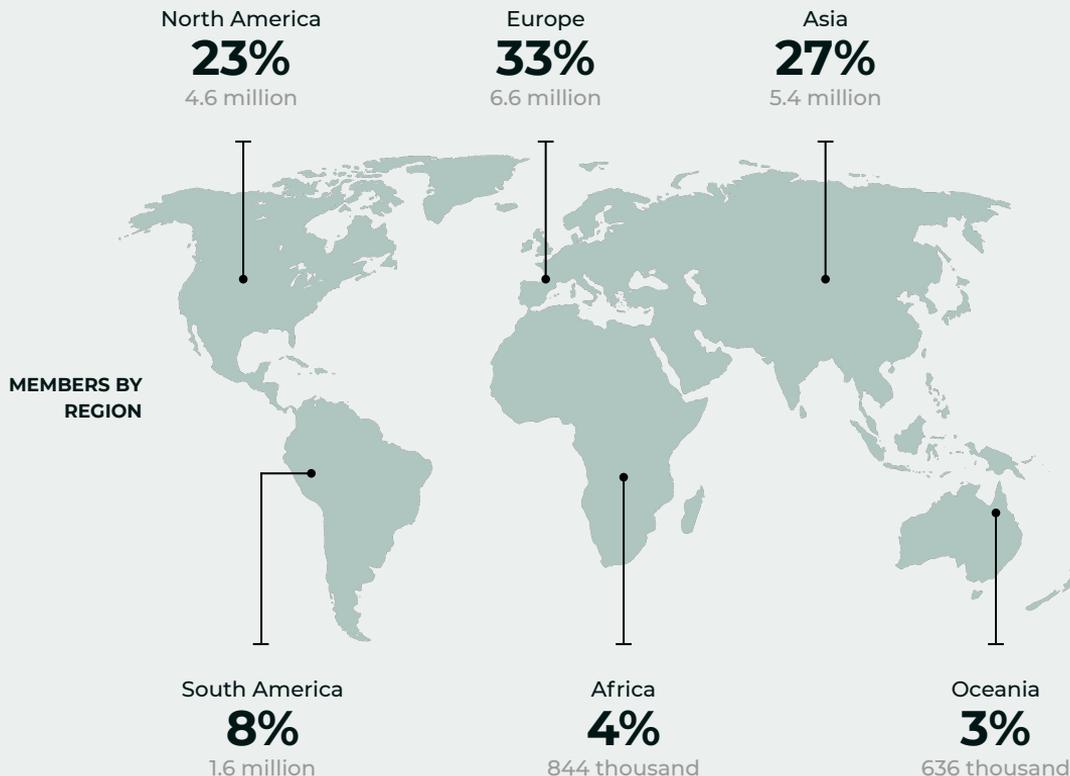
30 thousand

Global research institutions



146 million

Scientific research publication pages





MOST REPRESENTED DISCIPLINES



19% Engineering

3.8 million



16% Medicine

3.1 million



13% Biology

2.6 million



7% Computer Science

1.5 million



7% Chemistry

1.4 million



4% Physics

839 thousand

COVID-19 has accelerated science's shift online

The pandemic closed research institutions and laboratories, and disrupted traditional ways of working. As such, many scientists were driven to seek various online solutions to bridge the gaps, causing the surge we have seen in our own digital traffic.

**1 million
sign-ups**

In 2019



**3 million
sign-ups**

In 2020

**5,000 new
members**

Daily average in 2019



**8,100 new
members**

Daily average in 2020

**3 billion page
impressions**

In 2019



**3.9 billion page
impressions**

In 2020

**250 million page
impressions**

Monthly in 2019



**321 million page
impressions**

Monthly in 2020



97%

of researchers report that their work has been impacted by COVID-19

50%

of researchers report significant impact

Degree to which COVID-19 is impacting researchers' scientific work

Almost all researchers reported being significantly impacted by the coronavirus pandemic. And the experience has been especially challenging for researchers who are also caregivers.

One researcher wrote, *"For parents of infants and toddlers, our tasks have tripled and all of life is much more difficult during the pandemic."*

Another said, *"My work has been negatively impacted for two main reasons: the misconception that everyone is more readily available for meetings while working from home, coupled with monitoring online schooling for small children, on top of increased family chores—this has hit young, female researchers especially hard."*



Scientists are working from home

An 81% majority of international researchers reported working from home (with another 3% saying they'd prefer to be), although 35% of researchers indicate that they're not exclusively working from home — suggesting limited, highly regulated access to on-site facilities and resources.

81%

of researchers are working from home

35%

though 35% of those who report working from home are not doing so exclusively

38%

of researchers are spending less or much less time on experimental work

64%

report similar activity levels or more time spent on planning future experiments or analyzing existing data

The pandemic's impact on experiment data

We found that 38% of researchers are spending less or much less time on experiments, while 64% report that they're continuing to plan experiments or analyze data. Interestingly, researchers unable to produce new experiment data because of lockdowns are finding ways to maintain their work, although some lament the lack of progress with their experiments.

One researcher writes, *"I am now submitting more research papers based on data generated through experiments conducted a few years back."*

"The negative is that I haven't been able to enter my research institute," said another researcher. *"The positive is that I have had the opportunity to study a large quantity of research papers, write*

two review articles, and complete one research paper. In every sense, my daily life has changed completely."

Another researcher said that all experiment work has been paused for the past year, with even planning for experiments becoming difficult. *"Running simulations and similar work via remote desktop connection can be quite slow. A lot of my time is spent devising ways to accomplish tasks that would have been easier in the lab or face-to-face."*

"I couldn't generate preliminary data over the past year and all my funding proposals for next year got rejected," wrote another researcher. *"I have zero outcomes and no paid work for next year."*

When in lockdown, researchers turn to literature

Given delays in experiments, researchers have found new ways of being productive. We found a significant 40% of researchers report spending more or much more time searching for and reading scientific literature. Over the past year of the pandemic, ResearchGate page impressions have similarly increased from 3 billion annually to 3.9 billion. As one researcher said, “*My work now is all literature review.*”



40%

report spending more or much more time searching for and reading scientific literature as before COVID-19 impacted their work



40%

of respondents are spending more or much more time focused on funding

How COVID-19 has impacted funding

40% of researchers are spending more or much more time looking for funding opportunities, writing grants, or reviewing grant applications.

Some respondents claim that coronavirus research is receiving a disproportionate amount of funding, with other fields of research perceived as being underfunded. As one researcher wrote, *“The reduction of funds available for research in my field has impacted me, as COVID-19 related research currently has a higher priority.”*

Another echoed the assessment, saying, *“Funding for research in fields outside of COVID-19 related research are virtually nil, to put it drastically.”* Still others wrote of delays in grant reviews.

Research paper production is up

Much as scientific literature consumption is on the rise, so too is production.

51% of researchers are spending more or much more time writing, submitting, and peer-reviewing papers. One researcher wrote, *“With so many scientists at home, papers are being written and submitted en masse. I’ve had to review 4x more papers than usual during this time.”* Another said, *“I’ve been locked out of the lab, so instead [I’m] studying research papers and writing one myself.”*

Another respondent wrote, *“Working from home has actually allowed me to spend more time on research and paper preparation — it turned out to be a productive past year.”* And another said, *“I know I have accomplished more, in terms of writing and reviewing papers.”*



51%

of researchers are spending more or much more time writing, submitting, and reviewing papers



72%

report spending less or much less time attending conferences or other in-person events

The coronavirus pandemic and conferences

We found that while 72% of researchers report spending less or much less time attending conferences or other in-person events, the number might have presumably been closer to 100%.

A quick check of some comments from our respondents seem to shed some light on the matter: *“Isn’t this a double-barreled question? I have actually attended more conferences in the past year — specifically because these conferences weren’t in-person events.”*

Another researcher summarized it well: *“A positive aspect of the pandemic is that we’ve all realized that virtual conferences can be more effective and less expensive than in-person meetings, allowing researchers from less wealthy countries or with small children to care for to participate in forums they would otherwise find difficult to attend.”*

The toll on teachers

40% of researchers reported spending more or much more time on teaching than before the pandemic started. None seemed particularly enthusiastic about the change, citing an array of administrative challenges and fatigue from the always-on expectations of being online.

“The intensity of scientific teaching activities has increased significantly, as lecture preparations for video presentations take much more time than in-class presentations,” one researcher wrote.

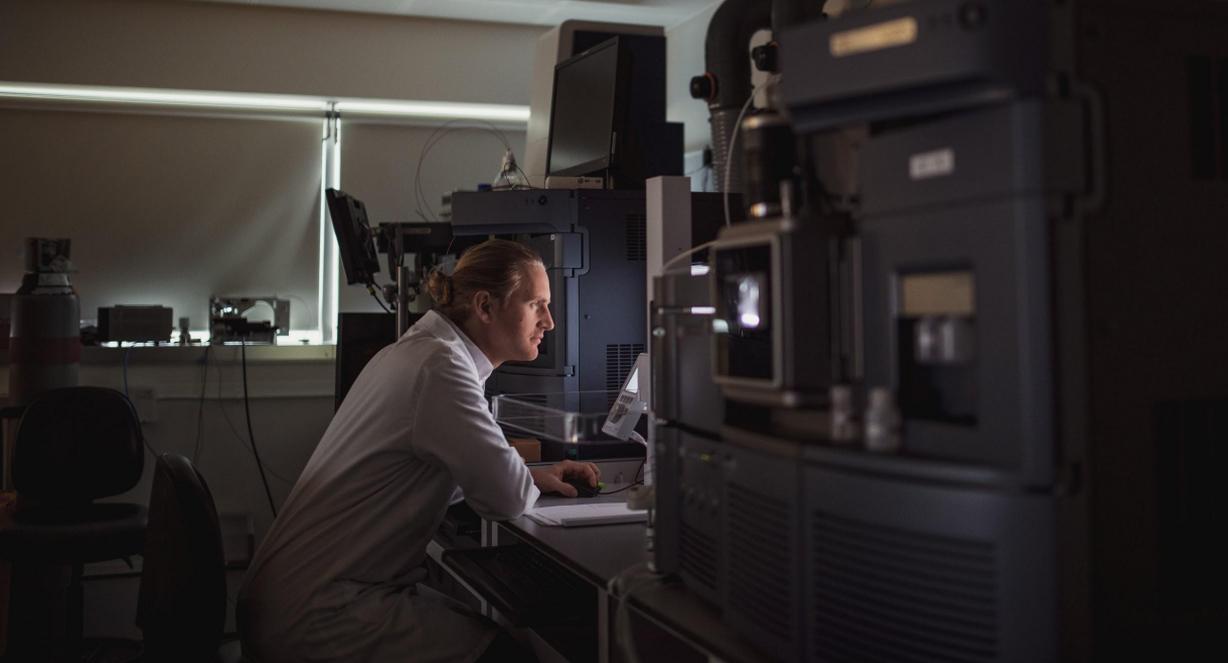
Still another said, *“Online teaching duties require far more preparation, and work-life balance has been destroyed, as email availability requires 24-7 responsibility.”*

“I not only have to create notes for teaching an online class, but also create online presentations. Now everything takes literally twice as long,” another researcher commented.



40%

report spending more or much more time on teaching compared to before the pandemic



62%

are spending more or similar amounts of time collaborating with other scientists

Collaboration continues — but differently

We heard from our respondents that 31% of them are spending more or much more time collaborating, while another 31% reported that their collaboration is at similar levels compared to before the pandemic.

While there has been a reduction in lab or field work, scientists are spending more time connecting online. For instance, ResearchGate has seen registrations increase to more than 8,000 new registrations a day — suggesting that researchers are finding new ways to connect with other scientists. As one survey respondent wrote, *“We have had to adjust. Lab work has halted, so the scope of projects and how we interact with students, postdocs, and collaborators has changed.”*

Laboratory activity in a pandemic

Coronavirus social restrictions and lab closures have had a significant impact on scientific research: more than half of our respondents said they're spending less or much less time searching for or purchasing lab equipment. And 42% report spending less or much less time with lab management and administration duties.

One researcher summarized the impact on lab work well: *"Travel to analyze samples in regional labs was canceled; samples shipped for analysis were delayed due to slower shipments; irregular working hours in labs impedes my progress; and closed labs with reduced staff also reduces my progress."*



52%

of researchers are spending less or much less time searching for or purchasing lab equipment

42%

of respondents are spending less or much less time with lab management and administration



53%

increase in views promoting
sponsored content^{†**}

68%

increase in clicks promoting
sponsored content^{†**}

1.31%

average social activity click-through
rate for digital events this year

How scientific product companies are responding

Given the dip in scientific equipment research and sale, scientific companies are instead unlocking new opportunities to connect with researchers via high-value educational content and, increasingly, online events. This top-of-funnel activity serves long-term business goals, while accommodating today's economic realities.

With more researchers spending more time online, the ResearchGate platform has measured a 53% increase in sponsored content promotion views, with a 68% increase in clicks.

Furthermore, social activity on the network has helped to propel the promotion of digital events, such as webinars, which get an average click-through rate of 1.31% on ResearchGate — far exceeding industry averages.*

[Learn more](#) about ResearchGate Marketing Solutions

*Smart Insights display CTRs, 2020 | **Year-on-year change

Significant demand in the scientific job market

Given the pandemic's hit to the global economy and the surge in unemployment, it seems there are now more scientists looking for their next career move. We found that nearly 50% of our survey respondents reported spending more or much more time looking for job opportunities than before the pandemic — whether due to job loss, the inability to secure funding, or as a safeguard against either of these things happening.

66% of researchers said that they are spending more or as much time keeping up to date with other scientific institutions, a sign that they are keen to keep an ear to the ground in the scientific research community.



46%

are spending more or much more time looking for career opportunities

66%

are spending as much or more time keeping up to date with other scientific institutions



15%

increase in job post views on
ResearchGate*

30%

increase in job applications submitted
to jobs posted on ResearchGate*

38%

increase to two or more modes of
talent acquisition being utilized*

Scientific talent acquisition is changing

ResearchGate's proprietary data also suggests new job-seeking behavior for research positions. In 2020, we saw a 15% increase in the average number of views across all jobs promoted within the network, while the average number of applications received via ResearchGate job suggestions increased by 30%.

Furthermore, talent acquisition teams in science are now adopting new ways of working to ensure they hire the best candidates. ResearchGate Scientific Recruitment Solutions measured a 38% increase to two or more modes of talent acquisition tools being used. Many teams are now utilizing more modern digital techniques that go beyond the traditional job post, including employer branding and direct recruiter outreach via the ResearchGate network.

[Learn more](#) about ResearchGate Scientific Recruitment Solutions

*Year-on-year change

KEY TAKEAWAYS

1.

Science hasn't slowed, but it's produced differently

With limited access to labs, resources, and field work, there has been a marked reduction in researchers conducting experiments and generating new data. In order to maintain and advance scientific progress during this time, researchers are instead analyzing existing data sets, reviewing significantly more scientific literature, and unleashing a backlog of previously unwritten articles and publications.

2.

More researchers are spending more time online

It's clear that scientific researchers are not only discovering and consuming considerably more scientific content online, they're also seeking out effective digital means of connecting and collaborating with their scientific peers. The acceleration of online scientific events, webinars, and conferences has enabled more segments of the scientific community to gather and participate in the conversation.

3.

The scientific job market is adapting to the moment

Economic contraction, increased unemployment rates, in-person events closures, and challenges to securing funding have contributed to a changed job market. Scientific researchers are more actively staying up to date with other research organizations, and applying for more jobs. Organizations hiring in science are keeping pace, and utilizing new digital channels to connect with top talent.

ResearchGate connects the world of science and makes research open to all.

[Learn more](#)