

Virologist Dr. Stephen Griffin speaks on the COVID pandemic and the Omicron variant: Part 1

Benjamin Mateus
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This is the first of a two-part interview with virologist Dr. Stephen Griffin. Part 2 can be read here.

Dr. Griffin is an associate professor at the University of Leeds and the previous chair of the Virus Division of the Microbiology Society in the UK. He received his Ph.D. from the University of Cambridge's Department of Medicine at Addenbrooke's Hospital. He moved to Leeds in 2001, conducting post-doctorate research on the hepatitis C virus. Dr. Griffin was tenured in 2014 as an associate professor of viral oncology in the School of Medicine.

His academic interests include work on viruses, both as a cause and a potential cure for human diseases. Specifically, his work has focused on understanding and exploiting membrane proteins called ion channels encoded by viruses, identifying the mechanisms used by viruses to induce cancers in the liver and brain, and developing viruses as immunotherapies to treat human cancers.

He is currently a member of the Independent Scientific Advisory Group for Emergencies (Independent SAGE) and has been active in various government committees during the COVID-19 crisis. He has also been actively communicating through his social media and various public platforms on the science of the pandemic.

Benjamin Mateus (BM): Good day Dr. Griffin. I hope you are doing well. Thank you for taking this interview with the *World Socialist Web Site*. Maybe we could begin by asking some preliminary questions. Could you introduce yourself and tell us what you do?

Stephen Griffin (SG): Thank you for having me, Benjamin. I'm good. I'm Stephen Griffin. I work at the University of Leeds, and I'm a virologist. I've interests in antivirals, including against SARS-CoV-2, and cancer virology—oncogenic viruses and using viruses as cancer therapies.

BM: That's very interesting. What kind of work do you do in cancer therapy with viruses?

SG: So, we're using oncolytic viruses, but more as immune adjuvants to treat liver cancers, primarily. My main interest from several years ago was the hepatitis C virus. It's linked to the development of liver cancer. We're interested in using immunotherapies against hepatitis C-positive liver cancers.

[About 660,000 people die each year from liver cancer, a majority of them in China. Chronic hepatitis B and C virus account for 50 and 25 percent of cases, respectively. Most patients present with an advanced and incurable disease with a low chance of any long-term survival. Oncolytic viruses, theoretically speaking, can take advantage of the preferential infection of cancer cells that can elicit an immune response against them. Dr. Griffin's work involves studying and exploring these possibilities.]

BM: Moving into our discussion on the pandemic, I have found it fascinating that so many people from diverse specialties and varied backgrounds have converged on this issue. It has affected everyone on the

planet, and it has become the single point of discussion for two years, as it should be. As some have noted, it is a once-in-a-century event.

But you, from your perspective as a virologist, your point of view is unique. Can you reflect on your thoughts about when the pandemic first erupted and the course it has taken? And perhaps, in your response, touch on the role being played by the Independent SAGE (Scientific Advisory Group for Emergencies). Your professional profile lists you as a member.

SG: One memory I do have actually ... I was the chair until this January of the virus division of the Microbiology Society in the UK. And we were meeting in January 2020 to plan the next set of conferences and which sessions we should hold. We had African Swine Fever on our agenda and all sorts of things were going on. And, of course, we'd heard about this coronavirus in China.

And I distinctly remember us deciding that because we'd had so many sessions and things like Ebola and Zika, maybe our audience wouldn't particularly want another virus outbreak session. So, we decided against the SARS-CoV-2 session, which was quite ironic considering what happened shortly afterward.

SARS-CoV-1 and SARS-CoV-2

But it was apparent to me, personally, that once we started seeing the degree of spread that was being reported and probably being reported quite late on as we were getting second, third and fourth generation spread in Wuhan, it was clear to me this was either going to be a bit like the original SARS or potentially worse.

[Severe Acute Respiratory Syndrome (SARS) was an outbreak of a zoonotic respiratory virus first identified in Foshan, Guangdong, China, in November 2002. It infected over 8,000 people in 29 different countries resulting in 774 deaths worldwide. The World Health Organization was notified in February 2003 of the outbreak, and a global alert was issued in March 2003.]

And I remember my dad asking me what might happen about this? And I remember saying to him this could be very bad. You need to be prepared. I think that it's a shame that we couldn't get the Public Health Emergency of International Concern declared a little bit sooner.

But I think it was always the case that there were anecdotal reports that people had been leaving China and spreading infection beyond China before everything was closed. And I think it was evident that the asymptomatic spread meant that that did happen. And, of course, we are where we are now.

BM: This is what makes SARS-CoV-2 a much more sinister pathogen

compared to SARS-CoV-1 because of the asymptomatic and pre-symptomatic transmission.

SG: Yeah. The way it's spread compared to SARS-CoV-1 was ... yeah, there is the pre-symptomatic or asymptomatic infection. But it's also far better at binding to human ACE2 receptors through the virus' spike protein. And the difference is as well that SARS1 primarily spreads upon presentation of symptoms.

Beyond the original outbreak, which spread internationally, most of the transmission of SARS1 was nosocomial, meaning they were hospital-acquired infections. Relatively, that was more easily contained. Whereas, of course, we are struggling to contain this virus now, and I think that's a real problem. I think SARS2 is much better able to spread amongst humans. It's still adapting to humans, as we can see from month to month as new variants emerge.

But the fact that this virus spread so quickly, that we looked and saw what was happening in Italy ... and here in the UK, we were reassured that all the imported cases were being traced and contacts found and all the rest of it right up until the point when they stopped contact tracing. And then, of course, we had the various stages of advice prior to a full lockdown.

It's a shame that we didn't act sooner, obviously. And, similarly as has been happening in the UK quite a bit, we'd never really saw it through. We'd put these harsh restrictions onto people's lives, which of course saved lives. But then undid a lot of the good that was done by unlocking too soon and allowing things to go all the way back to the near complete freedom, which is what we've done now again. Of course, now we have vaccines and things are different, but it's still not the case that the vaccines and antiviral therapies should be allowed to deal with this on their own, in my view.

Going back to your point about independent SAGE, I wasn't with the organization at its inception. But the reasons for it being established ... there is an excellent article about its history recently published by the original members that go into depth about its reasons.

[In a November 22, 2021, reply to an article about Independent SAGE published in the BMJ, the authors explained, "We are not 'rebel scientists' but internationally recognized academics and health practitioners seeking to communicate science to the public, press, and policy makers. Our main activity is delivering public briefings through live broadcasting and written reports, in which we seek to present often complex information in a timely manner and an easily understandable form. Key to these briefings is expert interpretation of the latest epidemiological data from the government daily dashboard, NHS England, public health bodies from each home nation, NHS Test and Trace, the Office for National Statistics, the REACT study, and other reputable sources, acknowledging the work of those who do so much to curate them."]

But the main reasons were at the time [official] SAGE itself was clandestine and it was clear that the list of members of SAGE wasn't being made public. The minutes of SAGE meetings weren't being made public. And people needed guidance, people needed help, people needed support.

And I think that the idea of Indie SAGE has always been rather than to act as a government advisory body, although we are generally in agreement with SAGE 99 percent of the time, I think that's fair to say, it's about vulnerable groups reaching out and needing information and needing help and support and advice about how best to live through this pandemic.

In this regard, Independent SAGE serves a slightly different purpose to SAGE. It certainly was never and is not in any way in opposition to SAGE. It's meant to do a different job. It's meant to be there ... People criticize it for speaking about policy and I emphasize policy rather than politics.

But we talk about policy because we've got a wide spread of expertise in the panel that ranges through sociology, public health, psychologists, virologists and immunologists. Also, people that address social inequalities, for example. And for that reason, I think, we have the expertise to bring those things together and to make statements.

And we have tried to be productive and helpful. We've published series of reports. We're still doing that. We publish statements. We hold briefings on subject areas that we believe will be helpful to the public and complement the guidance that's given from government. Sometimes, obviously, we criticize the guidance that's given by government. I don't believe there's anything wrong with holding those things to account myself.

The state of the pandemic in Britain

BM: With that lead-in, can you tell us what is happening in the UK now?

SG: (laughter) What's happening in the UK is ... everything has become ... my wife mentioned this term to me the other day—neoliberal politics—it's now down to the choice of the individual. It's complete freedom in terms of obliging by most restrictions. There aren't any restrictions or as I prefer to call them protections. Mask wearing is advisory, not compulsory. Of course, there's a drive still to get everybody vaccinated. We've recently just had under 12s authorized for their vaccines, which is fantastic news.

The unfortunate thing about it though is that it's seen as a non-urgent priority and that's not happening until April. That's a shame because a lot of spread now is in schools and school-aged children. We're looking at, I think, another booster program for the over 55s because I think government...

BM: A fourth jab?

SG: Yeah, a fourth jab. So, clinically vulnerable people on the high priority list have been given a fourth shot, which is great. But I'm not sure how sustainable this frequent boosting program is going to be going forward. Immunologically, there could be a limit to the benefits of doing that too frequently.

Obviously, you may need to do it in the future, but I think every few months is maybe a difficult thing to understand. We've never really had a vaccine program like this before, so it's hard to predict what might happen.

BM: What could happen immunologically if you give too many booster shots? What is the theoretical risk?

SG: Well, I don't think there's a [harmful] risk. I think you'll just stop seeing as much benefit potentially. I think that these systems always have brakes. And that's the reason why, for example, your serum antibodies start to drop because to maintain that level of immunological readiness ... It's not how your immune system really works.

But the main issue for me is that prevalence [of the SARS-CoV-2 virus] is what drives exposure. So, if you have waning antibody immunity then prevalence is the issue because you're more at risk of being reinfected or having a breakthrough infection from your vaccine. Prevalence also means that Long COVID is a major problem. Prevalence also means that those people that have not had the best response to their vaccine are being exposed continuously. I personally don't believe [that's a good idea] and, of course, the major thing for me as a virus geek is viral evolution is continuing.

My view is that we ought not to be allowing widespread prevalence and just relying on our vaccines to save us. I think that's a bad idea because we're nowhere near any kind of equilibrium between our immunity and virus evolution yet. People are throwing around terms like endemic and by

endemic they're implying that's benign and neither of those things are true or applicable to any situation in any country that I've seen so far.

BM: It's interesting you mention the term benign. It recalls COVID in children. You hear this repeatedly about it not affecting children. They are invulnerable to the infection. But in the United States, since schools were opened and the Delta wave swept through, more than 1,000 children have died since September of last year. In total that figure is over 1,500.

Meanwhile, only five children died from the flu in the last two flu seasons. Yet nothing is being done about it and not much is said about it. Masks are being dropped and there are no plans to ever close schools again.

I was curious about the impact of COVID on children in the UK. Can you speak to it?

SG: It's a seldom spoken-about thing. We've been trying to raise awareness of it. I work with a charity called Long COVID Kids, trying to highlight the issues around that. Long COVID is another complicated issue, which we should come back to, but in terms of hospitalizations and fatalities and things like that, there's certainly been an increase.

Since July, when we had our Freedom Day, of course we have the reimposition of restrictions over Christmas briefly. Obviously, kids weren't really at school for much of 2020. And so, since Delta and going back to school in spring of 2021, there, as you might expect, and more cases and more hospitalizations and more deaths.

And I think there's something like 106 childhood deaths in under nineteens, according to the Office of National Statistics during 2021. For a population size of the UK that's not great. That's within the top five causes of death for children.

Of course, we should be comparing childhood diseases with other childhood diseases and not with adult disease. That's a major problem that people have here in the UK. We compare the relative risk of older people becoming unwell from COVID to children and that's not the right comparison.

And again, prevalence is the problem because if you've got a very low risk eventuality of a child becoming seriously unwell, much like it's the case in the States, if you have that many cases then that small proportion becomes a relatively large real number.

And it's quite disappointing to see people still quoting things like IFRs [infection fatality rates], CFRs [case fatality rates] and all that sort of thing without understanding the fact that you need to take into account the R0 value [basic reproduction number used in public health that indicates how contagious an infectious disease is] or the number of cases over time that you have in terms of measuring the clinical impact of these viruses. It's quite troubling.

And, of course, last autumn the government got rid of all the mitigations pretty much in schools because they felt that it was more important to get kids in school at no matter the cost and just assumed the level of harm that would happen would be acceptable. And in my view, I don't think it has been [acceptable]. If you're looking just at a disruption, there's been vast amounts of disruption since they got rid of the bubble system. The problem with the bubble system was that the bubbles were too big because of understaffing and underresourcing. But that is historical over the last decade, really.

Vaccines and viruses

It is problematic that cases are continuing in children without them having been properly protected by vaccines. The uptake in adolescents for the vaccines, which were licensed last autumn, has been poor. It's been particularly poor in less affluent areas.

We're talking something like 40-odd percent for the first dose in less affluent areas for those 12 to 16. And that's not going to help. We need second doses, and we can see from the data in the US and elsewhere that the responses in children are starting to wane as well. Even though they are very good at protecting against hospitalization and severe disease as was reported this week.

So, I'm disappointed with the drive to vaccinate children in the UK. I think it's a major mistake in our vaccination policy. That combined with people that are reluctant to get the vaccine still means we've got something like 18 million people that are unvaccinated in the UK. And that as a proportion, seeing as now we're moving on to dose three and dose four, that really is troubling.

If you want to rely on a vaccine as your sort of stalwart defense against this virus, because ... if you could get cases down and then make sure everyone was well, vaccinated and protected, maybe you'd have a chance of keeping this under control, but at the moment we really don't.

BM: The AstraZeneca and the Pfizer vaccine debates lit up in early 2021 across Europe. AstraZeneca got a lot of bad press though I felt it was and is still a good vaccine. Has that debate for the most part died out? Is AstraZeneca still being used or are their fears about taking it still?

SG: The vaccine AstraZeneca (AZed) is still being used ... it is certainly part of our core first two dose regimens. That still happens. The boosters, however, have all been mRNA vaccines as far as I know, because there's good data that shows that an mRNA on top of an AZed provides a good response.

I've always thought that the utility of the AZed vaccine will be to enable global vaccination because of the cold-chain issues surrounding the mRNA vaccines. That is where I would like to see it being deployed, even now. Even though there are some issues with the antibody responses that you get to AZed in terms of the longevity and some of the potency that is sorted out by boosting. So, that's not an issue.

But the protection against severe disease remains fantastic. Our first ports of call, as we roll vaccines out across the globe, must be to protect the most vulnerable against severe disease and hospitalization. That would be a fantastic job for AZed.

And then, thereafter, depending on how we managed to control prevalence worldwide, we can supplement that with whatever is needed. I think that and the Jansen and potentially even the Russian Sputnik, any vaccine is good if you deploy it correctly. I don't think there's any shaming of AZed now.

BM: Perhaps it would be good to get to some of the basics on virology. Generally, basic science education is lacking in society. Many would be hard pressed to explain the differences between bacteria and viruses.

So, what is a virus? Is it living or not? And how do coronaviruses differ as a subset of viruses?

SG: The definition of living is something that can probably be debated philosophically. But a virus is what we call an obligate parasite. It has its own genetic material. It's the ultimate embodiment of a selfish gene. It wants to replicate itself. Divide rapidly and spread onto the next susceptible host.

As a virus, SARS-CoV-2 possesses a tiny little fragment of genetic material, something on the order of 200,000 times smaller than our genome. Meaning it has some of the components that it needs to assist it with its replication cycle but by no means all. And so that means it must absolutely hijack our bodies to get in and literally use our bodies as factories to then make new copies of itself to protect those copies [genetic strands] of itself in these virions, which people will have seen on news programs, which look like a golf ball of spikes poking out, which they use to pass on to the next host.

And that is what the virus wants to do. The fact that it makes us unwell is at least in part due to our body's response to that virus and the virus doesn't really care whether it causes disease or not. It's doing what it

needs to do to replicate and thrive.

That then starts getting you into these ideas around people talking about how the virus is evolving in terms of its virulence, that virulence and disease and the virus, all those things are a combination of our immunity, the properties of that virus and the environment. So, people are saying that this virus will naturally attenuate, but I'm afraid they aren't correct. However, it's not necessarily the case that it would get worse.

Really, it's a random event, which may or may not be successful. It's Darwinian evolution in a microcosm. I think people really didn't understand the nature of a virus particularly well, but I think that's changed a lot during the pandemic. But it is difficult sometimes to make people understand ... I think a lot of people felt that doing a lockdown would make it go away and it wouldn't come back.

But it is analogous to putting out a large fire and you leave the embers burning and more fuel gets made available, it will come back. We are the fuel that virus needs. So, if we're making ourselves susceptible to infection and the fact the virus is constantly changing to be able to infect us in different ways, then that means that this virus will continue to rise and fall in surges and waves across the globe until we can get a proper grip on it. And now we're still lacking that concerted effort to really get a handle on it.

To be continued



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