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Tribute:
Dr G N Ramachandran: Diamond in the Crown of Indian BioScience

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Guest Article:
Frontline healthcare workers playing a vital role in achieving malaria elimination goal of India

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BIOTECH EXPRESS

News...

Volume 9 Issue 99 October 2021

Featured Biotech News | p24

Bio Controversies | p58

Regular Biotech News | p36

MORE INSIDE.....

Bio Notifications | p20

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Editorial

NIH Director Francis Collins resigned, is Fauci next after COVID origin controversy erupted?

by Kamal Pratap Singh

No one has asked for NIH Director Francis Collins resignation but his name come up in COVID controversies because of Dr Anthony Fauci which led him to exit this politicization of science issue. Senator Rand Paul and Rep. Jim Jordan are consistently criticizing Fauci over the funding and the other issues particularly mask mandates, vaccine mandates, lockdown measures among many which Fauci suggested and created panic, according to the duo.

In a recent cascade, as controversy heats up over the U.S. National Institutes of Health (NIH)'s involvement in funding dangerous gain of function research in Wuhan, China before the onset of the COVID-19 pandemic, NIH director Dr. Francis Collins has announced he will resign from his position by the end of 2021.

Collins spoke to NPR to discuss his resignation, taking the opportunity to decry opposition to the COVID-19 narrative propounded by the NIH and other public health agencies that have advocated for universal masking, lockdowns, and the mass deployment of experimental inoculations, measures that have led to serious psychological, emotional, and physical harm.

Documents obtained over the past year have shown that the National Institutes of Allergy and Infectious Diseases (NIAID), a sub-agency of the NIH headed by White House COVID czar Dr. Anthony Fauci, funneled money through New York-based non-profit Eco Health Alliance to support gain of function research conducted at the Wuhan Institute of Virology (WIV).

Box: Scandals recently associated with Dr Francis Collins

The following six scandals fully incriminate Collins for committing crimes against humanity, but you are unlikely to hear about any of them from the mainstream media:

The first scandal involves Collins serving on the advisory board of a conference sponsored by a Chinese military-linked genomics firm called BGI Genomics. BGI has been flagged numerous times by U.S. intelligence agencies for trying to "collect, store, and exploit biometric information" on American citizens through Wuhan coronavirus (Covid-19) testing kits. "According to the Federal Bureau of Investigation (FBI), the firm BGI has deep ties to both the Chinese Communist Party and its military," reported The National Pulse.

The second scandal involves Collins fully admitting that U.S. taxpayer dollars were given to the Wuhan Institute of Virology (WIV) for things that Collins says he "had no control over."

Collins also signed exclusive research deals with groups that function as Chinese Communist Party (CCP) military fronts. This is Collins' third scandal, and one that definitively constitutes treason.

In his fourth scandal, Collins helped fund more than 250 studies for communist Chinese military researchers. "Following a unique investigation into the origins of scientific research papers, the whopping level of collaboration with the Chinese military will further concerns in the United States that the political class has surrendered to the Chinese Communist Party," reported The National Pulse.

Ever since the start of the Virus pandemic, Collins has also been sending millions of dollars stolen from Americans to communist Chinese-run facilities, which reportedly used it for "research. This apparent money laundering operation, Collin's fifth scandal, involved his NIH funneling gobs of cash to the Chinese – and one of them actually came directly from Fauci's National Institute of Allergy and Infectious Diseases (NIAID), implicating him as well.

Finally, Collins' sixth scandal involved his NIH firing 54 researchers as part of an investigation that exposed them all for failing to disclose their financial ties to the CCP.

Some 189 researchers were investigated as part of the operation, exposing nearly half of them for maintaining secret ties to communist China. "The fresh round of terminations resulted from an ongoing investigation at the taxpayer-funded National Institutes of Health (NIH) into the failure of grant recipients to disclose financial ties to foreign governments," The National Pulse further reported.

"In reality, accountability in a post-COVID era is what likely shuffled Francis Collins off from his otherwise immortal coil at the top of the NIH. Not that the corporate media would ever tell you any of that."

Collins earlier supported Anthony Fauci, one of his NIH center directors and the nation's top infectious disease expert, when he was attacked by then-President Trump, and dismissed calls for Fauci's ouster or demotion, saying the idea was "unthinkable."

Let us take a look at the profile of these two highly regarded scientists whose steps are followed by scientific communities all over the world.But it is noteworthy to state that Collins kept a lower profile than Fauci, latter loves to do PR and fond of TV appearances.

Francis Collins, is an American physician-geneticist who discovered the genes associated with a number of diseases and led the Human Genome Project. He is director of the National Institutes of Health (NIH) since 2009. Before joining NIH, Collins had worked with colleagues to identify the gene for cystic fibrosis in 1989, followed a year later by the gene for neurofibromatosis, and the gene for Huntington's disease in 1993. Collins current research is focusing on studying genomics, epigenomics and single cell biology to understand causes and means of prevention for type 2 diabetes, and also seeks to develop new genetic therapies for Hutchinson-Gilford Progeria Syndrome.

While leading the National Human Genome Research Institute, Collins was elected to the Institute of Medicine and the National Academy of Sciences. He was awarded the Canada Gairdner International Award in 1990, Kilby International Award in 1993, Golden Plate Award of the American Academy of Achievement in 1994, Biotechnology Heritage Award with J. Craig Venter in 2001, from the Biotechnology Industry Organization (BIO) and the Chemical Heritage Foundation. Collins and Venter shared the "Biography of the Year" title from A&E Network in 2000. In 2005, Collins and Venter were honored as two of "America's Best Leaders" by U.S. News & World Report and the Harvard University Center for Public Leadership.

Now if we see what are Fauci's accomplishments it is rare to find what he has done scientifically that can be considered worthy his positions except the buttering he is doing while propagating myths. Like many other scientists, he indeed did some work like he elucidated some disease mechanism in HIV but even after his 50 years of service in highly regarded positions where money and other resources are plentiful, he is not able to find any cure of it. Fauci can be seen frequently on media platforms with his statements that ends nowhere and has no scientific evidences and top of that flip flop every day.

If we see therapy for HIV, Ron Woodroof a real film character of Dallas buyers'club and an electrician was even more scientific than Fauci, who was left with the knowledge that he has just 30 days to live but in a desperate attempt to treat himself, he found that the most effect drug is one which is still in the clinical trial stage in the US – AZT and he was denied for the trial. Subsequently, Ron Woodroof (albeit unsuccessfully) took the FDA to court to force them to allow the importation of the experimental HIV inhibitor Peptide T from Denmark. He argued that the government and pharmaceutical companies are conspiring to play God with their lives and are trying to make money by limiting the number of AIDS drugs on the market. A California federal judge eventually ruled against Ron Woodroof but a deal was struck with the FDA to allow him to get the drug and supply the FDA with his personal data.

Similar situation is also felt by many scientists and leaders who are constantly blaming government organizations and pharma companies for COVID pandemic. They think that Fauci and other some organizations do not want to end pandemic because they are in the favour of vaccine distribution of pharma majors which in turn are making huge profits. Recent advances in science showed that natural immunity is much better than vaccine immunity and thus vaccine mandates and lockdowns are not at all required.

Now as we have seen, Francis Collins, the highly decorated personality is resigning from the post of director because his name has been dragged for funding in origin of Cov gain of function studies that was performed in Wuhan using American money because Gain of function research is ban in America. Senator Rand Paul, Rep. Jim Jordan and several other scientists and leaders have concluded that funds were indeed facilitated by a third party source. The Intercept obtained 900 pages of documents in a Freedom of Information Act (FOIA) request confirming the NIH and Anthony Fauci's National Institute of Allergy and Infectious Diseases (NIAID) funded the Chinese Communist Party's (CCP) laboratories through Peter Daszak's EcoHealth Alliance.

In the recent presentation Senator Rand Paul said media is not honest, if you watch CNN is a complete disaster, older people have 10,000

times for chances of morbidity but 90% of them have been vaccinated. He added that there is a problem in the country, many people have politicized science like Dr Fauci.

During the conversation with Cavuto upon a question asked whether his resignation has "anything to do with this about what you knew, when you knew it and the source of the coronavirus, the Wuhan lab and whether deliberately or inadvertently your funding helped provide that?" "No, it didn't, Neil," Collins asserted. " Of course people are always looking for some kind of cause and effect here. I want to absolutely assure you and anybody else listening that that had nothing to do with my decision. But, he emphasized, "I can't rule out the possibility that secretly the Wuhan Institute got that virus and was studying it and had a lab accident and it got loose. I have no evidence at all to support that," he continued, "but I can't exclude it.

Asked whether he supports the lab-leak theory, Collins said he thinks "most likely this was a natural origin starting in a bat, maybe traveling through an intermediate host.

People around the world have criticized Fauci and to little extent Collins. One article wrote, Personally, I say good riddance, but a simple resignation isn't even a slap on the wrist. What these people did, either wittingly or unwittingly needs to be paid for, and we shouldn't tolerate any excuse from them. I couldn't care less if their intention was to start or a 'pandemic', or if it accidentally escaped. We need to start holding people in this country (USA) accountable for the choices and mistakes they make regardless of their intentions, and they should pay dearly for those mistakes—the moral ledger requires it.

The director of the NIH Francis Collins is stepping down and it shows that Biden is trying to keep a lid on a growing controversy. The resignation comes after documents showed that Collins made "untruthful" comments on US federal funding of gain-of-function research at the Wuhan Institute of Virology.

Recently, Richard Ebright of Rutgers University pointed out that Collins made false statements about the NIH's involvement in research at the Wuhan Institute of Virology.

During Senate testimony, Dr. Fauci has continuously denied charges that the United States funded gain of function research, leading Republican Sen. Rand Paul of Kentucky to submit a criminal referral to the DOJ alleging that Fauci lied to Congress. In June, Dr. Collins appeared to contradict Fauci's statements to Congress, admitting that the NIH indeed funded the research.

Steve Hilton, a political commentator and former political adviser who currently hosts a weekly current affairs show for Fox News, also suggested Collins is resigning from his role to "avoid accountability."

Noting that Collins announced his resignation less than two weeks after more than 100 Congressmen put their signatures to a letter calling upon the NIH to release details surrounding its connection with University of Pittsburgh's fetal research, Daleiden suggested that " before he leaves the NIH directorship, Dr. Collins should comply with the congressional document requests in full and salvage his legacy by revealing the full truth about government-sponsored trafficking of aborted infants."

There are certain penalties in place for those who commit treason – will they apply here?

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Tribute

Dr G N Ramachandran: Diamond in Crown of Indian BioScience

by Seema Pavgi Upadhye

"If you think you know it, then you do not know it, and if you know that you cannot know it, then you know it". Ramachandran elaborated on this interesting paradox from the ancient Hindu philosophy used to describe the Divine force of the Universe in Kena Upanishads in one of his Mathematical Philosophy (MATPHIL) reports.

Gopalasamudram Narayana Ramachandran (or simply GNR to those who knew him well) is one of those few scientists who have made India proud by their research. He had many lucrative assignments for doing research in the advanced western countries but like his mentor, C.V. Raman, he decided to work in India against all odds. He was one of the most brilliant Indian scientists of the 20th century. He made several important discoveries in molecular biophysics, especially in the study of protein structure. The discovery of triple helical structure of collagen was a fundamental advance in the understanding of peptide structure. "The Ramachandran phi-psi plot" or simply the "Ramachandran Plot" has become a standard description of protein structures in text books. When Ramachandran was doing research in biophysics in India the subject was just taking shape in the advanced countries and undoubtedly he was a pioneer in this field. He started two centres of molecular biophysics, first at the University of Madras, Chennai and second at the Indian Institute of Science, Bangalore. Both the centres

became internationally recognised centres for research in biophysics. He inspired a large number of young people to take up science, who made significant contribution in various aspects of biophysics. He had a deep interest in philosophy and in classical Indian and western music. He interpreted the philosophical ideas of Syaad Nyaan, 'the doctrine of may be', an age-old system in Jain philosophy, in mathematical form which he called 'Boolean Vector Matrix Formulation'. Besides being an accomplished great scientist he was a very good speaker. He could easily present highly complicated concepts in simple words which could be understood even by high school students. These days we hardly find such a scientist particularly in India. By any standards he was a superb teacher. He wrote poems on science, religion, philosophy and the Upanishads. He made exemplary donations to charitable institutions.

Ramachandran was born on October 8,1922 in Ernakulam near Cochin in Kerala. Ramachandran was the eldest son of G.R. Narayana Iyer and Lakshmi Ammal. At the time of his birth, Cochin was ruled by a Maharajah, who had full autonomy under the British Government. The Maharajah of Cochin was an enlightened ruler, under whose aegis educational and cultural institutes thrived. For higher education Cochin had a college known as the Maharajah's College . His father was a well-known professor of mathematics and he retired as the Principal of Maharajah's College. To quote Ramachandran on his father : "Because of his ability and thoroughness he became the most senior and respected member of the department and retired as the Principal. He had a very sharp mind in mathematics and he used to teach me mathematics. I had been exposed to most of the theories in analytical geometry even before I went to college. When I was in high school, he would bring books on mathematics from the library and give me some challenging theorem to prove every day. He would write equations and ask me to solve them. He was a wizard in mathematics". So no wonder that Ramachandran would develop a deep interest in mathematics since his childhood. We are told that as a school student he used to get a perfect score of 100 on all his mathematics examinations. After the Intermediate Examination, in which he stood first in the entire Madras State, Ramachandran joined the St. Joseph's College in Trichy in 1939. Here he enrolled himself in the BSc (Honours) degree in physics. Among the teachers in St. Joseph's College who stimulated Ramachandran's interest in physics were P.E. Subramaniam and a Jesuit priest, Father Rajam. Ramachandran stood first among all the physics honours students in the entire Madras Presidency.

Important research Contributions:

Discovery of the triple helical structure of the connective tissue protein called collagen.

'The Ramachandran phi-psi Plot' which has become a standard description of protein structure.

Development of the theory of image reconstruction from shadawgraphs (such as X-radiograms) using the Convolution Technique.

Prof. Raman requested the head of the Electrical Engineering Department to allow Ramachandran to join the Physics Department. However, when the request was persistently refused, Raman told the Head of the Electrical Engineering Department: "I am admitting Ramachandran into my department as he is a bit too bright to be in yours..." And in this way Ramachandran not only came to the physics department but he eventually became the most distinguished of Raman's students. Ramachandran was deeply influenced by C.V. Raman. The other two scientists who influenced Ramachandran were William Lawrence Bragg (1890-1978) and Linus Carl Pauling (1901-). Ramachandran obtained his MSc degree in 1944 from the Madras University. In those days the Indian Institute of Science was not a degree granting institution. Ramachandran obtained his Doctor of Science (DSc) degree in 1947 and decided to go to Cambridge in England to work in the Cavendish Laboratory, where Sir William Lawrence Bragg was the Director. Ramachandran succeeded in getting a prestigious scholarship for higher studies in England provided by the Royal Commissioners of the 1851 Exhibition. As he had already studied X-ray diffraction for his doctoral work in the Indian Institute of Science he easily became a part of the Cavendish group of crystallographers. However, he could not get the opportunity to work directly under Lawrence Bragg. He was assigned to work with Dr. W. A. Wooster. In Cambridge, Ramachandran worked in three projects - instrumentation, electronics and the development of a mathematical theory to study diffuse X-ray diffraction, and use it in determining the elastic constants of crystals.

After finishing his doctoral work in

Cambridge he returned to India in June of 1949. He was appointed as Assistant Professor of Physics, in the Department of Physics of the Indian Institute of Science. He was made in charge of the X-ray Diffraction Laboratory that he was instrumental in building as a student.

After about two years in the Indian Institute of Science he shifted to Madras University, one of the three universities that were first set up in India. The other two were Calcutta University and Bombay University. At that time Dr. A. Lakshmanaswamy Mudaliar was the Vice Chancellor of the Madras University. It was Mudaliar, who being influenced by the legendary. Prof. C.V. Raman, planned to establish post-graduate department in experimental physics at the University of Madras. He requested Prof. Raman to head this newly established department and he offered him financial and administrative autonomy for the development of the proposed department. Raman expressed his inability to head the department; but at the same time he recommended the name of Ramachandran. And this is how Ramachandran joined the Madras University in October of 1952 as the first professor and head of the Department of Physics. At the time, Ramachandran was just 30 years old.

Ramachandran's research work carried out at the Madras University brought an unprecedented level of recognition to the University. He organised two international conference in 1963 and 1968 and he was successful in bringing some of the most famous scientists in molecular biology and biophysics to Madras viz. Linus Pauling, Severe Ochoa, Mauris Wilkins, Paul Flory and others.

Ramachandran worked in a number of fields in physics, chemistry and biology. He contributed more than 250 publications and several reviews in well-known international journals. His first major research contribution was the discovery of the triple helical structure of collagen. Ramachandran was drawn to collagen by J.D. Bernal's remarks that structural proposals for collagen were unsatisfactory. Bernal made these remarks in a casual conversation during his visit to Madras in 1952. Triple helical structure of collagen was first published in 1955. Ramachandran co-authored this paper with Gopinath Kartha. Their concept of coiled-coil structure proved to be a fundamental advance in the understanding of polypeptide structure. Coiled-Coil structure means each of its three polypeptide chains are arranged in the form of a helix, and then the three chains together form a second helix. However, his structure was criticised by none other than Francis H.C. Crick, who alongwith James D. Watson, unraveled the helical structure ofD.N.A, the double helix. Crick and Alexander Rich wrote in the November 1955 issue ofNature: "Very recently Ramachandran and Kartha have made an important contribution by proposing a coiled-coil structure of collagen. We believe this idea to be basically correct but the actual structure suggested by them to be wrong."

The criticism of unacceptably short interatomic contact in the proposed structure of collagen led Ramachandran to devise a general method for describing stereochemical criterion for polypeptide structure and proteins. Ramachandran and his colleagues, V. Sasisekharan and C.Ramakrishnan laid the foundations for the conformational analysis of polypeptide chains. They introduced a two dimensional map what is today known in biochemical literature as the "Ramachandran phi -psi diagram" or simply "Ramachandran plot", which provide a rational basis for describing all stereochemically possible structures of polypeptides. They reduced the 'structure space' of protein chains to two-dimensional with dihedral (torsion) angles serving as variables. This had a profound impact on stereo-chemistry and structural biology.

A write-up on Ramachandran may not be complete without mentioning about his mental make-up. It was an open secret that he used to receive psychiatric treatment. He used to believe that other people were trying to read his mind and disturb his thought process. However, this did not affect his productivity in scientific research. He was a very highly temperamental man. Nobody knew when he would flare up. But then he would not hesitate to apologise to the person whom he offended by his behavior. He was a great teacher, but his students were afraid of him. He would hardly come down to an equal level with either his colleagues or his students, which is necessary for frank academic discussion. He had to leave the departments which he himself established and that too under unpleasant circumstances. And after leaving the departments, he hardly kept any interaction with his former colleagues or students.

Notable awards that Ramachandran received include the Shanti Swarup Bhatnagar Award for Physics in India (1961) and the Fellowship of the Royal Society of London. In 1999, the International Union of Crystallography honoured him with the Ewald Prize for his 'outstanding contributions to crystallography'. He was nominated for the Nobel Prize as well for his fundamental contributions in protein structure and function.

BRSI Upcoming Event

18th BRSI Convention

The 18th Convention of the Biotech Research Society, India will be held as the International Conference on Biotechnology for Resource Efficiency, Energy, Environment, Chemicals and Health (BREEECH-2021) during December 1-4, 2021 at Dehradun.

The event will be jointly organized by the CSIR-Indian Institute of Petroleum, Dehradun, Uttarakhand, India in association with the International Bioprocessing Association, France; the Centre for Energy and Environmental Sustainability (CEES)-India; CDC Jaipur and International Solid Waste Association (India chapter).

The event will be held at IIP, Dehradun. Prof Sudhir Sopory, President of the BRSI is the conference chair and Prof Huu Hao Ngo, University of Technology Sydney, Australia; Prof Claude Gilles Dussap, Universite Clermont Auvergne, France and Prof Samir Khanal, University of Hawaii, USA are conference international chairs. Dr Debashish Ghosh is the convener of the conference, Dr T Bhaskar is the Chairman of the local organizing committee, and Dr P Binod, COE, BRSI, Dr Bhavya Balahurumurthy, CSIR-IIP, Dehradun and Dr Kamlesh Choure, AKS University, Satna are its co-convener.

Details can be found at https://www.bre3ch2021.in/

Important Dates

01 July, 2021
Abstract Submission Opens
31August, 2021
Abstract Submission Closes
10 September, 2021
Acceptance Notification
15 October, 2021
Registration at Normal Rates
31 October, 2021
Registration Cancellation

Booking of Accomodation Registration may close earlier if maximum numbers of participants have been reached

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Guest Article

AFRICA FOOD PRIZE
Securing our future

ICRISAT awarded Africa Food Prize-2021

by Nilesh Mishra

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), headquartered in Hyderabad, India has won the 2021 Africa Food Prize for the Tropical Legumes projects work that has improved food security across 13 countries in sub-Saharan Africa.ICRISAT is a non-profit, non-political public international research organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world.

ICRISAT has been working towards improving the lives of smallholder farmers across sub-Saharan Africa since five decade through several flagship projects, including Tropical Legumes, which led to this award, together with its earlier significant contributions. Tropical Legumes were collaborative projects, led by ICRISAT and jointly implemented during 2007-2019,with the International Center for Tropical Agriculture (CIAT) and International Institute of Tropical Agriculture (IITA), and executed by national partners in 13 countries of sub-Saharan Africa and India and Bangladesh in Asia.

The significant impact the projects have made over the years include development of 266 improved legume varieties and almost half a million tons of seed for a range of legume crops, including cowpeas, pigeon peas, chickpea, common bean, groundnut, and soybean. These new varieties have helped over 25 million smallholder farmers become more resilient to climate change, as well as pest and disease outbreaks.In addition to these new varieties, the project trained 52 next generation scientists, who are already working in national research institutes across the continent.

Accepting the award, Dr. Jacqueline d'Arros Hughes, ICRISAT Director General, said, "The Africa Food Prize is a major accolade and recognition of ICRISAT's work in Africa and reinforces our belief that agriculture can be profitable for smallholder farmers. It is also testament to the work of our close collaborators, the national agriculture research and extension systems, without whose support this would not have been possible"."We dedicate this award to the smallholder farmers in the drylands of Africa, as they are the ones who inspire us with their patience and perseverance in the face of adversity," said Dr. Hughes.

Dr Arvind Kumar, Deputy Director General-Research, ICRISAT said- "It is heartening to see our research creating positive impact in dryland regions and in the lives of smallholder farmers, together with partners and ICRISAT winning Africa Food Prize is validation to that". "This recognition, also affirms ICRISAT's commitment and reach on ground for delivering benefit of R&D to the last mile"- he added.

Photo: Dr Rajeev K Varshney, Principal Investigator of Tropical Legumes III project together with national partners during field visit in Nigeria.

Expressing his gratitude, Prof. Rajeev K Varshney, Research Program Director- Accelerated Crop Improvement said- "It has been a privilege and honour for me to lead the award winning projects as Principal Investigator for 7 years (2007- 2020) and work with colleagues from CG centers and national partners in 15 countries." "Flagship projects like this are real game changer for improving the livelihoods of smallholder farmers in dryland regions of the world.- added Prof. Varshney.

These projects, worked across the agricultural value chain, starting from integration of genomics and molecular breeding tools to develop and deliver improved crop varieties in record time, to strengthen seed system for ensuring timely delivery of these varieties in the hands of smallholder farmers, to empowering national partners with sustainable capacities to run crop improvement programs, even after lifetime of the projects.

About the Africa Food Prize

The Africa Food Prize is the preeminent award recognizing an outstanding individual or institution that is leading the effort to change the reality of farming in Africa—from a struggle to survive to a business that thrives. The US $100,000 prize celebrates Africans who are taking control of Africa's agriculture agenda. It puts a spotlight on bold initiatives and technical innovations that can be replicated across the continent to create a new era of food security and economic opportunity for all Africans. Building on the values and principles established by the Yara Prize, the Africa Food Prize puts a bright spotlight on achievements and innovations with transformative power that can be scaled and replicated across the continent to eliminate hunger and poverty and provide a vital new source of employment and income.

About the ICRISAT

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is an international organization which conducts agricultural research for rural development, headquartered in Patancheru (Hyderabad, Telangana, India) with several regional centers (Bamako (Mali), Nairobi (Kenya) and research stations (Niamey (Niger), Kano (Nigeria), Lilongwe (Malawi), Addis Ababa (Ethiopia), Bulawayo (Zimbabwe). It was founded in 1972 by a consortium of organisations convened by the Ford and the Rockefeller foundations. Its charter was signed by the FAO and the UNDP.

More details about the TL projects is available at TL Hub:https://tropicallegumeshub.com/

Frontline healthcare workers playing a vital role in achieving malaria elimination goal of India

Shrikant Nema[1, 2]

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Malaria is still a serious problem in rural and tribal dominated areas of India. India reported an estimated 0.33 million cases, with almost equal proportions of P. falciparum and P. vivax in 2019 [1]. The tribal community represents 8.6% of the country's total population which contributed to 46% of total malaria cases and 47% malarial deaths in the country [2].

The utilization of health services is poor among them and they have their orthodox health beliefs. Person infected with malaria initially approaches the traditional healer and unlicensed medical practitioner (UMP) that delays in the correct malaria diagnosis and treatment that leads to continuous spread of infection and antimalarials drug resistance [3]. Therefore, training of UMP's for malaria diagnosis as per the national program would add taste in the flavour. However, Auxiliary Nurse Midwife (ANM) was envisaged for midwifery care in rural and tribal India, but they were later realised as multi-purpose workers, hence, their curriculum and trainings also were modified to fit a multi-purpose worker profile.

At present, malaria mostly remains in rural and tribal regions where preven-

tive measures are hindered by poor healthcare systems with insufficient human resources [4]. Thus, including local residents as malaria volunteer & socially vulnerable groups such as ethnic minorities and proper training to healthcare staff at village and district level could be helpful in malaria control. The network of malaria services expanded dramatically with the involvement of village-level female health volunteers, the Accredited Social Health Activists (ASHAs), in the provision of early case detection and complete treatment (EDCT) in malaria-endemic areas. They form an essential link between the community and health care delivery system. The ASHA is usually a woman with basic school level certification from the village, chosen by the community. They are sometimes overburdened by the other healthcare task but their presence in the village helps in the management of malaria cases [5]. ASHAs go door to door visiting the poorest and most vulnerable, to diagnose malaria, treat and report their activities to the sub-centre using the standard forms of the National Vector Borne Diseases Control Program. ASHAs were equipped with rapid diagnostic tests (RDTs) and anti-malarial drugs in line with the National Treatment Guidelines [6]. Peoples suffering from fever were encouraged to seek malaria diagnosis and treatment from ASHA's. They also create awareness about the various health-related services available to people, and encourage them to use those services.

Digital Healthcare tools hold tremendous opportunities in the form of mobile healthcare, remote diagnostics. Digitisation in malaria healthcare services, including surveillance, diagnosis, and treatment, may be helpful in malaria control [7]. The quantum shift from paper-based work to digital work and involvement of digital tools in the elimination program may change the mode of healthcare delivery in remote areas. This can be done by enabling the use of mobile application for surveillance and maintaining the track record of patients that can be made possible by giving periodical training to district health officials of community health centre in every district. This has been made possible by a series of efforts made by ASHA worker in their community.

Attaining and maintaining high coverage of the affected population with multiple measures poses serious challenges to the over-stretched health system to the most resource-constrained districts of Indian states [4]. These rural and tribal communities faced multiple barriers in timely access to malaria treatment resulting in a high, though under-reported malaria burden that fuelled the persistent transmission of the disease. Efforts of healthcare workers in the villages with their cooperation in the Malaria elimination program playing a vital role to achieve 'malaria-free India'.

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Science Academies Summer Research Fellowship Program for Students and Teachers 2022

The three national Science Academies offer several two-month Summer Fellowships to enable students/teachers (studying/teaching in India) to work with scientists associated with the three Academies during 2022. A copy of the application format, instructions to applicants including eligibility criteria, and a list of names of scientists/faculty who have consented to guide students/teachers to work on short-term projects is displayed in the online application. Applications are invited from interested students and teachers from all universities and colleges affiliated to UGC/AICTE/MCI Accredited Institutions of State Universities/Private Universities for these Fellowships. The application should include: (a) the application form in the prescribed format; (b) scanned copies of marks sheets from class X till the last examination; (c) a write-up (in about 150-250 words) as to what the applicant wants to learn and achieve. Student applicants should provide the email id of one of their teachers familiar with their work. The Academy will approach them for a recommendation letter in the prescribed format. The selected candidate should work with the assigned guide for two months any time during the calendar year, preferably during the summer. Applications should be submitted by logging onto one of our websites [www.ias.ac.in; http://www.insaindia.res.in and www.nasi.org.in]. The registration number assigned soon after the online submission must be quoted in all future correspondence.

The last date for receipt of applications online is 30 November 2021.

All India Institute of Medical Sciences, Bhubaneswar

Sijua, Post- Dumduma, Bhubaneswar 75101

Applications in the prescribed format are invited for the following posts on purely temporary basis for the Research Project titled "DHR-ICMR Advance Medical Oncology Diagnostic Services (DIAMONDS) under HTA In, Pilot Research Project" under Principal Investigator Dr. Gitanjali Batmanbane & Functional Principal Investigator Dr. Susama Patra, Professor & Head, Department of Pathology, AIIMS, Bhubaneswar as per the details given below:

Name of the Post Scientist-C
Number of Post 01 (UR)
Age limit 40 Years
Location of position AIIMS, Bhubaneswar
Duration of Post 12 Months (Initially)
Monthly Salary Rs 67000/- + 16%HRA

Essential Qualifications:

First Class Master's degree in Molecular Biology or Genetics or Medical Biochemistry Applied Biology, Life Sciences, Biotechnology, Medical Microbiology, Genetics, Microbiology, Biochemistry from a recognized university OR Second class M.Sc. with PhD degree in relevant subject from a recognized university OR B.Tech Biotechnology from a reputed university with 6 years of research experience.

How to apply?

All interested candidates should submit the duly filled application form in the prescribed format all original certificates of educational qualifications, experience certificate along with a passport size photo and set of self-attested photocopies of all documents by email to pathol_susama@aiimsbhubaneswar.edu.in before the day of interview.

Candidate should appear in person for Walk-In-Interview on 28-10-2021 (for Sr No 1, 2,3)and 29-10-2021 (for Sr No 4,5) at 09:00 AM at the following address:

Contact information

Dr Susama Patra, Functional Principal Investigator, Professor & Head, Department of Pathology & Lab Medicine, AIIMS, Bhubaneswar, Email: pathol_susama@aiimsbhubaneswar.edu.in
Phone No 9438884171/9438884175/9438884177

More information: https://aiimsbhubaneswar.nic.in/admin/Document/Notices/Advertisement1cd-1d6a1-258a-4890-b5d8-5fed6fa3d1e9.pdf

Notice

संस्थापनसेवाएं (भर्ती)/Establishment Services (Recruitment)
भारतीय प्रौद्योगिकीसंस्थान रुड़की/Indian Institute of Technology Roorkee
रुड़की /Roorkee247667(उत्तराखण्ड/Uttarakhand)
Tel : 01332- 284563

SPECIAL DRIVE FOR RECRUITMENT OF SC/ST/OBC/EWS/PD CANDIDATES TO FACULTY POSITIONS

Advt. No. IITR/Establishment/2021/03 **October 13, 2021**

Indian Institute of Technology Roorkee invites applications from SC, ST, OBC, EWS and PD candidates with an outstanding track record for positions at the levels of Professor, Associate Professor and Assistant Professor in the following Departments/School/Centres:

1. **Architecture and Planning**
2. **Applied Science and Engineering**
3. **Biosciences and Bioengineering**
4. **Chemical Engineering**
5. **Chemistry**
6. **Civil Engineering**
7. **Computer Science and Engineering**
8. **Design**
9. **Earthquake Engineering**
10. **Earth Sciences**
11. **Electrical Engineering**
12. **Electronics and Communication Engineering**
13. **Humanities and Social Sciences**
14. **Hydrology**
15. **Hydro and Renewable Energy**
16. **Management Studies**
17. **Mathematics**
18. **Mechanical and Industrial Engineering**
19. **Metallurgical and Materials Engineering**
20. **Paper Technology**
21. **Polymer and Process Engineering**
22. **Physics**
23. **Water Resources Development and Management**
24. **Mehta Family School of Data Science and Artificial Intelligence**
25. **Centre of Excellence in Disaster Mitigation and Management**
26. **Centre of Nanotechnology**
27. **Centre for Transportation systems**

Recruitment policies for IITs, as stipulated by the Government of India from time to time, will be applicable.

Last date for applying for the positions of Professor, Associate Professor and Assistant Professor under Special Recruitment Drive is midnight of **November 30, 2021**.

PhD Admission Program

DBT-National Institute of Animal Biotechnology (NIAB)

NIAB invites applications for admission to its PhD program from highly motivated students for the 2021 session. NIAB is an autonomous institution of the Department of Biotechnology (DBT), Government of India, leading in basic and translational research on animal health and productivity and human-animal interface with a motto to improve animal health for human welfare. The institute has a 100–acre campus at Gachibowli, Hyderabad.

The institute provides opportunities for pursuing cutting edge research using advanced technologies in frontier areas of science such as development of next-generation vaccines, immunology, genetics, genomics, gene and protein engineering, host-pathogen interactions, patho-genomics, disease diagnostics, nanotechnology; bioinformatics, drug delivery platforms; nutrition, reproductive biotechnology; stem cells, gene editing & transgenic technology for humanized mouse models and farm animals, zoonosis and One Health.

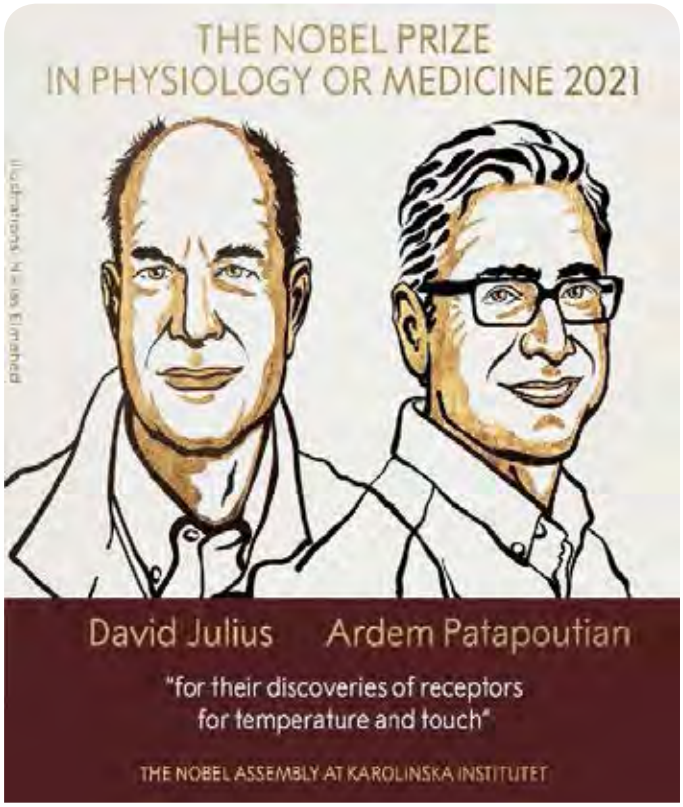
Eligibility Criteria: Individuals desirous of seeking admission to PhD program at NIAB must have a Master's degree (M. Sc., M. Tech., M. V. Sc. or M. Pharm.) or MBBS or B. Tech. degree in any branch of Life Science. Candidates must mandatorily have secured CSIR/UGC/DBT/ICMR/INSPIRE NET JRF/UGC-RGNF or any other national research fellowship for 5 years. Those with only GATE, MPAT or other certification exams are not eligible. The terms and conditions, fellowship amount, etc. will be governed by the awarding agency and further subject to the rules and conventions of the Institute.

Application Procedure: Interested candidates who meet the above criteria may apply online in the prescribed form, through the link available at our online portal (Link for online form). Soft copies of certificates in support of date of birth, educational qualifications, reservation category (if applicable), and fellowship examination qualified must also be uploaded. Please contact academic@niab.org.in for any queries. The application portal will open on 04.10.2021 and will be closed on 30.10.2021.

Contact address: National Institute of Animal Biotechnology (NIAB), Survey No. 37, Extended Q City Road, Opp. Journalist Colony, Near, Gowlidoddi, Gachibowli, Hyderabad, Telangana – 500032. For enquiry Contact: Tel: +91 40 2312 0115.

Website: http://www.niab.org.in/, https://www.niab.res.in/

Featured Biotech News



Nobel Prize Award for Research About Temperature and Touch

October 4, 2021

David Julius and Ardem Patapoutian were honored for their discoveries about how heat, cold and touch can initiate signals in the nervous system.

Dr. Julius, a professor of physiology at the University of California, San Francisco, used a key ingredient in hot chili peppers to identify a protein in nerve cells that responds to uncomfortably hot temperatures.

Dr. Patapoutian, a molecular biologist at Scripps Research in La Jolla, Calif., led a team that, by poking individual cells with a tiny pipette, hit upon a receptor that responds to pressure, touch and the positioning of body parts.

After Dr. Julius's pivotal discovery of a heat-sensing protein in 1997, pharmaceutical companies poured billions of dollars into looking for nonopioid drugs that could dull pain by targeting the receptors. But while research is ongoing, the related treatments have so far run into huge obstacles, scientists said, and interest from drug makers has largely dried up.

The channel integral to the sense of touch became known as Piezo1, after the Greek word for pressure. That channel and a similar one, both described in a 2010 paper, are now known to regulate a number of bodily functions that involve stretching, said Dr. Walter Koroshetz, the director of the N.I.H. National Institute on Neurological Disorders and Stroke, which provided funding to Dr. Julius's and Dr. Patapoutian's labs. Those functions include the working of blood vessels, breathing and sensitivity to a full bladder.

The identification of pain receptors prompted a flurry of interest from pharmaceutical companies: If you could block the channel identified by Dr. Julius, they reasoned, you could address chronic pain.

Another is that the same channels responsive to heat also turned out to contribute to the control of body temperature. Blocking them was found to cause a slight fever — a potentially major liability.

2021 Lasker Award Celebrates Pioneers of mRNA and Optogenetics

September 27, 2021

The 2021 Lasker-DeBakey Clinical Award was awarded to Katalin Karikó, PhD, senior vice president at BioNTech RNA Pharmaceuticals, and Drew Weissman, MD, PhD, professor in vaccine research at the Perelman School of Medicine at the University of Pennsylvania. The pair's decades of research, and teamwork, pioneered the mRNA technology that led to the COVID-19 vaccines developed by Moderna and BioNTech/Pfizer.

Photo: Katalin Karikó (Left), and Drew Weissman (Right)

The Lasker Awards have been awarded annually since 1945 to living persons who have made major contributions to medical science or who have performed public service on behalf of medicine. They are administered by the Lasker Foundation, founded by Albert Lasker and his wife Mary Woodard Lasker (later a medical research activist). The awards are sometimes referred to as "America's Nobels".

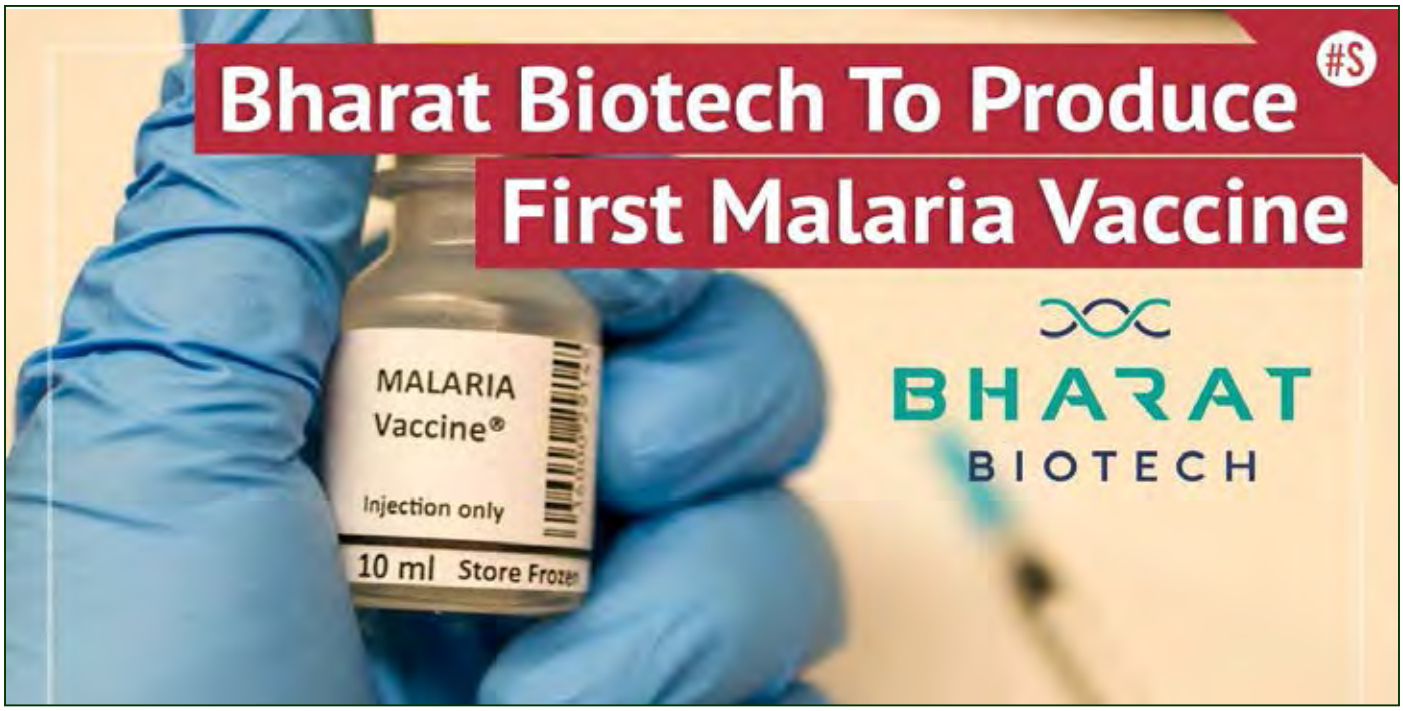
The Lasker Awards are given in three categories: basic research, clinical research, and special achievement.

The Lasker-Koshland Special Achievement Award honors research accomplishments and scientific statesmanship that engender the deepest feelings of awe and respect. This year, that honor was given to David Baltimore, PhD, professor emeritus at the California Institute of Technology. Baltimore won the Nobel Prize in Physiology or Medicine in 1975 for the discovery of reverse transcriptase—the enzyme found in retroviruses that converts RNA to DNA.

The Albert Lasker Basic Award, given for a fundamental discovery that opens up a new area of biomedical science, was awarded this year to a team of three researchers for their work in developing the field of optogenetics, including the early discovery that launched the field—that of light-sensitive microbial proteins that can activate or silence individual brain cells.

The 2021 winners are Peter Hegemann, PhD, professor of biophysics at Humboldt University of Berlin, Germany; Dieter Oesterhelt, PhD, emeritus director at the Max Planck Institute of Biochemistry; and Karl Deisseroth, PhD, professor of bioengineering and of psychiatry and behavioral sciences at Stanford University.

Bharat Biotech First in World to produce malaria vaccine



October 8, 2021

India's Bharat Biotech will be producing part of the world's only malaria vaccine that has been developed by Pharma major GSK, and was recently approved by WHO (World Health Organisation).

However, it may take a couple of years before the vaccine is launched in the market for use.

In January, this year, Hyderabad-based vaccine major announced that it entered a product transfer partnership with the pharma major GSK for its malaria vaccine, RTS, S/AS01E1.

GSK will retain the production of the adjuvant of the vaccine (AS01E) and will supply it to Bharat Biotech.

As part of this partnership, GSK would transfer RTS manufacturing technology to Bharat Biotech to produce the S antigen component of the malaria vaccine, and the license on all rights pertaining to it.

The RTS, S/AS01E malaria vaccine, developed by GSK for more than 30 years, and in partnership with PATH since 2001, has been piloted in regions of Ghana, Kenya, and Malawi under the Malaria Vaccine Implementation Programme (MVIP).

According to the joint statement issued earlier, GSK committed to donate up to 10 million RTS, S/AS01E doses for use in the pilot, and to supply up to 15 million doses annually until 2028 if the product was recommended for wider use by WHO. It is expected that by 2029, at the latest, Bharat Biotech will be the sole supplier of the vaccine, with GSK supplying the adjuvant AS01E to them.

Covaxin gets emergency use approval for kids aged 2-18 years

October 12, 2021

"After detailed deliberation, the committee recommended for grant of market authorization of the vaccine for the age group of 2 to 18 years for restricted use in emergency situation," the subject expert panel said in a statement.

Bharat Biotech had completed Phase-2 and Phase-3 trials of Covaxin on children below 18 years of age in September and submitted the trial data to the Drugs and Comptroller General of India (DCGI) at the start of this month.

The made in India vaccine will be administered in two doses, with a gap of 20 days between the first and second dose.

The Subject Expert Committee (SEC) on Covid-19 has granted emergency use approval to Bharat Biotech's Covaxin for children in the 2-18 years age group.

In a statement, Bharat Biotech said the clinical trial data it had submitted was thoroughly reviewed by the Central Drugs Standard Control Organisation (CDSCO) and SEC, who provided their positive recommendations.

"This represents one of the first approvals worldwide for Covid-19 vaccines for the 2-18 age group. Bharat Biotech sincerely thank the DCGI, Subject Experts Committee, and CDSCO for their expedited review process. We now await further regulatory approvals from the CDSCO prior to product launch and market availability of Covaxin for children," the vaccine developer said.

The emergency use authorisation, however, is subject to certain conditions. The developer of Covaxin will continue the study as per Whole Virion, Inactivated Corona Virus Vaccine the approved clinical trial protocol.

It will have to provide updated prescribing information/package Insert (PI), Summary of Product Characteristics (SmPC) and factsheet.

Moreover, the firm should submit safety data including the data on AEFI and AESI, with due analysis, every 15 days for the first two months and monthly thereafter and also as per requirement of New Drugs & Clinical Trials Rules, 2019, it said.

Govt to set up science museums across country: Union minister of India

September 30, 2021

Science and Technology Minister Jitendra Singh on Wednesday said the government will set up science museums across the country to promote scientific temper, particularly among children and the younger generation.

A memorandum of understanding (MoU) between the Council of Scientific and Industrial Research (CSIR) and the National Council of Science Museums (NCSM) was signed in the presence of G Kishan Reddy, Union Minister for Culture, Tourism and Development of Northeastern Region (DoNER), according to a statement.

The science museums aims to promote scientific curiosity and awareness among the common people across all sections of the society.

The MoU aims at setting up science museums at select CSIR laboratories to promote scientific curiosity and awareness among the common people across all sections of the society, the statement said.

The minister said this initiative is also in line with the vision of Modi, who desired that science and technology must reach every nook and corner of the country and said there is a need for outreach.

He said museums should not be static but must be dynamic and engaging and should emerge as crucibles of innovation, and the country must tap into the curiosity and enthusiasm in students and youngsters.

Singh said while the CSIR has tied up with Kendriya Vidyalayas, Navodaya Vidyalayas and Atal Tinkering Labs Schools of Niti Aayog, it must reach out to the remote areas.

India Withdraws Reciprocal Restrictions on UK Nationals Days After London Lifts Quarantine Guidelines

October 13, 2021

In a significant development, India withdrew the travel restrictions that it had imposed on UK nationals earlier. Issuing a fresh order, the Ministry of Health and Family Welfare said the earlier guidelines on international arrival dated February 17, 2021 shall be applicable for those arriving in India from the UK.

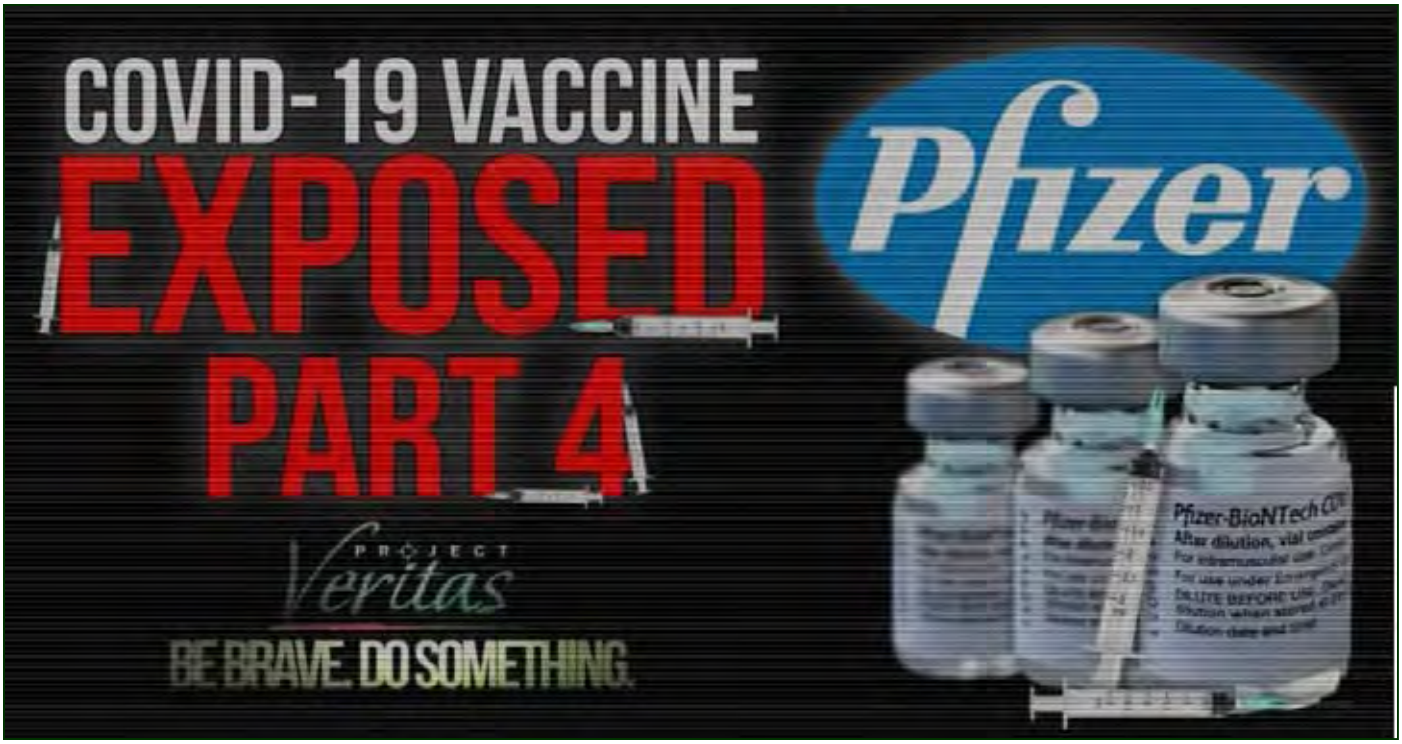
It must be noted that India had on October 1 decided to impose reciprocal travel restrictions on UK nationals including mandatory quarantine. The strict rules were applicable from October 4 for all UK nationals arriving in the country, irrespective of their vaccination status. India had said that all British nationals arriving in India from the UK will have to undergo a mandatory 10-day quarantine if they are fully vaccinated against COVID-19.

India's had made this announcement after the UK recognised Covishield vaccine produced by the Serum Institute of India but retained the 10-day quarantine period for fully vaccinated travellers from India.

The announcement from the UK follows a diplomatic row after the country had included Covishield in its approved vaccine formulations but refused to recognise Indians vaccinated with it as eligible for travel without quarantine measures. India had imposed reciprocal measures, requiring vaccinated British travellers to also quarantine at a declared destination on entry into India.

"We're now making it easier and cheaper for people to travel by allowing fully vaccinated travellers from non-red list countries to use Lateral Flow Tests on Day 2 of arrival, as long as they provide proof of use," said UK Health Secretary Sajid Javid.

Pfizer Scientists Say Natural Immunity "Probably Better"



October 07, 2021

Pfizer scientists agreed that naturally acquired immunity from COVID-19 is better than getting vaccinations in a recently shown undercover video released by Project Veritas.

Project Veritas is a non-profit journalism group founded by James O'Keefe in 2010 with the goal of "investigating and exposing corruption, dishonesty, self-dealing, waste, fraud and other misconduct in both public and private institutions."

In a 10-minute video released, three Pfizer officials, identified as Nick Karl, Chris Croce and Rahul Khandke, shared that being naturally immune (after one acquires the virus) is better "at that point" than a vaccine. They also said that their company demands that this information be withheld from the public.

"When somebody is naturally immune -- like they got COVID -- they probably have more antibodies against the virus…when you actually get the virus, you're going to start producing antibodies against multiple pieces of the virus…so, your antibodies are probably better at that point than the [COVID] vaccination," Karl said in the video.

Croce supported Karl's statements, adding that a person is "probably more" protected with antibodies from natural immunity than vaccines. In addition, Khandke had more to say in the same video about the company allegedly instructing employees to keep quiet on what they know about natural immunity.

"We're bred and taught to be like, 'vaccine is safer than actually getting COVID.' Honestly, we had to do so many seminars on this. You have no idea. Like, we have to sit there for hours and hours and listen to like - be like, 'you cannot talk about this in public," said Khandke.

This is the fourth video that Project Veritas has released over the past months exposing major drug companies. In September, the group released a video on a Johnson & Johnson employee who claimed that children do not need to take the COVID vaccine due to major potential side effects down the road.

Biocon Biologics to offer 15% stake to Serum Institute Life Sciences at valuation of $4.9 bn

September 25, 2021

Biocon Biologics Limited (BBL), a subsidiary of Biocon Ltd,. and Serum Institute Life Sciences Private Limited (SILS), a subsidiary of Serum Institute of India Pvt. Ltd,. announced a strategic alliance under which BBL will receive access to 100 million doses of vaccines per annum for 15 years in return for an equity stake to SILS.

In return, to get committed access to 100 million vaccine doses annually for 15 years with commercialisation rights of the SILS vaccine portfolio.

Under the terms of the agreement, BBL will offer approximately 15 per cent stake to SILS, at a post-money valuation of $4.9 billion, for which it will get committed access to 100 million doses of vaccines per annum for 15 years, primarily from SILS's upcoming vaccine facility in Pune with commercialisation rights of the SILS vaccine portfolio (including Covid-19 vaccines) for global markets, a press statement from Biocon Biologics said.

According to the terms of the agreement, BBL will generate a committed revenue stream and related margins, commencing H2, FY23. Adar Poonawalla will have a Board seat in Biocon Biologics Limited.

In addition to vaccines, the strategic alliance will also develop antibodies targeting several infectious diseases like Dengue, HIV, etc.

The two companies will enter Service Level Agreements (SLAs) to manufacture and distribute the vaccines and antibodies. Vaccines are a complementary business fit to BBL and provide a new dimension to improving global healthcare.

Research Shows that Vaccine Responses are Not One Size Fits All

October 13, 2021

Researchers at Simon Fraser University were among the earliest to discover the individualistic response that people have toward a vaccine or intervention, despite these being designed to treat the same condition.

The immunoglobulin heavy (IGH)-chain locus is responsible for producing genes that encode for different antibodies that are eventually used by B cells to fight off infections. These researchers sequenced the DNA in the IGH-chain locus in the chromosomes of 425 people of Asian, African and European descent. They located 11 possible large DNA insertions and deletions in the locus that were hypothesized to determine individualistic antibody gene count/diversity and, in some cases, disease susceptibility. This piece of comprehensive research was later integrated into the official human genome project assembly.

In another study, Rubella vaccines provoked significantly higher titers of neutralizing antibodies in children of African ethnicity compared to those of European descent or Hispanic ethnicity.

A U.S. study found significantly higher seroprevalence rates of antibodies to the measles virus in African Americans compared to Caucasians. Antibody titers to the pertussis vaccine were significantly and consistently higher in African American children compared to Caucasian children. In another study conducted in Northern Canada, native Innuit and Innu infants developed higher antibody titers to a measles vaccine compared with those of Caucasian descent.

Geographical and ecological factors also affect immune responses. Efficacy provided by the Bacillus Calmette-Guérin (BCG) tuberculosis vaccine has been shown to increase with a greater distance from the equator. The rotavirus vaccine, RotaTeq, also showed distinct patterns of efficacy in different geographical locations. Its effectiveness in preventing hospitalization and emergency room visits was 97% in the U.S., 95% in Europe and 90% in Latin America/Caribbic, but only 48.3% in Asia and 39.3% in Sub-Saharan Africa.

According to Dr. Chris Thompson, MD, an immunologist and associate professor of biology at Loyola University Maryland, factors that can influence a person's reaction to a vaccine include health, genetics, nutrition, age, gender, preexisting immunity, environment and the use of anti-inflammatory medicines.

30 Peer reviewed journal articles confirming natural immunity after COVID infection. Will Fauci now finally apologize to the 100 million or more Americans who've had COVID? Senator Rand Paul

October 12, 2021

Senator Rand Paul who have been constantly criticizing Fauci's statements about COVID-19 and advocating for the life and liberty of people tweeted a reference to an article which shows that natural immunity indeed has an important role to play in this pandemic.

From the beginning of the March 2020 lockdowns for the SARS-CoV-2 virus, the subject of natural immunity (also called post-infection immunity) has been neglected. Once the vaccination became widely available, what began with near silence at the beginning turned nearly into a complete blackout of the topic.

Even now, there is an absence of open discussion, presumably in the interests of promoting universal vaccination and required documentation of such vaccination as a condition of participating in public life and even the jobs marketplace. Still, the science exists. Many studies exist. Their authors deserve credit, recognition, and to have their voices heard.

These studies demonstrate what was and is already known: natural immunity for a SARS-type virus is robust, long-lasting, and broadly effective even in the case of mutations, generally more so than vaccines. In fact, a major contribution of 20th-century science has been to expand upon and further elucidate this principle that has been known since the ancient world. Every expert presumably knew this long before the current debates. The effort to pretend otherwise is a scientific scandal of the highest order, especially because the continued neglect of the topic is affecting the rights and freedoms of billions of people.

Individuals whose livelihoods and liberties are being deprecated and deleted need access to the scientific literature as it pertains to this virus. They should send a link to this page far and wide. The scientists have not been silent; they just haven't received the public attention they deserve.

Reference: https://brownstone.org/articles/natural-immunity-and-covid-19-twenty-nine-scientific-studies-to-share-with-employers-health-officials-and-politicians/

President Biden Announces Members of President's Council of Advisors on Science and Technology

October 1, 2021

Today, President Biden announced 30 of America's most distinguished leaders in science and technology as members of his President's Council of Advisors on Science and Technology (PCAST). A direct descendant of the scientific advisory committee established by President Eisenhower in 1957 in the weeks after the launch of Sputnik, PCAST is the sole body of external advisors charged with making science, technology, and innovation policy recommendations to the President and the White House.

Drawing from the nation's most talented and accomplished individuals, President Biden's PCAST includes 20 elected members of the National Academies of Sciences, Engineering and Medicine, five MacArthur "Genius" Fellows, two former Cabinet secretaries, and two Nobel laureates. Its members include experts in astrophysics and agriculture, biochemistry and computer engineering, ecology and entrepreneurship, immunology and nanotechnology, neuroscience and national security, social science and cybersecurity, and more.

PCAST is the sole body of external advisors charged with making science, technology, and innovation policy recommendations to the President and the White House.

Frances Arnold, Ph.D., is a biochemical engineer

Eric Lander, Ph.D., is a geneticist, molecular biologist, and mathematician

Frances Colón, Ph.D., is a neuroscientist

Lisa A. Cooper, M.D., M.P.H., is an internal medicine physician

Sue Desmond-Hellmann, M.D., M.P.H., is a physician-scientist

Paula Hammond, Ph.D., is a chemical engineer

Steve Pacala, Ph.D., is an ecologist and environmental biologist

William Press, Ph.D., is a computer scientist, computational biologist, and astrophysicist

Vicki Sato, Ph.D., is a biologist, immunologist, and biotechnology executive

Catherine Woteki, Ph.D., is an agriculture and food scientist and nutritionist

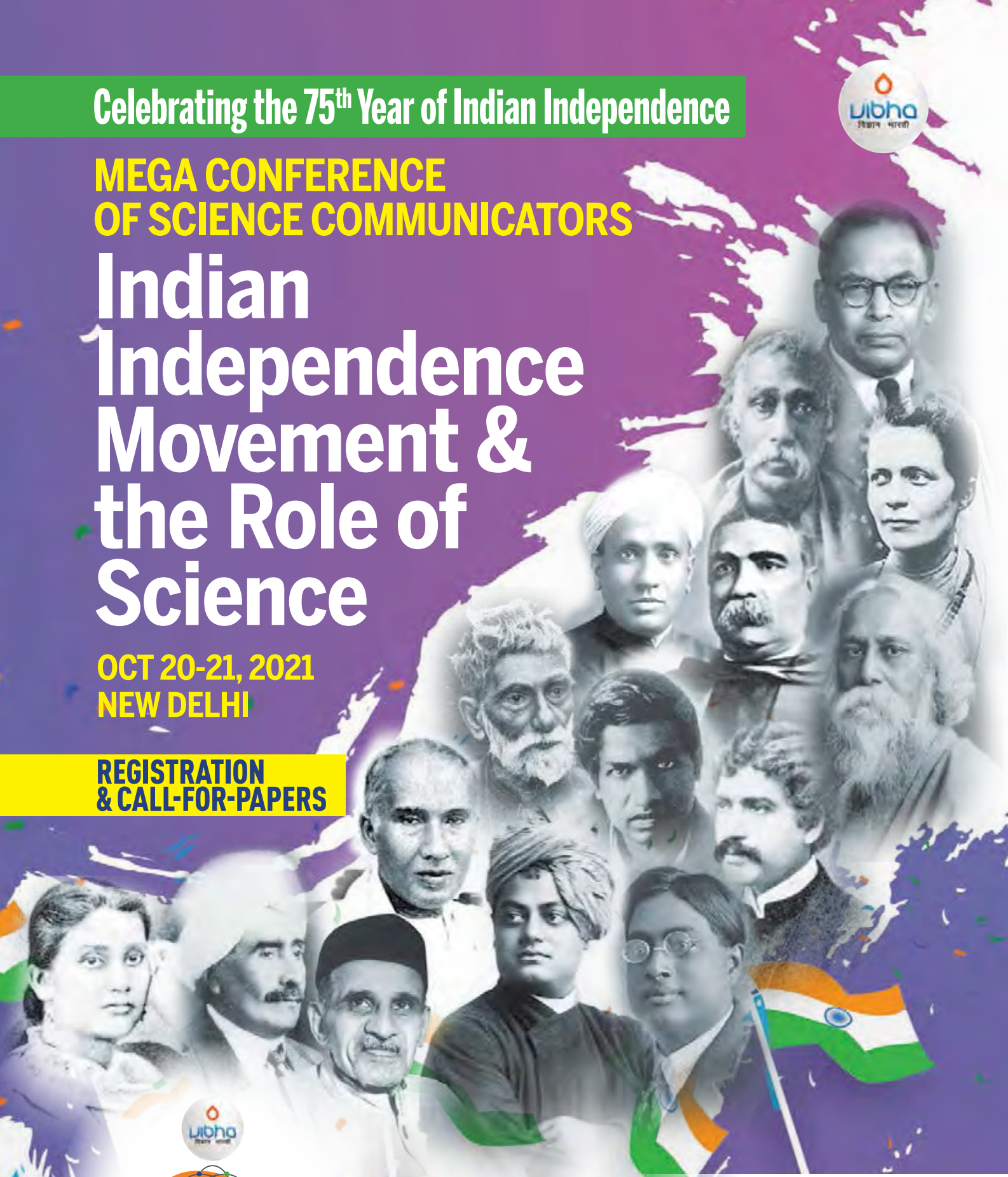
Celebrating the 75th Year of Indian Independence

MEGA CONFERENCE OF SCIENCE COMMUNICATORS

Indian Independence Movement & the Role of Science

OCT 20-21, 2021
NEW DELHI

REGISTRATION & CALL-FOR-PAPERS



vibha विज्ञान भारती

स्वतंत्रता का अमृत महोत्सव
Swatantrata Ka
Amrut Mahotsav

National Institute of Science Communication and Policy Research
NISCPR
सीएसआईआर-निस्पर

वि प्र
V P
VIGYAN PRASAR

Biotech News

Photo: Vaccine based drone model designed by ICMR and IIT-Kanpur granted permission to fly drones beyond the Visual Line Of Sight.

Indian Union Minister for Health and Family Welfare launches i-Drone, ICMR's drone based vaccine delivery model

October 05, 2021

Congratulating the people of the country on this innovative step, Mansukh Mandaviya said, "This is for the first time that a "Make in India' drone has been used in South Asia to transport COVID vaccine over an aerial distance of 15 kms in 12-15 mins from the Bishnupur district hospital to Loktak lake, Karang island in Manipur for administration at the PHC. The actual road distance between these locations is 26 kms. Today, 10 beneficiaries will receive the first dose and 8 will receive the second dose at the PHC."

He further added, "India is a home to geographical diversities and drones can be used to deliver essentials to the last mile. We can use drones in delivering important life-saving medicines, collecting blood samples. This technology can also be used in critical situations. This technology may prove a game changer in addressing the challenges in health care delivery, particularly health supplies in difficult areas."

In a landmark event that epitomizes the Indian Government's commitment to 'Antyodaya' in health; making healthcare accessible to the last citizen of the country, Mansukh Mandaviya, Union Minister for Health and Family Welfare launched ICMR's Drone Response and Outreach in North East (i-Drone). This is a delivery model to make sure that life-saving vaccines reach everyone.

Launching the initiative which would facilitate vaccine delivery to tough and hard-to-reach terrains of India, the Union Health Minister said, "Our immunization program for COVID-19 have already exceeded all expectations. I strongly believe that this initiative will further help us achieve the highest possible immunization coverage for COVID-19. Incorporating such drone technologies into the national programs would help deliver other vaccines and medical supplies as quickly as possible."

ICMR conducted an initial study in collaboration with Indian Institute of Technology, Kanpur to test the capacity of drones to carry and transfer vaccines safely. The study was conducted in Manipur, Nagaland and Andaman and Nicobar. These studies provided promising results on the basis of which the Ministry of Civil Aviation (MoCA), Directorate General of Civil Aviation (DGCA) and other regulatory authorities have granted permission to fly drones beyond the Visual Line of Sight.

India set to reopen to tourist visas as COVID situation eases

7 Oct 2021

India will reopen to tourism from October 15, the government said, after more than a year of closure due to the coronavirus pandemic.

Foreign nationals will be able to apply for a visa for the first time since March 2020, when Prime Minister Narendra Modi's government imposed a strict lockdown in response to the pandemic.

"After considering various inputs, the MHA (home ministry) has decided to begin granting fresh Tourist Visas for foreigners coming to India through chartered flights with effect from October 15, 2021," the home ministry said in a statement on Thursday.

It added that foreigners traveling to India via commercial flights will be able to enter on fresh tourist visas starting November 15, 2021.

The home ministry said all COVID-19 protocols "should be adhered to by the foreign tourists, carriers bringing them into India and all other stakeholders at landing stations".

Department of Animal Husbandry, India signs MoU with Bill and Melinda Gates Foundation to improve livestock sector

September 24, 2021

सत्यमेव जयते

Dept. of Animal Husbandry, Dairying & Fisheries

The department and Bill & Melinda Gates Foundation have signed "a multi-year Memorandum of Understanding to work together on sustainably improving India's livestock sector to support the nation's food and nutritional security, and protect the economic wellbeing of small-scale livestock producers."

The department is working to improve animal health and production programmes to ensure food security and economic development, an official statement said. "Developing the livestock sector envisages strengthening animal husbandry infrastructure, entrepreneurship development and implementing One Health framework. To meet food and nutritional security challenges and to safeguard human health, it is essential that animal health is accorded a priority," the statement said.

Through this collaboration, Bill & Melinda Gates Foundation will provide technical assistance for the design and delivery of new technologies and implementation of best practices that are relevant in the local context. The joint support programmes will be directed at improving livestock health, production, and animal nutrition, identifying scientific and technological solutions for major infectious diseases, providing technical assistance in translational sciences, identifying opportunities for scientific and technological collaboration, and implementing the One Health framework.

The department said that the implementation of the ''One Health Framework" will allow tracking and resolution of animal and human health challenges and will prevent possible infection and disease outbreaks. The National One Health platform will be established as part of this partnership to improve coordination, productivity, and support livelihoods of small-scale producers. Parshottam Rupala, Union Minister of Fisheries, Animal Husbandry and Dairying, said the Centre is committed to monitoring and significantly improving animal health and production in the country.

Nigeria Approves Genetically Modified TELA Maize for Open Cultivation

October 12, 2021

The Federal Government of Nigeria has granted environmental approval for evaluation and open cultivation of TELA Maize, a new maize variety genetically modified to tolerate moderate drought and resist the fall armyworm and stem borer. This development now places Nigeria one step closer to commercializing the biotech maize and becoming the second Afri-

can county after South Africa to do so.

The approval was contained in a Certificate issued to the country's Institute for Agricultural Research (IAR) whose researchers developed the variety. It was issued by the National Biosafety Management Agency (NBMA), the federal government agency mandated to regulate genetically modified products in the country. The Certificate, with permit code no. NBMA/CM/003, allows the commercial release of TELA Maize effective from October 8, 2021 to October 5, 2024.

A decision document accompanying the certificate from NBMA said that the decision to grant the permit after consideration of the advice of the National Biosafety Committee, National Biosafety Technical Sub-Committee and the risk management report provided by the applicant.

Names of 11 scientists declared for India's highest science Shanti Swarup Bhatnagar award

September 27, 2021

The names of 11 scientists, who received the country's highest science award Shanti Swarup Bhatnagar Prize for science and technology 2021, were announced during the 80th foundation day of the Council for Scientific and Industrial Research (CSIR) on Sunday.

The prize is given to Indian scientists below the age of 45 for outstanding research in seven fields—Biology, Chemistry, Environment Science, Engineering, Mathematics, Medicine and Physics.

For Biological Sciences, Dr Amit Singh, department of microbiology and cell biology, Indian Institute of Science, Bengaluru, and Dr Arun Kumar Shukla, department of biological sciences and bioengineering, Indian Institute of Technology Kanpur, were awarded. An expert in microbiology, Singh worked on deciphering the role of genes involved in Mycobacterium tuberculosis (Mtb) pathogenesis during his PhD. Shukla is an Indian structural biologist (cell scientist), who has been working at IIT Kanpur since 2014.

In chemical sciences, two researchers from the Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru, Dr Kanishka Biswas from the International Centre of Materials Science and Dr T Govindaraju, from the Bio-organic Chemistry Laboratory, announced as recipients. While Biswas' research field includes thermoelectric materials and devices that utilize the waste heat to generate electricity, Govindaraju's work focuses on chemical biology and is engaged in solving challenging problems related to human health and society.

The award for medical sciences went to Dr Jeemon Panniyammakal, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, and Dr Rohit Srivastava, department of biosciences and bioengineering, Indian Institute of Technology Bombay. Panniyammakal is a trained epidemiologist with at least a decade of experience in observational epidemiological studies and clinical trials, and Srivastava's research interest includes fluorescent biosensors, nanoengineered sensors, and photothermal therapy for breast cancer.

Image source: https://www.thebridgechronicle.com/news/coronavirus/tbc-explainer-whats-the-confusion-with-the-covid-19-vaccine-jab-interval

Long-Term Effectiveness after Moderna COVID vaccine is still a mystery

Oct 07, 2021

Italy's National Health Institute reported that efficacy remained stable seven months after the second mRNA COVID-19 vaccine. They evaluated data up to August 29 from more than 29 million people who had received two doses of either the Pfizer-BioNTech or Moderna vaccines. They found that effectiveness against infection after seven months was still 89% in the general population and at six months 96% against hospitalization, and 99% against death.

This is markedly different from a study run by Pfizer and published on October 4 in the journal The Lancet. In that study, the Pfizer-BioNTech vaccine infection prevention levels dropped from 88% to 47% six months after the second dose.

In seeming contrast to the Italian study, two real-world studies published in the New England Journal of Medicine, found that immunity from infection from the Pfizer-BioNTech vaccine dropped quickly after two shots. One study was out of Israel and the other out of Qatar. The Israeli study analyzed 4,800 health care workers and demonstrated that antibody levels decreased quickly "especially among men, among persons 65 years of age or older, and among persons with immunosuppression."

The study from Qatar evaluated actual infections in the country's population. Like Israel, they were primarily vaccinated with the Pfizer-BioNTech vaccine, BNT162b2.

"BNT162b2-induced protection against infection builds rapidly after the first dose, peaks in the first month after the second dose, and then gradually wanes in subsequent months," Laith Abu-Raddad of Weill Cornell Medicine-Qatar and colleagues wrote. "The waning appears to accelerate after the fourth month, to reach a low level of approximately 20% in subsequent months."

FDA, CDC See Shift in Vaccines, Pandemic Response Leadership

Sep 28, 2021

Peter Marks has been tapped to serve as acting director of the Office of Vaccines Research and Review at the U.S. Food and Drug Administration (FDA) following the resignation of two top officials at the agency who questioned the Biden administration's plan for COVID-19 booster shots.

Marion Gruber and Philip Krause, who oversaw the FDA's vaccines authorization division, announced their retirements at the beginning of September. The resignation came a few weeks before the two joined in publishing a paper in The Lancet that argued against evidence supporting the booster shot program. The report said there is insufficient evidence supporting the White House plan to give additional jabs of the COVID-19 vaccines to the general adult population.

"Current evidence does not, therefore, appear to show a need for boosting in the general population, in which efficacy against severe disease remains high," the paper reads.

Members of the FDA's Vaccines and Related Biological Products Advisory Committee opposed the administration of a booster shot to all people ages 16 and above who received the Pfizer vaccine. They unanimously supported the administration of a booster to the class of patients for which the booster was authorized.

Gruber will leave the FDA at the end of October and Krause intends to go in November.

The FDA is not the only health agency with a pandemic-related turnover. Henry Walke, who has helmed the COVID-19 response at the U.S. Centers for Disease Control and Prevention (CDC) is also stepping down, according to Politico. Citing "sources familiar with the matter," Walke will be replaced by Barbara Mahon, the deputy chief of the agency's enteric-disease branch. While Walke is stepping away from the COVID-19 response unit, he will remain at the agency as director of the CDC's Division of Preparedness and Emerging Infections.

Sputnik V Vaccine Won't Get Foreign Travelers into the US: Another story of Vaccine Passports

September 28, 2021

Russia's Sputnik V COVID-19 vaccine was the first authorized for use to stem the pandemic, even before it was fully tested. Since that time, its 91.6% efficacy against the original strain has stood up to peer review in The Lancet. However, the vaccine has gained little to no traction in the West and will not be recognized as a means to gain entry to the United States under new immunization rules.

Earlier this month, the U.S. government announced it would loosen restrictions on foreign visitors that were

set in place when the pandemic began. The new rules require immunization but, according to the Washington Post, excludes the millions of people who have received the Russian-made vaccine. The U.S. plan will require foreign visitors to have received a vaccine that has been approved or authorized by the U.S. Food and Drug Administration (FDA) or by the World Health Organization (WHO). The latter include those vaccines developed by Chinese biopharma companies Sinopharm and Sinovac.

Sputnik V isn't the only vaccine excluded by U.S. regulations. The Covaxin vaccine developed in India is also not on the list. The Covaxin vaccine, developed by Bharat Biotech, has been administered to more than 500 million people in that country. U.S.-based Ocugen is hoping to bring Covaxin to the United States for authorization. Phase IV studies are underway to determine real-world efficacy of the vaccine.

EU institutions made major improvements in reporting trial results, report finds

October 06, 2021

Major European research institutions have shown a "dramatic improvement" in their rates of reporting clinical trial results, and most are now actively uploading backlogs of missing results to an EU database, a progress report has found.1

Twenty one of the 26 largest medical research institutions in the EU's 27 countries are "now clearly working to clear their backlogs," said the report from Cochrane Austria and the advocacy groups TranspariMED and Health Action International. However, five institutions, all located in Italy and the Netherlands, showed "no clear sign of progress" on this.

New EU guidelines, stating that trial results should be uploaded to its database within 12 months of completion for adult drugs and six months for paediatric drugs, will become national law in every member state from 31 January 2022.

"I am delighted that so many prominent European institutions, each with more than 100 drug studies behind them, are clearing their backlogs," said Till Bruckner, TranspariMED's founder and the author of the report.

Schott to invest EUR 70 million to expand Jambusar plant capacity

Sep 22, 2021

SCHOTT is investing a total of 70 million euros in the expansion of its Indian tubing site in Jambusar, Gujarat, following several million investments in the last years, a statement from the company said.

"Against the backdrop of the growth trend in the Indian pharmaceutical business and the pandemic, we want to commit to secure the supply of pharma glass," explains Dr Patrick Markschläger, Executive Vice President, Business Unit Tubing, SCHOTT.

"The increase of over 30 per cent in the facility's overall Indian production capacity is at the same time a

commitment to supporting the government's vision of India becoming a global pharmaceutical hub," added Pawan Shukla, Managing Director, SCHOTT Glass India.

The additional tank is scheduled to go into operation at the beginning of 2023, with the second one following a year later. The expansion in Jambusar will create new jobs for around 225 employees and is part of a more than $1 billion strategic investment programme of SCHOTT through 2025, leveraging the global pharma tubing and packaging business.

In India, almost all approved vaccines are packed in Fiolax glass made by SCHOTT. With additional melting tanks and production lines, SCHOTT intends to ensure that this Asian manufacturing hub can adequately supply high-quality pharma glass for the Indian pharma industry and neighboring countries, added the statement.

Sterling Accuris Wellness raises Rs 250 cr from fund managed by Morgan Stanley

Sep 27, 2021

Sterling Accuris, a pathology-focused, diagnostic lab chain, started operations in 2016, and operates around 150 labs and collection centres across Gujarat, Delhi, Rajasthan and Madhya Pradesh

Sterling Accuris Wellness Pvt Ltd has signed an agreement to raise Rs 250 crore ($34 million) of equity funds from a fund managed by Morgan Stanley Private Equity Asia. Veda Corporate Advisors, a mid-market investment bank, advised the company and its promoters on the transaction.

Rajiv Sharma, MD and CEO of Sterling Accuris said the investment in Sterling Accuris will enable it to expand the lab network.

Morgan Stanley Private Equity Asia is a private equity investor in Asia-Pacific, managing third-party money funds, for over 20 years.

Arjun Saigal, Managing Director and Co-Head of MSPEA in India, said healthcare is a core focus for Morgan Stanley PE, and this will be the third investment in the Indian healthcare space.

Seven from MIT receive NIH, USA awards for 2021

October 06, 2021

On Oct. 5, the National Institutes of Health announced the names of 106 scientists who have been awarded grants through the High-Risk, High-Reward Research program to advance highly innovative biomedical and behavioral research. Seven of the recipients are MIT faculty members.

The High-Risk, High-Reward Research program catalyzes scientific discovery by supporting research proposals that, due to their inherent risk, may struggle in the traditional peer-review process despite their transformative potential. Program applicants are encouraged to pursue trailblazing ideas in any area of research relevant to the NIH's mission to advance knowledge and enhance health.

Four MIT researchers received New Innovator Awards, which recognize "unusually innovative research from early career investigators." They are:

Pulin Li is a member at the Whitehead Institute for Biomedical Research and an assistant professor in the Department of Biology.

Seychelle Vos, the Robert A. Swanson (1969) Career Development Professor of Life Sciences in the De-

partment of Biology, studies the interplay of gene expression and genome organization.

Xiao Wang, the Thomas D. and Virginia Cabot Assistant Professor of Chemistry and a member of the Broad Institute of MIT and Harvard.

Alison Wendlandt is a Cecil and Ida Green Career Development Assistant Professor of Chemistry.

Two MIT researchers have received Transformative Research Awards, which "promote cross-cutting, interdisciplinary approaches that could potentially create or challenge existing paradigms." The recipients are:

Manolis Kellis is a professor of computer science at MIT in the area of computational biology.

Myriam Heiman is the Latham Family Career Development Associate Professor of Neuroscience in the Department of Brain and Cognitive Sciences and an investigator in the Picower Institute for Learning and Memory.

Polina Anikeeva received a Pioneer Award.

This year, NIH issued 10 Pioneer awards, 64 New Innovator awards, 19 Transformative Research awards (10 general, four ALS-related, and five Covid-19-related), and 13 Early Independence awards for 2021. Funding for the awards comes from the NIH Common Fund, the National Institute of General Medical Sciences, the National Institute of Mental Health, and the National Institute of Neurological Disorders and Stroke.

Slovenia suspends Johnson vaccine over death of 20-year-old

September 29, 2021

Slovenia has suspended vaccinations with the Johnson & Johnson coronavirus jab while it probes the death of a 20-year-old woman, as thousands gathered to protest against vaccination in the small European Union nation. The suspension will be in place until experts examine whether there is a link between the woman's death from a stroke and the vaccine she received two weeks earlier, Health Minister Janez Poklukar said on Wednesday.

The one-dose jabs have grown in popularity in recent weeks in Slovenia after authorities widely introduced COVID passes, which will also be needed for going to work in all state-run firms. The government has approved the purchase of an additional 100,000 J&J doses from Hungary in response to the growing demand.

The woman's death this week was the second serious case of adverse effects of the Johnson & Johnson jabs, which have been administered to about 120,000 people in Slovenia, the official STA news agency reported.

Are too many Phase III cancer clinical trials set up to fail?

September 23, 2021

New research in the September 2021 issue of JNCCN -- Journal of the National Comprehensive Cancer Network finds that more than 80% of therapies tested in Phase III oncology trials did not achieve meaningful clinical benefit in prolonging survival. The researchers analyzed 362 industry-sponsored Phase III randomized trials in oncology from 2008 to 2017, and found that 87% were either false-positive or true-negative for meeting overall survival goals. More than half of the initially reported positive trials were found to be false-positive (58.4%) for overall survival, while the overwhelming majority of negative results were determined to be true-negative (with only 0.9% false-negative).

Dr. Shen continued: "Our study shows that reducing

false positive errors by imposing more stringent statistical threshold in Phase III trials is not likely to be practically feasible.

A better strategy is to rethink the process that leads to the decision of moving a new therapy to Phase III testing to begin with. More research is needed in this regard.""Our study highlights the need to more efficiently identify which new therapies merit Phase III testing," said lead researcher Changyu Shen, PhD, Associate Professor at Harvard Medical School at the time this study was conducted.

"In order to sustain the rate of innovation in cancer therapeutics and ensure that our patients have access to effective yet affordable therapies, the clinical trial pipeline in oncology must be efficient and accurate. Our work shows that in the past ten years, this has not been the case."

Most of the trials in this novel study focused on lung, breast, gastrointestinal, and hematologic cancers; trials with fewer than 100 participants were excluded, meaning rare cancer types were less likely to be included. The Phase III trials were predominately two-arm studies of an interventional regimen compared with a control treatment.

"This paper shows that a lot of drugs with 'positive' Phase III trials may have a smaller ultimate benefit than was expected, and that changing the threshold for statistical significance is not a quick fix," said Elizabeth A. Handorf, PhD, Associate Research Professor, Fox Chase Cancer Center, who was not involved in this research. "I think it highlights the need for more efficient study designs, like adaptive trials, and clear definitions of what makes an effect clinically meaningful."

Journal Reference: Underperformance of Contemporary Phase III Oncology Trials and Strategies for Improvement. Journal of the National Comprehensive Cancer Network, 2021; 19 (9): 1072 DOI: 10.6004/jnccn.2020.7690

Bioengineers develop new class of human-powered bioelectronics

September 30, 2021

A team of bioengineers at the UCLA Samueli School of Engineering has invented a novel soft and flexible self-powered bioelectronic device. The technology converts human body motions -- from bending an elbow to subtle movements such as a pulse on one's wrist -- into electricity that could be used to power wearable and implantable diagnostic sensors.

The researchers discovered that the magnetoelastic effect, which is the change of how much a material is magnetized when tiny magnets are constantly pushed together and pulled apart by mechanical pressure, can exist in a soft and flexible system -- not just one that is rigid. To prove their concept, the team used microscopic magnets dispersed in a paper-thin silicone matrix to generate a magnetic field that changes in strength as the matrix undulated. As the magnetic field's strength shifts, electricity is generated.

Chen and his team built a small, flexible magnetoelastic generator (about the size of a U.S. quarter) made of a platinum-catalyzed silicone polymer matrix and neodymium-iron-boron nanomagnets. They then affixed it to a subject's elbow with a soft, stretchy silicone band. The magnetoelastic effect they observed was four times greater than similarly sized setups

with rigid metal alloys. As a result, the device generated electrical currents of 4.27 milliamperes per square centimeter, which is 10,000 times better than the next best comparable technology.

In fact, the flexible magnetoelastic generator is so sensitive that it could convert human pulse waves into electrical signals and act as a self-powered, waterproof heart-rate monitor. The electricity generated can also be used to sustainably power other wearable devices, such as a sweat sensor or a thermometer.

A patent on the technology has been filed by the UCLA Technology Development Group.

Journal Reference: Giant magnetoelastic effect in soft systems for bioelectronics. Nature Materials, 2021; DOI: 10.1038/s41563-021-01093-1

COVID-19 pandemic has caused the biggest decrease in life expectancy since World War II, study finds

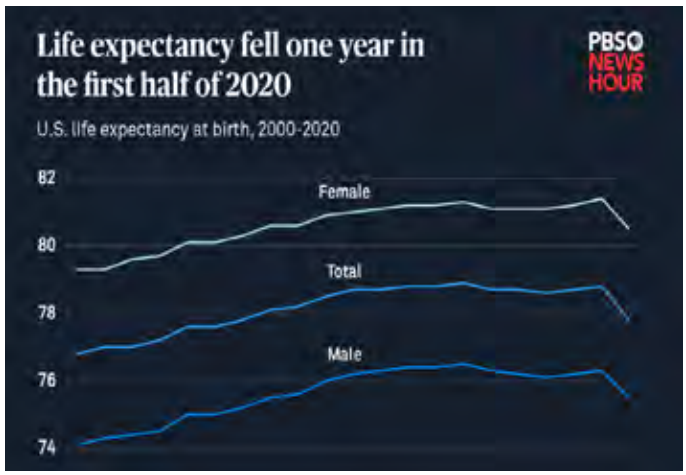
September 27, 2021

According to the study's co-lead author Dr José Manuel Aburto, 'For Western European countries such as Spain, England and Wales, Italy, Belgium, among others, the last time such large magnitudes of declines in life expectancy at birth were observed in a single year was during WW-II.'

But, he says, the scale of the life expectancy losses was stark across most countries studied, '22 countries included in our study experienced larger losses than half a year in 2020. Females in eight countries and males in 11 countries experienced losses larger than a year. To contextualize, it took on average 5.6 years for these countries to achieve a one-year increase in life expectancy recently: progress wiped out over the course of 2020 by COVID-19.'

Across most of the 29 countries, males saw larger life expectancy declines than females. The largest declines in life expectancy were observed among males in the US, who saw a decline of 2.2 years relative to 2019 levels, followed by Lithuanian males (1.7 years).

According to co-lead author, Dr Ridhi Kashyap, 'The large declines in life expectancy observed in the US can partly be explained by the notable increase in mortality at working ages observed in 2020. In the US, increases in mortality in the under 60 age group contributed most significantly to life expectancy declines, whereas across most of Europe increases in mortality above age 60 contributed more significantly.'



In addition to these age patterns, the team's analysis reveals that most life expectancy reductions across different countries were attributable to official COVID-19 deaths.

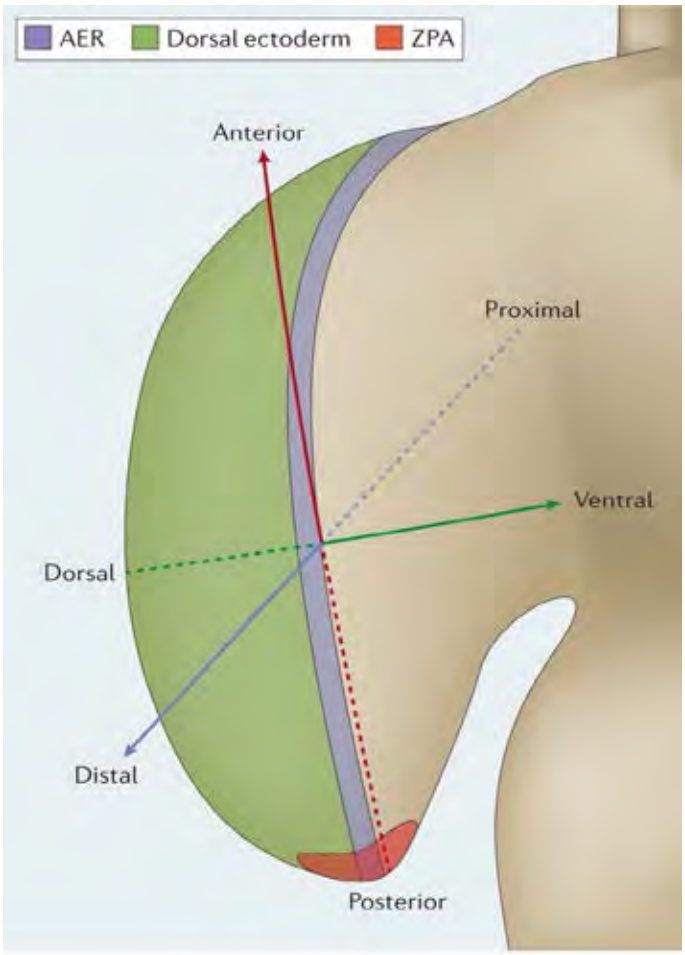
Dr Kashyap adds, 'While we know that there are several issues linked to the counting of COVID-19 deaths, such as inadequate testing or misclassification, the fact that our results highlight such a large impact that is directly attributable to COVID-19 shows how devastating a shock it has been for many countries. We urgently call for the publication and availability of more disaggregated data from a wider-range of countries, including low- and middle-income countries, to better understand the impacts of the pandemic globally.'

Journal Reference: Quantifying impacts of the COVID-19 pandemic through life-expectancy losses: a population-level study of 29 countries. International Journal of Epidemiology, Sept. 27, 2021; DOI: 10.1093/ije/dyab207

Gene linked to evolution of limb development identified

October 06, 2021

The findings, published in Current Biology Oct. 4, identify a gene that plays a central role in the evolution of limb development in vertebrates. By manipulating this gene in mice, researchers were able to activate an ancestral form of limb development seen in early tetrapods (four-legged vertebrates).



In the limbs of all tetrapods, the bones on the hands and feet on the outside edge form first, known as postaxial development. The study focuses on salamanders, which are the only exception to this rule: their limb bones develop preaxially, or from the inside edge; the thumb before pinky.

In both mice and axolotl salamanders, researchers manipulated the function of Gli3, a gene that is known to be important in regulating the pattern of limb development. Mice with excess GLi3 repressor activity reverted to preaxial limb development -- just like salamanders. Conversely, when Gli3 was "knocked out" in salamanders, they developed limbs postaxially, like the mice and all other tetrapods.

Journal Reference: Anna Trofka, Bau-Lin Huang, Jianjian Zhu, William F. Heinz, Valentin Magidson, Yuki Shibata, Yun-Bo Shi, Basile Tarchini, H. Scott Stadler, Mirindi Kabangu, Nour W. Al Haj Baddar, S. Randal Voss, Susan Mackem. Genetic basis for an evolutionary shift from ancestral preaxial to postaxial limb polarity in non-urodele vertebrates. Current Biology, 2021; DOI: 10.1016/j.cub.2021.09.010

Stress of COVID-19 pandemic caused irregular menstrual cycles, study found

September 29, 2021

The study surveyed more than 200 women and people who menstruate in the United States between July and August 2020 in order to better understand how stress during the COVID-19 pandemic influenced their menstrual cycles. More than half (54%) of the individuals in the study experienced changes in their menstrual cycle following the start of the COVID-19 pandemic in March 2020.

Individuals who experienced higher levels of stress during the COVID-19 pandemic were more likely to experience heavier menstrual bleeding and a longer duration of their period, compared to individuals with moderate stress levels, the study found.

The study, "Impact of Stress on Menstrual Cyclicity During the COVID-19 Pandemic: A Survey Study," was published September 28 in the Journal of Women's Health. It provides a better understanding of how the COVID-19 pandemic has impacted women's mental and reproductive health, the study authors said.

"We know added stress can negatively impact our overall health and well-being, but for women and people who menstruate, stress can also disrupt normal menstrual cycle patterns and overall reproductive health," said lead and corresponding author Nicole Woitowich, research assistant professor of medical social sciences at Northwestern University Feinberg School of Medicine.

Prior research has found that menstrual cycle irregularities are often reported by women who experience mood disorders such as anxiety and depression, or by those who are facing acute life stressors such as natural disasters, displacement, famine or defection.

Journal Reference: Impact of Stress on Menstrual Cyclicity During the Covid-19 Pandemic: A Survey Study. Journal of Women's Health, 2021; DOI: 10.1089/jwh.2021.0158

Study detects origins of Huntington's disease in two-week-old synthetic human embryos

October 5, 2021

Huntington's disease is a fatal condition involving the death of brain cells, typically striking in midlife. But new findings suggest the disease process starts decades earlier. Although symptoms emerge in adulthood, researchers have been able to detect the earliest effects of Huntington's in the first two weeks of human embryonic development.

In the new study, researchers examined the effects of Huntington's mutation at an earlier stage, called gastrulation, during which the two-week-old embryo starts to form the three embryonic germ layers, from which the progenitors of all cell types, including brain cells emerge.

For the study, the researchers created synthetic human embryos -- lab-generated embryos that are derived from stem cells and mimic the behavior of human cells during the early stages of development. They then used the gene-editing method CRISPR/Cas9 to insert the range of Huntington's mutations found in people with the disease into the embryos.

Journal Reference: Huntingtin CAG expansion impairs germ layer patterning in synthetic human 2D gastruloids through polarity defects. Development, 2021; 148 (19) DOI: 10.1242/dev.199513

Study identifies protein important for motor coordination and exercise performance

September 29, 2021

Researchers at Karolinska Institutet in Sweden have identified a protein that improves muscular metabolism, motor coordination and exercise performance in mice. The findings, published in Cell Metabolism, could be of therapeutic value for patients with muscle and neurological diseases, such as ALS.

In the current study, researchers at Karolinska Institutet wanted to know how a muscle-produced protein called neurturin affects neuromuscular function. Understanding what signals mediate motor neuron and muscle communication is essential for exploring new treatments for muscle-related and neurological diseases, such as amyotrophic lateral sclerosis (ALS).

The researchers found that mice that were genetically modified to produce more neurturin in muscle cells significantly improved their muscle metabolism, exercise performance and motor coordination compared to regular mice. The high neurturin mice also had an increased number of motor neurons of a type that is more resistant to degeneration in diseases like ALS.

"To find out that a molecule released from muscle fibres can actually change motor neuron identity, shifting them to a type that is associated with more resistance to degeneration opens really exciting possibilities for the future," Jorge Ruas adds.

As a next step, the researchers are hoping to explore the therapeutic possibilities of neurturin in mouse models of type 2 diabetes, obesity and ALS. They are also working on modifying the administration of neurturin to allow it to be used as a potential drug.

Journal Reference: Muscle-secreted neurturin couples myofiber oxidative metabolism and slow motor neuron identity. Cell Metabolism, 2021 DOI: 10.1016/j.cmet.2021.09.003

Excess deaths in people with mental health conditions increased during the COVID-19 pandemic

October 8, 2021

The greater number of deaths amongst those with mental health conditions and intellectual disabilities has been amplified during the COVID-19 pandemic, a study based on more than 160,000 patients has revealed. The study was published in the run up to World Mental Health Day on 10 October 2021 which this year has the theme 'Mental Health in an Unequal World'.

Deaths from COVID-19 among those with learning disabilities were nine times higher than the general population during the first lockdown period, according to the study, and for those with eating disorders almost five times higher. For those with personality disorders and those with dementia, deaths from COVID-19 were about four times higher than the general population and more than three times higher in people with schizophrenia.

The research was part-funded by the National Institute for Health Research (NIHR) Maudsley Biomedical Research Centre (BRC) and used the Clinical Record Interactive Search (CRIS) system to analyse anonymised data from clinical e-records of patients from South London.

Lead author Dr Jayati Das-Munshi, Reader in Social and Psychiatric Epidemiology at King's College London and Honorary Consultant Psychiatrist with South London and Maudsley NHS Foundation Trust, said: "The results from our study paint a stark picture of how the existing vulnerability of those with mental health conditions and intellectual disabilities have worsened during the COVID-19 pandemic. The higher death rates compared to the general population were associated with more deaths from COVID-19 infection itself, as well as deaths from other causes.

Senior author Rob Stewart, Professor of Psychiatric Epidemiology & Clinical Informatics at the Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London, said: "These findings and their implications illustrate the importance of being able to learn from the information contained in health records. We have worked with the Maudsley's CRIS platform for nearly 15 years now and a key focus has been to highlight inequalities in mortality and general health. Because CRIS information is updated on a weekly basis, this has allowed us to track the progress of the COVID-19 pandemic and its impact on mental health services."

Deaths in those with mental health conditions and intellectual disabilities fell from July 2020 to September 2020 as COVID-19 cases fell and lockdowns eased, however remained double that of the general population which was similar to the figures before the pandemic.

Similar mortality trends were observed across minority ethnic groups within the sample, with South Asian and Black Caribbean people with severe mental health conditions and intellectual disabilities being 2.5 times more likely to die in the pandemic period compared to the year prior to the pandemic. Elevated mortality risks were also evident for White British and Black African people with severe mental health conditions and intellectual disabilities.

Personality traits linked to hallmarks of Alzheimer's disease

October 16, 2021

New research from the Florida State University College of Medicine found that changes in the brain associated with Alzheimer's disease are often visible early on in individuals with personality traits associated with the condition.

The study focused on two traits previously linked to

the risk of dementia: neuroticism, which measures a predisposition for negative emotions, and conscientiousness, which measures the tendency to be careful, organized, goal-directed and responsible. The studies combined included more than 3,000 participants.

In both the BLSA and meta-analysis, the researchers found more amyloid and tau deposits (the proteins responsible for the plaques and tangles that characterize Alzheimer's disease) in participants who scored higher in neuroticism and lower in conscientiousness.

The team also found associations to be stronger in studies of cognitively normal people compared to studies that included people with cognitive problems.

The findings suggest that personality can help protect against Alzheimer's and other neurological diseases by delaying or preventing the emergence of neuropathology for those strong in conscientiousness and low in neuroticism.

Journal Reference: Personality associations with amyloid and tau: Results from the Baltimore Longitudinal Study of Aging and meta-analysis.. Biological Psychiatry, 2021; DOI: 10.1016/j.biopsych.2021.08.021

COVID-19 may be heading towards endemic stage in India, says virologist Gagandeep Kang

September 25, 2021

Top virologist Dr Gagandeep Kang said on Monday that the coronavirus pandemic in the country may be heading towards endemic stage, adding that a third wave, if it does take place, is likely to be due to local flare-ups that would be smaller and spread wider across the country.

"When you have something that is not going away in the near future, then it is heading towards endemicity. Right now, we are not looking at eliminating SARS-CoV-2. This means that the virus has to become endemic," Dr Kang, who teaches at Vellore's Christian Medical College, said in an interview with PTI.

An endemic stage is one when a disease or illness, instead of going away, is regularly found in a particular region, meaning that people there have to learn to live with it.

Explaining further, the vaccinologist said, "There have been several endemic diseases, such as influenza. But there can also be a pandemic layered on top of an epidemic disease. Thus, if there is a new variant, which totally escapes the immune response, there could be yet another pandemic. However, that doesn't mean that SARS-CoV-2 is only a pandemic, and has stopped being endemic."

A potential third wave, Dr Kang projected, would not take place on a scale as big as that during the previous two waves. "What we would see are local, smaller flare-ups that would be spread wider across the country. Together, these may form a third wave if there is a lot of behavioural change during the festive season. However, its scale won't be anything like what we saw before," she said.

She also called for development of better vaccines to deal with new, emerging variants of Covid-19. "Our vaccines are based on the ancestral variant of Sars-CoV-2. Are these the best that we have? I think that we need to develop new variant-based and new platform vaccines, and then test very carefully in clinical trials to maximise the values that these bring," Dr Kang proposed.

Bio Controversies

Four papers by Athira CEO earn expressions of concern

October 13, 2021

A group of researchers at Washington State University has received four expressions of concern for papers whose findings underpin a publicly traded company founded by two of the most senior authors on the articles.

The studies, all of which appeared in the Journal of Pharmacology and Experimental Therapeutics, came from the labs of Joseph Harding, a medical chemist at Washington State, and his colleague Jay Wright. Published between 2011 and 2014, the four articles report on a molecule called angiotensin IV, work which Harding and Wright leveraged to spin-off Athira, a Seattle-based biotech firm developing treatments for conditions including Alzheimer's and Parkinson's disease.

The CEO of Athira, formerly known as M3 Biotechnology, is Leen Kawas, once a PhD student at Washington State whose 2011 doctoral dissertation provided figures for this fraught 2011 article in JPET, which earned a correction in 2014. Earlier this year, as STAT reported, Kawas was forced to take a leave of absence from the company over concerns that she altered images in several papers. And there has been other scrutiny of the company.

The expressions of concern for all four papers read:
The editors wish to express con-

cern about the article by … of possible image manipulation after reviewing information received from several sources. They have shared these concerns with the corresponding author and their institution, Washington State University, and will await the results of an inquiry to determine appropriate next steps.

Mexican Government Seeks Arrest of Top Scientists in Funding Dispute

26 Sep 2021

Mexican prosecutors have asked a federal judge to jail 31 renowned Mexican scientists on charges of organized crime and money laundering, part of a growing dispute between the leftist government and the country's leading academics and universities.

The judge has rejected similar petitions twice, claiming that there has been a lack of sufficient evidence against the individuals. On Wednesday, the government refiled the petition for the third time. The scientists make up an independent advisory panel to the government's science council.

Prosecutors are claiming that the 31 individuals illegally used $12 million of government money. However, members of the advisory committee maintained that they did nothing wrong and that the spending had been audited and approved by the government. The advisory has clashed with the government before, stemming from disputes over whether government funding for science should be non-political or conducted with political and social goals.

Study claiming 1 in 1,000 risk of heart inflammation after COVID vaccine got calculation wrong

September 24, 2021

The small preprint study by the University of Ottawa Heart Institute, Canada's "largest and foremost" heart centre, was alarming, suggesting that, based on a sample size of just 32 people, Pfizer and Moderna COVID-19 vaccinations carry an estimated one in 1,000 risk of heart inflammation.

The scientists initially estimated the prevalence of myocarditis (inflammation of the heart muscle) or pericarditis (inflammation of the outer lining of the heart) based on 32 consecutive people admitted to the Heart Institute from June 1 through to the end of July 2021 with a suspected diagnosis of post-vaccination heart inflammation.

The authors calculated that, during the same study period, a total of 32,379 doses of Pfizer and Moderna vaccines were administered in the Ottawa area. "Therefore, if our cohort captured all cases in the Ottawa area, then the incidence of myocarditis would be 0.1 per cent of all vaccine doses," or 10 cases of myocarditis for every 10,000 doses of vaccine, they wrote.

A research letter published in JAMA involving 40 hospitals in Washington, Oregon, Montana and Los Angeles county and more than two million people who received at least one dose of a COVID vaccine estimated an incidence of one case of myocarditis in 100,000 vaccinations. In another large study out of Israel published in the New England Journal of Medicine, researchers estimated that, for every 100,000 people who get the Pfizer vaccine, one to five would likely develop myocarditis. However, the risk of heart inflammation was 11 events for every 100,000 people infected with COVID.

Late Thursday afternoon, the Heart Institute announced via Twitter that the authors have requested the paper be retracted, and that the incorrect data "vastly inflates the incidence of post-vaccine myocarditis."

Flawed papers and early release of data have ignited controversy and emboldened conspiracy theorists

throughout the pandemic. "We keep blaming crackpots and ideological mouthpieces for spreading misinformation about COVID and about vaccines, and it's a huge problem," said Arthur Caplan, professor of bioethics at New York University's Grossman School of Medicine.

Study comparing hydroxychloroquine and antiviral drug for COVID-19 retracted

September 22, 2021

The authors of a study comparing hydroxychloroquine and the antiviral agent favipiravir as treatments for COVID-19 have lost the paper after post-publication peer review determined that the data did not support the conclusions.

According to the retraction notice:

After concerns were brought to the Editors' attention after publication, the raw data underlying the study were requested. The authors provided several versions of their dataset. Post-publication peer review confirmed that none of these versions fully recapitulates the results presented in the cohort background comparisons, casting doubt on the reliability of the data. Additional concerns were raised about the randomisation procedure, as the equal distribution of male and female patients is unlikely unless sex is a parameter considered during randomisation. However, based on the clarification provided by the authors, sex was not considered during this process. The Editors therefore no longer have confidence in the results and conclusions presented.

A spokesperson for the publisher told us:

After publication of the paper, concerns were raised by a reader, which prompted us to request the raw data underlying the study. Our subsequent investigation, which included post-publication peer review, identified concerns in relation to the underlying data and randomization and the editors decided that the most appropriate course of action was to retract. Concerns regarding the other paper you mentioned are currently under investigation by the Scientific Reports editorial team.

Two Indian CROs under the lens as the US FDA raises data integrity issues

September 26, 2021

U.S. drug regulators have asked several pharmaceutical companies to repeat studies conducted at two Indian contract research organizations (CROs) (Synchron Research Services and Panexcell Clinical Lab) on data integrity concerns.

US Food and Drug Administration (USFDA) actions include tests at Ahmedabad-based Synchron and Navi Mumbai-based Panexcell facilities, and research data generated by these CROs and submitted in several applications.

Inspections and data analysis revealed serious cases of illegal activity and federal regulatory violations, resulting in invalid research data being submitted to the FDA, regulators said in a notice reviewed by the ET.

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