Research Report

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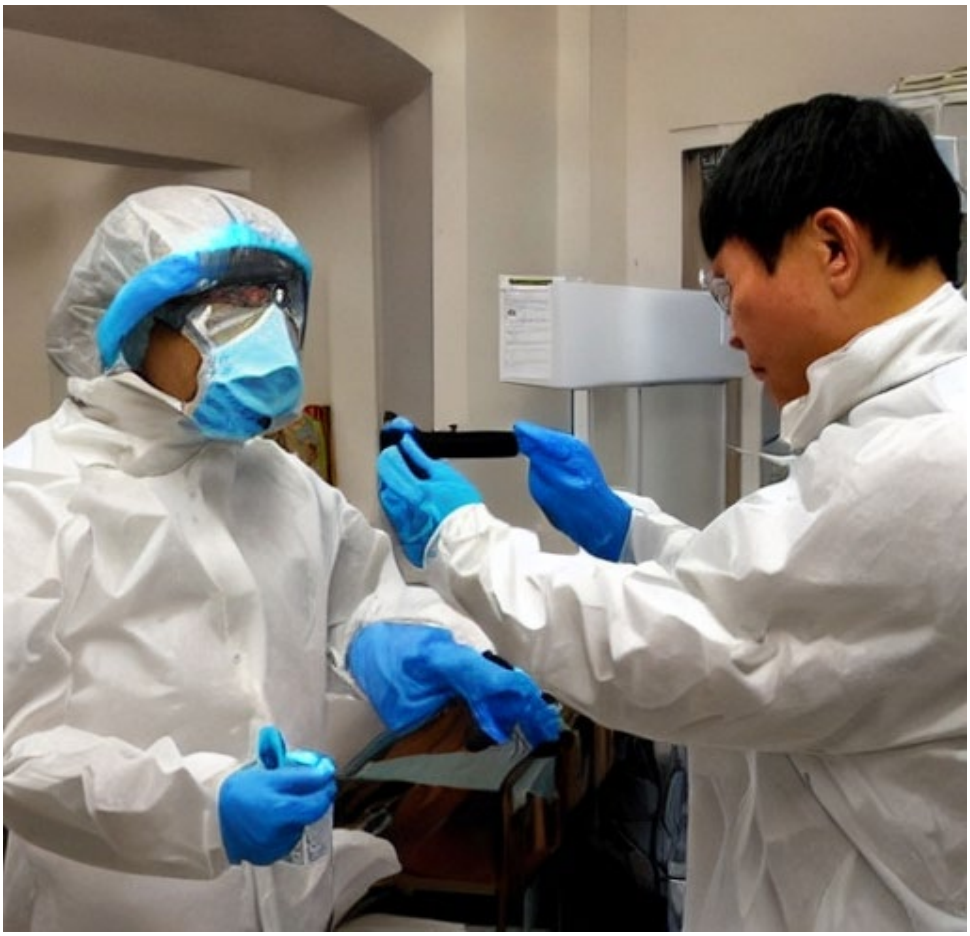
The International Frontier of the CCP's Bioweapons Program

Wuhan Institute of Virology, Chinese Academy of Medical Sciences, and the Pakistan Army's Defence Science and Technology Organization



Following a period of extensive multi-domain research across Asia, a clear operational link has been identified between the biological weapons programs of the Chinese Communist Party (CCP) and the Pakistan Army. In addition to the surfacing of this network, this assessment has empirically identified specific research groups and their gain-of-function and synthetic virus creation experiments. This enables visibility of the exact type of high-risk pathogen research that is being done on SARS-CoV-2, MERS, and Zika viruses within this transnational network for the first time.

Current Status of the CCP-Led WIV-DESTO Bioweapons Program in Pakistan

Investigative reporting has surfaced a newly-operational Gain-of-Function (GoF)-capable virology lab facility that is jointly run by China's Wuhan Institute of Virology (WIV) and the Defence Science and Technology Organization (DESTO), which is under the direct control of the Pakistan Army.[1] In addition to these international developments, within China itself WIV was instrumental in establishing new GoF-capable pathogen research infrastructure. This includes a relatively unknown Biosafety Level 4 (BSL4) lab in Kunming that is designed to handle the world's most dangerous pathogens and conduct high-risk experiments on them.

This BSL4 lab in Kunming falls under the official administration of the Chinese Academy of Medical Sciences (CAMS), thereby concretely linking the bioweapons research activities of CAMS with that of WIV (which officially falls under the Chinese Academy of Sciences). This has substantial implications for the joint WIV-DESTO facility in Pakistan in that CAMS has a direct mechanism to 'plug into' Pakistani bioweapons research via WIV.

What is CAMS? Like WIV, It Is Not a Purely Civilian Operation

While the past several years has shed light on the GoF research being done on bat coronaviruses (such as SARS-CoV-2) at WIV[2], equally (if not more) dangerous pathogen research has continued at CAMS unabated and away from international scrutiny. CAMS presents itself as a nationwide network operating along an American-style biomedical research and hospital network system with interlinking research institutes, laboratories, clinical facilities, medical education (including the Peking Union Medical College), and technology commercialization operations.

While the base structure of CAMS resembles an American-style system, material differences have emerged over time. For one, all members of the CAMS leadership team and leading clinicians and scientists are strongly encouraged, if not outright required, to be CCP members and carry out Party functions in addition to their clinical/scientific work. While CCP control over CAMS is not unique under China's system of governance, this marks a substantial divergence from its American counterparts.

Second, under China's Civil-Military Fusion Law, it is unclear as to whether CAMS can be quickly repurposed and put under the direct control of the CCP and/or People's Liberation Army (PLA) under specific contingencies, including lab accidents. While it is important not to over emphasize this dynamic without evidence, the Civil-Military Fusion Law objectively represents an overarching legal framework which CAMS must operate within.

The joint WIV-DESTO operation in Pakistan is not a bilateral biomedical research partnership between two civilian institutes focused on advancing human and animal health. It

represents a dangerous platform for CAMS and multiple other CCP-run institutions, including those with People's Liberation Army (PLA) links, to conduct bioweapons research under Pakistan Army cover. This structural reality combines with Pakistan's decades-long proven track record of utilizing home-grown terrorist groups, such as Lashkar-e-Taiba (LeT), to carry out terrorist operations in India. The net result is an extraordinarily high-risk geostrategic situation that has been virtually ignored by most analysts.

CCP's 'Lift and Drop' Bioweapons Options for DESTO: GoF Research on SARS-CoV-2/Zika/MERS Viruses, Developing Purely Synthetic Viruses in the Lab

Zika

Dr. Shi Pei-Yong, who currently holds a position at University of Texas Medical Branch (UTMB) has conducted controversial research involving the manipulation of spike proteins of the SARS-CoV-2 virus to make the pathogen more infectious than the variants that were circulating naturally.[3] Shi has also worked extensively with the PLA's Academy of Military Medical Sciences (AMMS) as well as CAMS on other infectious disease projects involving the manipulation of viruses, such as chimeric Zika vaccine development and Zika GoF studies using mouse models. One of Shi's key collaborators, Qi Chen, is the Director of the Virology Lab at the Institute of Microbiology and Epidemiology (AMMS).[4] All of these outputs and technical knowhow are now directly transferable to the Pakistan Army via WIV.

Another UTMB scientist, Dr. Chao Shan, has actually held a dual appointment at WIV. Chao has several joint publications with Shi and others demonstrating GoF research. In one 2020 PNAS study, Chao, Shi and colleagues took a pre-epidemic Asian Zika virus strain (FSS13025 isolated in Cambodia in 2010) and inserted the 'V473M' substitution that significantly increased neurovirulence[5] in neonatal mice and produced higher viral loads in the placenta and fetal heads in pregnant mice. In addition, this E-V473M mutant strain was further studied in competition experiments in cynomolgus macaques. The results showed that this human-inserted mutation increased Zika's fitness for viral generation in macaques, a clear demonstration of GoF that was based on highly dangerous reverse genetics techniques.[6]

SARS-CoV-2 (Natural and Lab-Made)

In October 2021, researchers from the CAMS-run Christophe Merieux Laboratory in Beijing developed their own synthetic SARS-CoV-2 virus in the lab, which they refer to as the 'SARS-CoV-2-GFP replicon', with the logic that experimentation on this synthetic virus would more fully inform treatment options.[7] Despite titling their paper 'Construction of Non-infectious SARS-CoV-2 Replicons and Their Application in Drug Evaluation', they note that their synthetic virus did in fact replicate over the course of their experiment.[8]

In September 2020, He Yuxian from CAMS and a joint team of researchers from the PLA's AMMS, Beijing Institute of Lifeomics, and the Institute of Military Cognition and Brain Sciences published a study that describes their use of SARS-CoV-2 serial passaging. This is a well-known GoF technique focused on the respiratory tract of mice. The rationale for this study was that this GoF research using live SARS-CoV-2 virus would improve the efficacy of vaccines.[9]

This rationale can be assessed to be questionable, especially considering the use of serial passaging. This technique involves continuously selecting for the most infectious viral strains,

isolating them, and then combing and reinserting them back into mice thereby producing engineered viruses that are more infectious, lethal, and/or drug/vaccine-resistant than even the most dangerous SARS-CoV-2 viruses found in nature. The fact that the majority of He Yuxian's co-authors on this study come from overtly PLA-run institutions further solidifies this assessment.

CAMS is now a world leader in the development of synthetic viruses in the lab, including SARS-CoV-2 viruses, as well as engineering dangerous pathogens found in nature. This marks a major development in that CAMS has the independent capability to engineer a range of viruses for various applications, even if it is not possible to acquire a sufficient number of natural samples. Access to samples is no longer a scientific bottleneck and is no longer a source of Western leverage against Chinese institutes such as CAMS and, by extension, the joint WIV-DESTO facility in Pakistan.

MERS

The MERS virus emerged in Eastern Province in Saudi Arabia in 2012 and generated modest outbreak clusters across the Middle East as well as limited clusters in Southeast and South Asia. As the MERS virus was not well adapted for continuous human-to-human transmission, its pandemic potential remained limited and, at present, does not represent a major international security risk in nature. Critically, even during the early stages of the outbreak Dromedary Camels were identified as the key intermediary animal species between bats (MERS is a bat-borne virus) and humans thereby enabling multiple controls and preventative measures to be put in place.[10]

MERS represents a well-characterized virus that has a fully adjudicated outbreak investigation profile that enables continuous surveillance and control operations to be conducted. This is evidenced by the lack of any additional outbreaks of this specific bat-borne coronavirus in recent years. Given this stable situation, why would researchers deliberately infect non-human primates with the MERS coronavirus? This is exactly what a group of CAMS researchers did in 2014.

In a 2014 study titled, 'An animal model of MERS produced by infection of rhesus macaques with MERS coronavirus', Yao Yanfeng, Bao Linlin, Deng Wei and Qin Chuan from CAMS set out to determine if monkey models were effective to study the pathogenesis of MERS infections. This is despite the fact that monkeys had previously had no natural link with MERS and the full chain of infection of MERS had already been fully determined. As such, it can be assessed that the scientific/public health rationale of this study was flawed from the outset. These researchers also appear to have possibly worked with controversial Dutch GoF scientist, Ron Fouchier, at Erasmus University in Holland, whose own research has been periodically ceased under EU regulations related to weapons of mass destruction

In this CAMS study, the research team sourced their MERS samples from Erasmus and utilized them to directly infect the lungs of Rhesus Macaques and observed their physiological responses. The researchers reported that infected monkeys showed clinical signs of disease, virus replication, histological lesions, and neutralizing antibody production. They also reported that they could confirm that the monkey model supports viral growth and also manifests respiratory and generalized illness along with tissue pathology. Lastly, these CAMS researchers claim to have conducted similar experiments on mouse, ferret, and guinea pig models but decided not to publish the data.[11]

Dr. Bao Linlin of the Institute of Animal Laboratory Sciences (CAMS) is of particular interest in this MERS study as well her multiple studies on H7N9 and other GoF research on avian influenza viruses. Some of Bao's GoF research is virtually identical to the research conducted by Ron Fouchier[12] in that both have engineered avian influenza (H7N9 and H5N1) viruses to be able to transmit between ferrets via droplets.[13] However, while Fouchier's research was criticized internationally and disrupted, Bao's research has continued uninterrupted and with no apparent restrictions. When Bao's low domestic and international profile is contrasted with that of, for example, Shi Zheng-Li at WIV, this becomes even more apparent.

In summary, these specific studies clearly demonstrate a strong set of network linkages between CAMS, WIV, the PLA, and even UTMB in Texas along with the willingness and capability to conduct extraordinarily high-risk GoF experiments on some of the world's most dangerous pathogens. This network also has a proven capability to actually develop highly pathogenic synthetic viruses, the implications of which are difficult to overstate in terms of strategic significance. The CCP has the option to 'lift and drop' all of these known capabilities from CAMS into the joint WIV-DESTO military facility in Pakistan.

The Pakistan Army's Use of Terrorist Groups Generates Bioweapons Down-Streaming Risks, especially with Lashkar-e-Taiba

The Pakistan Army's use of irregular Islamist groups as a core component of its strategy towards India can be traced all the way back to the country's founding in 1947. Pakistan created a kaleidoscope of Islamist terrorist groups to carry out attacks initially in the Indian state of Jammu and Kashmir and eventually across India. Groups such as the Allah Tigers, Jaish-e-Mohammed, Harakat-ul-Jihad-i-Islami, and even the Muttahida Quami Movement (which is now an actual Karachi-centred political party) were all originally established, structured, armed, trained, and operationalized by the Pakistan Army's Inter-Services Intelligence (ISI). This is in addition to the ISI's formation and operationalization of the Taliban in Afghanistan and Pakistan's tribal areas as well. However, none of these terrorist groups have grown and expanded along the same trajectory as Lashkar-e-Taiba (LeT).

LeT was an originally Jammu and Kashmir-focused terrorist group that has carried out the most complex, bold, and lethal attacks in India, including the 2008 Mumbai massacre. LeT has also operated at the behest of ISI to arrest uncooperative members of the Pakistani Taliban within Pakistan itself and they have also operated in Afghanistan alongside the Pakistan Army's Special Services Group (SSG). LeT operators (especially technical specialists such as bombmakers) have been arrested as far away as France.

LeT also has the demonstrated capability to carry out special forces-type operations either independently (2008 Mumbai attacks) or jointly with Pakistan SSG and/or other units (Afghanistan in 2021). These advanced operational capabilities, LeT's autonomous status within Pakistan, and its continued focus on carrying out terrorist attacks in India make it a critical free variable in the CCP-Pakistan Army bioweapons development nexus.[14] It is possible that even the CCP has not fully appreciated and factored in these risks.

The Pakistani Army and Navy have both experienced multiple successful penetrations by Islamist groups, including in the senior officer corps. It should also be noted that despite LeT's official designation as an international terrorist group, the organization is now viewed as an unconventional extension of the Pakistan Army (and ISI in particular). LeT's founder

and leader, Hafiz Saeed, lives freely in Pakistan despite his decades-long track record of killing thousands of innocent people, mostly in India.

As such, there is a material risk of any jointly developed bioweapons being down-streamed to LeT (or another Islamist group) to carry out mass-casualty atrocities while providing Pakistan with the same type of plausible deniability that the CCP has sought to maintain. This is despite overwhelming evidence that SARS-CoV-2 was the result of a lab leak at the 'old' WIV in central Wuhan.[15] These are not risks that can in any way be managed, mitigated, or tolerated - they must be eliminated. ISI is subjected to even fewer constraints than their counterparts at WIV and CAMS who at least officially report to China's State Council. The ISI reports to no one, not even to the Prime Minister of Pakistan.

The Full Investigation, Assessment, and Elimination of the joint WIV-DESTO Program Needs to be a Top International Priority

As catastrophic as SARS-CoV-2 has been with millions of deaths and global disruption, in certain respects its roughly 1% fatality rate represents a 'near miss' event that could have been much worse, even if this rate was 2-3%. GoF work by WIV and CAMS on Zika, enhanced SARS-CoV-2 viruses (natural and synthetic), MERS, avian influenza viruses, Nipah (which has an 80% fatality rate) and others would all undoubtedly prove more lethal than the currently circulating SARS-CoV-2 pathogen. This bioweapons development is proven, documented, and in the case of CAMS in particular, has appeared to actually speed up over the course of the SARS-CoV-2 global pandemic. This overlays on top of Pakistan's proven, documented use of Islamist terrorist groups as a core component of state policy, especially LeT.

There is the real prospect of this type of CCP bioweapons development capability being directly transferred to a laboratory environment that is run by an Army that is unaccountable to anyone and has extensive links with Islamist groups who continue to carry out special forces-style terrorist operations. This cannot be tolerated. Whether through error or malicious intent, if the joint WIV-DESTO bioweapons program is left unchecked, we will be facing exponentially accelerating risks that many will find impossible to comprehend until they occur. Also, if this foundational component of the CCP's internationalization of its bioweapons program is not stopped in Pakistan, there will be no limiting principle to prevent the CCP from replicating this process elsewhere. Under such circumstances, our current world could become instantly unrecognizable without warning and could make the events of recent years seem relatively minor, much as many now view the SARS-CoV-1 outbreak in 2002.

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