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BIOTECH EXPRESS



**Professor Rajeev Varshney
becomes the 4th Indian Agricultural
Scientist to be elected as
Fellow of the Royal Society**



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Prof Ashok Pandey

Chief Mentor- BRSI,
CSIR-IITR, Lucknow, India

November 26-29, 2023
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Editorial

by Kamal Pratap Singh

On May 10, 2023, The Royal Society, the oldest continuously existing scientific academy in the world announced its elected Fellows for 2023 (<https://royalsociety.org/news/2023/05/new-fellows-2023/>).

Prof Rajeev K Varshney is the only Indian scientist elected as FRS in the year 2023. Currently, Professor Rajeev Varshney, is with Murdoch University (Australia) as Director of the Centre for Crop & Food Innovation; Western Australian State Agricultural Biotechnology Centre; and International Chair in Agriculture & Food Security.

Prof Rajeev Varshney becomes the 4th Indian Agricultural Scientist to be elected as Fellow of the Royal Society

This impressive induction will make Prof. Varshney the fourth Indian agricultural research scientist to receive this fellowship in the history of Royal society fellow selection. The other three Indian agricultural scientists elected as FRS include Prof. BP Pal (elected in 1972), Prof. MS Swaminathan (elected in 1973) and Prof. Gurdev Khush (elected in 1995). But that's not the end for him, in this article we are publishing his interview to share with our readers what he aims in future and how he plan his future research objectives. In January 2021, we published an interview of

India's leading scientists Prof Rajeev Varshney on the occasion of achieving h- index of 100 by him (now has h-index of 120). At that time, he was the fourth Indian scientist and first Indian scientist in agribio-tech field who had h-index more than 100. Our advisory Board member Prof Pandey (his current h-index is 129), an energy researcher and biotechnologist in July 2020 became the third Indian after Prof CNR Rao and Prof Kayanmoy Deb who crossed h-index 100.

How did you find out about the news of your inclusion in FRS fellow list?

I was taking an evening stroll with my wife when I received an email from The Royal Society on my phone mentioning that I have been elected as Fellow of the Royal Society. The email also stipulated that I could not share this info until after the 10th of May. In the first instance, I couldn't believe that the news was correct, but after reading it 2-3 times, I believed it to be true. My wife told me that it would be prudent to double check – just in case and that the email had come from the right source! However, when the Royal Society started to email more frequently to receive some additional info, I started to believe it. Eventually when they sent me their scheduled Press Release, further adding that I could share this news with my friends and family, I realised this was actually happening.

How do you feel after becoming an elite FRS?

While I feel humbled and honoured to be on the list along with giants and eminent persons in various fields, I also feel a responsibility to contribute more and more to Agricultural Science. We would like to see us achieve the Sustainable Development Goals (SDGs), especially SDG2 within a stipulated amount of time.

I feel very pleased that I have received a huge amount of support from Murdoch University (from its top leaders, like Prof Andrew Deeks, Vice Chancellor; Prof Peter Davies, Deputy Vice-Chancellor; Prof Dan Murphy, Pro Vice-Chancellor), Research Development Corporations like Grains Research & Development Corporation (GRDC), HortInnovation, the Australian Council for International Agricultural Research, The Crawford Fund, Australian Research Council and others here in Australia.

Though I am now in Australia, I am very well connected with Agricultural Sciences- research and education in India through my role as International Chair in Agriculture & Food Security at Murdoch University, also, as alumnus of International Crops Research Institute



Fellowships of Prof Rajeev Varshney

- The Royal Society of London, 2023
- The African Academy of Sciences, 2022
- German National Academy of Sciences Leopoldina, Germany, 2016
- The World Academy of Sciences (TWAS), 2016
- American Association for Advancement in Sciences (AAAS), 2016
- Crop Science Society of America (CSSA), 2015
- American Society of Agronomy (ASA), 2018
- Indian National Science Academy (INSA), 2013
- Indian Academy of Sciences (IASc), 2019
- National Academy of Sciences, India (NASI), 2015
- National Academy of Agricultural Sciences, India (NAAS), 2010
- Indian Society of Pulses Research and Development, 2019 (Honorary Fellow)
- Arid Zone Research Association of India, 2019 (Honorary Fellow)
- Indian Society of Genetics & Plant Breeding, 2015



Photo: Prof Varshney with Shri Narendra Modi, Hon'ble Prime Minister of India – During the award presentation: Shanti Swarup Bhatnagar Award – Biological Sciences, the most coveted and prestigious award from Government of India in September 2016

for the Semi-Arid Tropics (ICRISAT). In addition as Foreign Secretary, National Academy of Agricultural Sciences, India (NAAS), Fellow of all science academies- Indian National Science Academy (INSA), National Academy of Sciences, India; Indian Academy of Sciences, and Honorary/Adjunct Professors with Ch Charan Singh University (CCSU), University of Hyderabad, Prof Jayashankar Telangana State Agricultural University (PJTSAU), and our MoUs with several organisations such as with CCSU, PJTSAU, Indraprastha University, Mahatma Phule Krishi Vidyapeeth, I have been keeping myself updated and contributing to various activities in agricultural science in India.

Are you looking next for Noble Prize?

Ah, I'm not looking for any such thing. The Noble Prize is not given in Agricultural Sciences, though I am aware that Norman Borlaug, an Agricultural Scientist, received a Noble for peace. However, I will continue to work for improving agriculture (including horticulture) for the agriculture industry in Australia, and for small-holder farmers in India and developing countries in Asia and sub-Saharan Africa. For sure recognitions such as FRS and others provides a boost and inspires us to take up our translational research activities on a large scale.

What is your current position and work at Murdoch University?

I am leading two centres as Director and serving Food Futures Institute as International Chair in Agriculture & Food Security. The Western Australian State Agricultural Biotechnology Centre, a collaborative research centre for agricultural research organisations in Western Australia, provides a state-of-the-art platform for undertaking biotechnology research (including genomics) to researchers. On the other hand, the Centre for Crop & Food Innovation is capitalising on new technologies and investments in crop agriculture. It provides both strength and depth to undertake research on major broad acre and horticultural crops to improve yield, and quality and enhance tolerance and protection from biological and environmental stresses, and encompasses cutting-edge R&D in crop Agri-Bio, Agri-Tech and Food Tech.

As mentioned above, in my role as International Chair, we are working with international agencies such as FAO, IAEA, ACIAR, CGIAR, and The Crawford Fund to continue working with researchers in developing countries in Africa and Asia to contribute to food and nutrition security.



Photo: Prof Varshney with Shri Yogi Adityanath, Hon'ble Chief Minister, State of Uttar Pradesh, India and Shri Ram Naik, the then Hon'ble Governor, State of Uttar Pradesh – January 2018. Received Certificate and Honour for Outstanding Science Contribution- 2018 by Uttar Pradesh Government in January 2018

How will your achievements help India in the long run?

Science doesn't have boundaries- we have clearly seen how different countries can come together and the research carried out on vaccines for example, that was developed in some countries invariably helped people in other countries. The same applies to agriculture. For instance, my research group is developing genetic solutions for improving wheat, legume and horticultural crops for a range of agronomic, and abiotic stress tolerance traits by developing and deploying novel genomics and pre-breeding approaches such as pangenomics, haplotype cataloguing and functional genomics approaches. These genetic solutions are not restricted to just Australia; they will help to improve the crop productivity of wheat, legume and horticultural crops, all of which are central to Indian agriculture.

My existing research collaborations with ICRISAT, and ICAR, especially with ICAR- Indian Agricultural Research Institute, ICAR-Indian Institute of Wheat & Barley Research, ICAR- Indian Institute of Pulses Research, ICAR-Indian Institute of Millets Research, ICAR- Directorate of Groundnut Research and SAUs and other research organisations of CSIR and DBT are going to be very helpful. I would like to thank

the Indian research leadership, from ICAR (including DG, ICAR- Dr Himanshu Pathak), DAC (Secretary- Shri Manoj Ahuja), DBT (Secretary – Dr Rajesh Gokhale), CSIR (DG- Dr N Kalaiselvi), DST (Dr. S. Chandrasekhar), Principal Scientific Advisor (Dr Ajay Sood) for providing the right direction to Indian agricultural science research.

Also, the science academies and related organizations such as NAAS (President- Dr Himanshu Pathak, Secretary- Prof KC Bansal), TAAS (Prof RS Paroda), or other senior science leaders such as Dr MS Swaminathan, Dr Trilochan Mohapatra, Prof Deepak Pental, Prof PK Gupta, Prof R B Singh, Prof SK Sopory, Prof Swapan Datta, Prof Anupam Varma, Dr Manju Sharma, Dr Renu Swarup, Dr PL Gautam and many others. All of these incredible science leaders are prioritising agricultural research and helping the government to develop and implement conducive R&D policies in India. I am very much sure that all these efforts and hard work of the scientists and farmers combined with the support from the private sector will contribute to doubling farmers' income. This was a challenge given by Hon'ble Prime Minister, Shri Narendra Modi, and will provide prosperous livelihood to farmers in India. My full support and commitment are there to contribute, whatever I can do, to Indian agriculture.

About The Royal Society



The Royal Society, is a learned society and the United Kingdom's national academy of sciences. Founded in 1660, it was granted a royal charter by King Charles II and today is the oldest continuously existing scientific academy in the world that unites the most eminent scientists, engineers and technologists from all over the world. The Royal Society's motto 'Nullius in verba' is taken to mean 'take nobody's word for it'. It is an expression of the determination of Fellows to withstand the domination of authority and to verify all statements by an appeal to facts determined by experiment.

Each year, the Fellows of the Royal Society elect up to 52 new Fellows and up to 10 new Foreign Members. Candidates must have made 'a substantial contribution to the improvement of natural knowledge, including mathematics, engineering science and medical science'. Each candidate is considered on his or her own merits and can be proposed from any sector of the scientific community. Every effort is made to encourage nominations of women candidates and candidates from the emerging disciplines.

To date, there are approximately 1818 Fellows and Foreign Members, including up to 85 Nobel Laureates. Each year at least 52 Fellows and up to 10 Foreign Members are elected from a group of around 800 candidates who are proposed by the existing Fellows. Some prominent Past Fellows and Foreign Members of the Royal Society have included Charles Darwin, Lise Meitner, Albert Einstein, Dorothy Hodgkin, Elon Musk and Stephen Hawking.

What are your future plans with research?

As mentioned earlier, my research group is developing genetic solutions for improving wheat, legume and horticultural crops. We are developing climate-resilient crops with a higher crop productivity by developing and deploying novel genomics and pre-breeding approaches such as pangenomics, haplotype cataloguing, and genomic prediction including Artificial Intelligence, and Machine Learning approaches. We hope that these new approaches will accelerate crop improvement programs for developing better varieties to suit in target environments.

How has your work benefitted the common people?

My research work, while working at ICRISAT for 17 years, and now at Murdoch Uni, has enhanced the understanding of trait adaptation in target environments as well as improving the income of small-holder

Table: Key Indian Life Sciences Fellows of The Royal Society (1841-2023)

S. No.	Name of FRS	Year of Election
1	Sir Jagadish Chandra Bose	1920
2	Birbal Sahni	1936
3	Benjamin Peary Pal	1972
4	M S Swaminathan	1973
5	G N Ramachnadran	1977
6	Autar Singh Paintal	1981
7	Obaid Siddiqui	1984
8	Vulmiri Ramalingaswamy	1986
9	Coluthar Gopalan	1987
10	Gurdev Singh Khush	1995
11	Goverdhan Mehta	2005
12	Krishnaswamy VijayRaghavan	2012
13	Gagandeep Kang	2019
14	Rajeev K Varshney	2023

Box: About Prof Rajeev Varshney

Professor Rajeev K Varshney is an agricultural scientist, specialising in genomics, genetics, molecular breeding and capacity building in developing countries. He is engaged in discovering, developing and delivering innovative R&D solutions to tackle wicked problems facing global agriculture. Prof Varshney is currently Director, Centre for Crop & Food Innovation; Director, WA State Agricultural Biotechnology Centre, & International Chair in Agriculture & Food Security, Food Futures Institute, Murdoch University, Australia. Prior to joining ICRISAT, Prof Varshney served International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in various science, and research leadership roles including the last positions as Research Program Director–Accelerated Crop Improvement; and Director, Center of Excellence in Genomics & Systems Biology, a global agricultural research institute. He holds Adjunct/Honorary/Visiting Professor positions at 10 academic institutions in Australia, China, Ghana, Hong Kong and India.

Prof Varshney, in his research career spanning for >20 years, has made significant contributions to improving food security in Asia and Africa by creating genomic resources of major “orphan” tropical crops. He has developed and deployed DNA marker technologies for the identification of useful genetic variation in tropical crops. Prof Varshney, together with his team, has used these resources and technologies to identify genetic loci/candidate genes for drought and pest tolerances in key staple crops for sub-Saharan Africa and India. He has initiated and led major international programs that are creating and delivering superior crop varieties to some of the world’s poorest farmers.

By serving several organizations in the science leadership/ management role for the past 16 years, Prof Varshney has supervised large international teams (up to 200 members) representing a range of diversity in ethnicity, nationality and gender. In these roles, Prof Varshney provided expertise in R&D management, product development, innovative ideas and promoted inclusive culture and inter-disciplinary and collaborative research ecosystem to team members for high-performance to develop and realize their potential as teams and individuals. His leadership efforts have led mainstreaming of genomics in crop breeding programs at many institutes in several countries including India, China, Ethiopia, Kenya, Malawi, Ghana, Mali, Burkina Faso. Prof Varshney has developed a large network comprising of 180+ public and private sector research organizations in >35 countries across six continents. Prof Varshney has worked with a range of stakeholders (policymakers, funding bodies) e.g. Ministers, Secretaries, Advisors, Vice-Chancellors, Directors and Presidents/ CEOs of several organizations in many countries. Prof Varshney has been successful to secure US \$90 million in funding as a PI/Project Coordinator and ca. US \$110 million by including as co-PI in the last 10 years.

With 20 books, 500+ publications including 20 papers in Nature journals (Nature, Nature Genetics, Nature Biotechnology, Nature EcolEvol, Nature Communications and Nature Plants), h-index of 120 and citations of >60,000 (GoogleScholar), Prof Varshney is a prolific author and a highly cited researcher during last seven consecutive years. He has been honored with elected and honorary fellowships from a dozen academies/ societies, the Royal, being key one and >20 prestigious awards from USA, Germany, China, India, Nepal, Vietnam, Philippines, UAE.

Prof Varshney is pro-active in science communication and knowledge dissemination. In addition to delivering 40 keynote talks and organizing several international conferences and training courses, Prof Varshney has presented research and novel concepts related to food and nutrition security in several high-level fora such as G8 Conference in the World Bank; Digital Design Agriculture Session chaired by Mr. Bill Gates; FAO Conferences, Mexico Malaysia; TEDx talk; Ministry of Agriculture, Government of India, etc. Prof Varshney’s research and interviews have been published in many Indian/ International print and electronic media (including TV channels and Radio programs) e.g. The New York Times, The Economist, BBC, Forbes, SciDevNet, ISAAA, Food Technology, Cosmos, Down to Earth, The Times of India, Hindustan Times, The Hindu Business Line, Financial Express, Mongabay, Australian Broadcasting Corp, Doordarshan, E-TV, AP24X7, FM Radio, Biotech Express etc.



Photo: Prof Varshney is Director, WA State Agricultural Biotechnology Centre, Director, Centre for Crop & Food Innovation, and International Chair in Agriculture & Food Security at Murdoch University, Australia

farmers in developing countries. As a team leader and international coordinator, I led international teams of researchers to sequence the genomes of about 12 crops including pigeonpea, chickpea and pearl millet. Furthermore, we sequenced and analysed >3500 chickpea lines, ca. 1000 pearl millet lines, and 292 pigeonpea lines to deduce the centre of origin and migration route of these crops, as well as undertaking trait mapping.

The genetic analysis led to the identification of markers associated with 30 - 50 traits in these legume crops that enabled the deployment of molecular breeding. We trained >450 breeders from around the world to undertake genomics-assisted breeding. While working with breeders from India and several other countries on genomics-assisted breeding, we developed several improved lines. After rigorous agronomic evaluation, many of these lines were released for commercial cultivation. This includes a dozen improved varieties of chickpea, groundnut and pigeonpea in India and two drought-tolerant chickpea varieties in Ethiopia. Several other lines are in the advanced stage of varietal release pipelines in India, Ghana, Mali, and other countries.

As Principal Investigator for the Tropical Legumes projects, our efforts facilitated the release of 266 varieties, the production of 498,034 tons of seeds, adoption of improved varieties of legumes under a

5 million ha area producing about 6.1 million tons of grain worth USD 3.2 billion. By assuming 0.2 ha land per farmer, my leadership have benefitted 25 million lives in 15 countries of sub-Saharan Africa (Kenya, Ethiopia, Tanzania, Uganda, Malawi, Zimbabwe, Mozambique, Nigeria, Niger, Ghana, Burkina Faso, Mali and Senegal) and Asia (India and Bangladesh) (<https://tropicallegumeshub.com/>, <https://shorturl.at/bmpVW>). The socioeconomic impact of this work has been presented in an article, “A decade of Tropical Legumes projects: Development and adoption of improved varieties, creation of market-demand to benefit smallholder farmers and empowerment of national programmes in sub-Saharan Africa and South Asia in Plant Breeding” (<https://shorturl.at/CEN03>). In fact, The Royal Society recognised my research contributions as above by conferring fellowship (FRS) to me.

To whom would you want to address here for your achievements?

The Society has played a part in some of the most fundamental, significant, and life-changing discoveries in scientific history, but this could not have been achieved on my own – this has been a collaborative effort of my colleagues and collaborators while working at several organizations starting with Aligarh Muslim University, Ch Charan Singh University, IPK-Gatersleben (Germany),

Box: Key Awards received by Prof Varshney

- Shanti Swarup Bhatnagar Prize for Science and Technology by Government of India, 2015 (Honoured by Prime Minister, Mr. Narendra Modi). This award is dubbed as Nobel Prize of India
- Rafi Ahmed Kidwai Award, the top most agriculture science award from Government of India, 2020
- Guangdong Friendship Award by Government of Guangdong Province China, 2023.
- International Partnership and Technological Co-operation Award by Government of Shandong Province China, 2022
- Scientific and Technological Co-operation Award by Government of Guangdong Province China, 2020
- GD Birla Award for Scientific Research by KK Birla Foundation, India, 2018
- Prof. Lalji Singh Achievement Award by ADNAT, 2019
- Prof Jayashankar Lifetime Achievement Award by Prof Jayashankar Telangana State Agri Univ, 2019
- JC Bose Fellowship for the outstanding performance from the Science and Engineering Research Board, Department of Science and Technology, Government of India, 2018
- Certificate and Honor for Outstanding Science Contribution by Uttar Pradesh Government, 2018 (honoured by His Excellency, Governor and Hon'ble Chief Minister, Uttar Pradesh, India)
- One of the "40 Most Influential Foreign Experts" in the past 40 years of Shandong Province since the initiation of Reform and Opening Up policy by The Association for International Exchange of Talents in Shandong, Shandong International Talent Network, China, 2018
- Outstanding Faculty Research Award by Carrers360, 2018 (honoured by Hon'ble Minister for Human Resource Development, Government of India)
- Qilu Friendship Award by People's Government of Shandong Province, China, 2016
- Doreen Margaret Mashler Award, the most prestigious ICRISAT award by ICRISAT Governing Board, 2016
- Highly Cited Researcher by Thomson Reuters/ Clarivate Analytics, 2019, 2018, 2017, 2016, 2015, 2014
- Research Excellence India Citation Award by Thomson Reuters, 2015
- IPGI Science Leadership Award by the International Peanut Genome Initiative, 2017
- The Illumina Agricultural Greater Good Initiative Award (US\$100,000 for lab), 2013
- Young Crop Scientist Award by Crop Science Society of America (CSSA), 2013
- NASI-Scopus Young Scientist Award by National Academy of Sciences, India & Elsevier, South Asia, 2010
- INSA-Young Scientist Medal by the Indian National Science Academy (INSA), 2008
- NASI-Young Scientist Platinum Jubilee Award by the National Academy of Sciences, India (NASI), 2007

ICRISAT, and now Murdoch University. I am grateful to my colleagues and collaborators from Australia, India, Germany, and many countries in Asia, Africa, and America with whom I have had the opportunity to work with for around 25 years. In particular, and certainly here in Australia, Deputy Vice-Chancellor-of Research & Innovation, Professor Peter Davies has been incredibly supportive. This will leverage Murdoch University's reputation as a world-renowned Agricultural Science research institution.

Several agricultural science doyens like Prof Nor-

man Borlaug, Prof MS Swaminathan, Prof Gurdev Khush, Prof Jim Peacock, Prof Mike Gale, Prof Yuan Longping, have been my role models and inspiration and I would like to thank them, especially Prof Borlaug, Prof Swaminathan, and Prof Khush with whom I met and interacted and received their blessings and support. I would also like to mention contributions, support and blessings of some mentors such as- Prof PK Gupta, Prof Andreas Graner, Dr William Dar, Dr Peter Carberry, Prof Peter Davies, Prof Kadambot Siddique, Prof Peter Langridge, Prof Susan McCouch, Prof Mark Sorrells, Prof Roberto Tuberosa, Dr Jeff Ehlers, Prof

RS Paroda, Dr Trilochan Mohapatra, Prof Deepak Pental, Prof Swapan Datta, Dr Dyno Keatinge, Prof Jeff Bennetzen, Prof KC Bansal, Dr Nigel Poole, Dr Chike Mba, Dr Rachel Chikwamba, Prof Eric Danquah, Prof Ed Buckler, Prof Xu Xun, Prof Wazahat Hussain and many others, who played a key role in shaping my research career. I would like to mention my special thanks to Prof Mike Bevan and Prof Jonathan Jones,

who nominated me for the Fellowship of The Royal Society. Of course, my heartfelt thanks to my family- especially my wife, Monika for all her sacrifices and unconditional support, and my children- Prakhar and Preksha for their love and support, as much of my work has been rather time-consuming, but they are proud of me nonetheless!

Wishful Quotes from Eminent Scientists/ Science Leaders

On this special achievement many eminent scientists and science leaders around the world sent wishes to Prof Varshney which I collected through social media posts and other means. Here I am compiling only some of them because it is impossible to include everyone's quote, otherwise they would cover the whole issue of this magazine. Some of the best quotes from scientists are as follows:

“His election was testament to a lifelong commitment to academic excellence. “Professor Varshney embodies the philosophies Murdoch University was built on and continues to espouse today,” he said. “Throughout his research he has kept a keen focus sustainability that has impacted the lives of some of the world’s most vulnerable people.” “He is a very fitting recipient of this high honour and we are very proud to have him as Murdoch’s first Royal Society fellow.”

**Professor Andrew Deeks
Murdoch University Vice Chancellor**

“I am very happy to note that you have been elected as a Fellow of Royal Society. Kindly accept my congratulations and very best wishes on your well deserved accomplishment. A Fellow is someone, who makes an “original contribution.” I wish you good health and much happiness.”

**Prof MS Swaminathan, FRS
Father of Indian Green Revolution**

“It is great to see FRS being bestowed to Prof. Varshney, who has not only excelled in science but also in its application to solve the downstream

problem of food security and poverty alleviation in less endowed regions of the world.”

**Prof. Gurdev Khush, FRS,
and the World Food Prize Awardee**

“It is immense pleasure to see Dr Varshney has been conferred fellowship of the royal society. Dr Varshney has made seminal contributions in the area of genomics of different crops and enunciated the concept of genomics assisted plant breeding for the improvement of crops. Heartiest congratulations to him from me”

**Padamshree Prof Sudhir Kumar Sopory,
Emeritus Senior Scientist, ICGEB, New Delhi
Former Vice Chancellor, JNU, New Delhi**

“It is a great recognition for Indian agricultural science that an Indian agricultural scientist based on the work done in India has been recognised by the Royal Society, an apex learned body of the world.”

**Dr Himanshu Pathak,
Secretary, DARE & Director General - ICAR**

“Congratulations, Rajeev! A great recognition of your quality research over many years. Murdoch has not had an FRS before, so certainly much to celebrate. Before 50 years old, we get our very first FRS.”

Prof Peter Davies
Deputy Vice Chancellor- Research
Murdoch University, Australia

“Congratulations, Rajeev. So proud of you and privileged in my connection to you and your achievements. You are exceptional in science and in communicating”.

**Dr Peter Carberry, General Manager, Grains
Research and Development Corporation,
Australia; Former Director General, ICRISAT**

“I am so proud of you, Rajeev! I remember well, I used to call you Einstein of Agriculture, and now you have truly joined the rank of Einstein by becoming FRS. You more than deserve this honor. Big congratulations! I am sure that there are many more such laurels waiting for you”.

**Dr William Dar, former Director General,
ICRISAT & former Secretary, Agriculture,
Government of the Philippines**

“I am so much excited to note about Rajeev becoming FRS. I congratulate and rejoice with one of mentees at IPK. I look forward to see many more such laurels bestowed to you in coming years. Congratulations Rajeev!”.

Prof Andreas Graner
Executive Director, Leibniz Institute of Plant
Genetics & Crop Plants Research, Germany
(Post-doc supervisor, and mentor)

“It is difficult for me as a teacher to describe how thrilled I am feeling ever since Rajeev gave me this news. I don't think there will be many in the country whose student became FRS. During last more than 20 years, there would be not more than 5 or 6 Indians, who became FRS. Among these also there may be none, who never studied in UK or USA for

their PhD or as Post-Doc. Perhaps after Gagandeep Kang, became FRS in 2019, Rajeev is the only next Indian who became FRS. In the history of Indian Science, Rajeev will now be listed with MS Swaminathan.”

Prof PK Gupta
Emeritus Professor, Ch Charan Singh University,
Meerut, (PhD supervisor, and mentor)

“Please accept my heartiest congratulations on being elected as FRS , so richly deserved. We are indeed very proud of your achievements and significant contributions to the agrisector .”

**Prof Ajay Sood, FRS, Principal Scientific
Advisor, Government of India**

“This is a well deserved rare recognition bestowed on you by the Royal Society and makes me feel very proud of your scientific achievements par excellence. May you be blessed with many more distinctions and laurels”.

**Padma Bhushan Dr RS Paroda, Chairman, TAAS
and former Secretary, DARE and DG- ICAR**

“A million congratulations on attaining this dizzying height, dear Rajeev! This honor is clearly well-deserved and hence unsurprising. Nonetheless, it is such a rare feat as to be utterly astounding. I am ever proud of you and your achievements, even as I look forward to celebrating the several more accolades that certainly await you in the future”.

**Dr Chikelu Mba, Team Leader, Seeds and Plant
Genetic Resources, UN-FAO, Rome, Italy**

“Congratulations Rajeev! This is an amazing honor for all your great work, you did at ICRISAT. We are proud of you. All the best for your continued success”.

Professor Prabhu Pingali,
ICRISAT Governing Board Chair,
Member of US National Science Academy,
Cornell University, USA

“Wow ! That is fantastic news, Rajeev. I am so thrilled for you! Great recognition of all your wonderful work over your career. Well done - truly well deserved. My heartiest congratulations”.

**Professor Peter Klinken AC FAHMS FTSE
CitWA, Chief Scientist of Western Australia**

“Warmest congratulations @rajvarshney. Your work is in the tradition of Benjamin Pearey Pal, M. S. Swaminathan, Gurdev Kush, and others while using current molecular methods. Wonderful work at @ICRISAT Hyderabad and now at Murdoch”.

**Prof K Vijay Raghavan, FRS, Former
Principal Scientific Advisor to PM and
Former Secretary, DBT, Government of India**

“Hearty congratulations Rajeev! What an achievement! Your untiring work has been rewarded. In recent history, no one can match your contributions in agricultural science. Keep going strong. Sky is the limit! I am immensely proud of you. May you stay healthy and blessed! Best wishes!”

**Dr Trilochan Mohapatra, Chairperson,
Protection of Plant Varieties and Farmers’
Rights Authority, Government of India; and
former Secretary, DARE and DG-ICAR**

“Please accept our heartiest congratulations on being elected as a Fellow of the prestigious Royal Society and notably a fourth Indian Agricultural Scientist to be elected as FRS. It is a richly deserved recognition of your work and contributions towards food and nutrition security.”

Prof Ashutosh Sharma, President, INSA

“Congratulations, Rajeev! No words can express my happiness after I hear this news. We in India are so delighted that our dearest friend and collaborator has got one of the most coveted global

recognitions. As I have been saying since the early days we met - you are a rising star Rajeev! And soon you will be honoured with the remaining big prizes as you richly deserve them. Truly, you have taken the science of genomics to the next level, which has resulted in speedy development of nutritionally-rich, climate resilient crop varieties by efficiently applying genomics assisted breeding.”

**Prof KC Bansal, Secretary of NAAS, India &
former Director, ICAR- NBPGR**

“Royal Recognition! The Indian community in WA extends heartiest congratulations to Prof @rajvarshney on being elected as a Fellow of the Royal Society of UK for his outstanding contributions to advancement of science. Indian Diaspora is proud of your achievements.”


**Hon’ble Amarjeet Singh Takhi,
Consul General of India, Perth, Australia**

“Congratulations Rajeev. Outstanding achievement. I am so excited to see my long-term collaborator and a good friend to joins the ranks of Stephen Hawking, Isaac Newton, Albert Einstein, Dorothy Hodgkin and Sir David Attenborough!”

**Hackett Professor Kadambot Siddique,
Director, UWA Institute of Agriculture,
The University of Western Australia**

“Congratulations on this very well deserved honor!! I’m so happy to hear that you were elected as a FRS! It represents the highest form of recognition a scientist can hope for and we are all very proud and happy to know you and celebrate with you. Keep up the good work! You are still young and there is so much more to do!!!”

**Professor Susan McCouch,
Member of US National Academy of Sciences,
Cornell University, USA**



Rajeev K. Varshney
 Director, Centre for Crop & Food Innovation, Murdoch University, Australia
 Verified email at murdoch.edu.au - [Homepage](#)
[crop improvement](#) [genomics](#) [molecular breeding](#) [biotechnology](#) [capacity building](#)

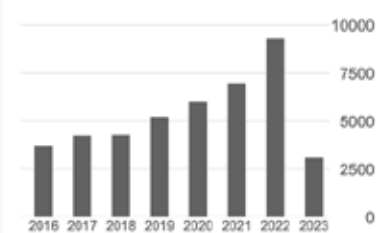
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TITLE	CITED BY	YEAR
Exploiting EST databases for the development and characterization of gene-derived SSR-markers in barley (<i>Hordeum vulgare</i> L.) <small>T Thiel, W Michalek, R Varshney, A Graner Theoretical and applied genetics 106, 411-422</small>	2590	2003
Genic microsatellite markers in plants: features and applications <small>RK Varshney, A Graner, ME Sorrells TRENDS in Biotechnology 23 (1), 48-55</small>	2312	2005
The development and use of microsatellite markers for genetic analysis and plant breeding with emphasis on bread wheat <small>PK Gupta, RK Varshney Euphytica 113 (3), 163-185</small>	1247	2000

Cited by [VIEW ALL](#)

	All	Since 2018
Citations	60568	34851
h-index	120	89
i10-index	574	513



“Congratulations on this great achievement. This highest recognition in science is a result of your contributions and impact of your research and training in Africa and Asia. I am proud that I know you. Thanks for all your collaboration with WACCI”

**Professor Eric Yirensky Danquah,
 Founder & Director, WACCI, Ghana;
 2018 Laureate, The World Agriculture Prize;
 2022 Laureate, The Africa Food Prize**

“Congratulations Rajeev for being inducted as Fellow in the ‘hall of fame’ of science, the Royal Society of London. There are not many agricultural/crop scientists have been so recognised. It is well deserved and it is good that you are now based in Perth!”

**Adj. Professor Neil C. Turner, AM, FTSE,
 FAIA, The University of Western Australia**

“Many congratulations Rajeev. Keep on serving agricultural science with the same commitment and dedication”.

**Prof Swapan Datta
 Former DDG- Crop Science, ICAR
 Founder Vice Chancellor, Biswa Bangla
 Biswabidyalay, West Bengal**

“Rajeev Varshney, FRS, a great, happiest and refreshing news. I proud to be your teacher. I can’t express my feelings of joy and happiness. Actually speaking, it is due to your systematic, methodical approach, dedication, devotion and untiring efforts. HEARTIEST CONGRATULATIONS, & all the best for future.”

**Professor Wazahat Hussain,
 Former Chairman, Department of Botany,
 Aligarh Muslim University (teacher & mentor)**

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Antimicrobial Resistance Stewardship Series 2023

Sunday, 14th May 2023 | 9 AM IST

Venue: World Trade Center, Kapil Kavuri Hub,
Nanakramguda, Hyderabad



Prof. Pallu Redidana
Executive President, FABA
Senior Professor (Retd.)
School of Life Sciences, UoH
Director, ASPIRE BioNEST



Dr. Ranga Reddy Burri
President, IFCAI



Dr. P. Ratnakar
Secretary General, FABA
Vice President,
Persistent Systems



Prof. Lakshmi Venu Gorthi
Professor of Microbiology,
KAMSRC



Dr. B. E. Pradeep
Asso. Professor,
Biosciences, SSSIHL



Dr. Madhvi Rao
Chief Manager, BIRAC



Dr. Jagadeesh Gandla
Chief Operating Officer,
FABA



Mr. Prabhav Kashyap
MBBS



Mr. Jithin Vennapusa
MBBS
Associate, FABA

Sponsored by



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FABA holds Conference on Antimicrobial Resistance Stewardship Series

On Sunday, 14th May, FABA in association with WTC Shamshabad, BIRAC, Sri Sathya Sai Institute of Higher Learning and IFCAI held the first event of a recurring conference series on Antimicrobial Resistance Stewardship. The series aims to educate life science students and medical professionals on the importance of raising awareness of Antimicrobial resistance and strategies to tackle it.

Final year MBBS student, Jithin Reddy Vennapusa, kicked the event off with a brief introduction of Antimicrobial stewardship and its strategies in a health-care setting. He also introduced the various strategies followed by WHO and Government of India to overcome the challenges of Antimicrobial resistance.

Prof. Reddanna and Dr. Uday Saxena addressed about the importance of AMR containment and thanked the speakers for contribution to the antimicrobial stewardship workshop.

Dr. Ranga Reddy Burri, President of IFCAI, talked about containment strategies of AMR; top down or bottom up. Being a physician himself, he talked about the history of Antimicrobial and the present scenario of effective therapies against superbugs and strategies to mitigate it for future generations.

During her presentation, Dr. Madhvi Rao, Chief Manager, BIRAC, emphasised the need for innovative solutions to address the growing problem of AMR,



which poses a significant threat to public health and the economy. Dr. Madhvi also discussed BIRAC's various initiatives aimed at fostering biotechnology innovation and entrepreneurship. These programmes include funding assistance, mentoring, and capacity building, among others.

Dr. Pradeep SSSHIL - talked about his tool known as AMRx, a Digital Technology enabled UTI and AMR prediction system to support empirical antibiotic prescription. He showed the capabilities of the tool, its high specificity and sensitivity of diagnosis and its supporting empirical treatment. He emphasised on the potential nationwide usage of this tool to accurately diagnose UTIs and prevent Antimicrobial resistance.

Mr. Prabhav Kashyap, a final year medical student presented his paper - From Antibiotic Resistance to Antibiotic Renaissance: A New Era in Helicobacter Pylori Treatment. He talked about his research paper, where he identified several key lapses in the accurate diagnosis and treatment of *H. pylori* infections and the importance of Antimicrobial stewardship to eradicate resistant infections of *H. pylori*

Dr. Laxmi - prof from Kamineni - as a clinical microbiologist she talked about the real life scenario in the clinical setting and how patients present with various resistant bacteria and how physicians can accurately diagnose infections based on susceptibility testing. Dr. Ranga Reddy, Dr. Laxmi, Dr. Pradeep discussed the possibility of implementing AMRx tool in sentinel sites to improve the data collection and accuracy of the tool.

In conclusion, the conference on Antimicrobial Resistance Stewardship Series, organized by FABA successfully brought together medical professionals, life science students, and experts in the field to discuss the importance of raising awareness about Antimicrobial resistance and strategies to tackle it. The event highlighted innovative solutions, tools, and research that can help in the containment of AMR and emphasized the need for collaboration and continuous learning through the recurring series. The participants also explored the potential of implementing the AMRx tool in sentinel sites to improve data collection and accuracy, further strengthening the fight against Antimicrobial resistance.



Featured Biotech News

COVID no longer a global health emergency, WHO says



5 May 2023

COVID-19 no longer qualifies as a “global health emergency”, the World Health Organization (WHO) says.

The announcement on Friday came more than three years after the United Nations health agency declared its highest level of alert over the devastating virus, which triggered lockdowns, upended economies and killed millions of people worldwide.

“Yesterday, the Emergency Committee met for the 15th time and recommended to me that I declare an end

to the public health emergency of international concern,” WHO Director General Tedros Adhanom Ghebreyesus said. “I’ve accepted that advice. It’s, therefore, with great hope that I declare COVID-19 over as a global health emergency.”

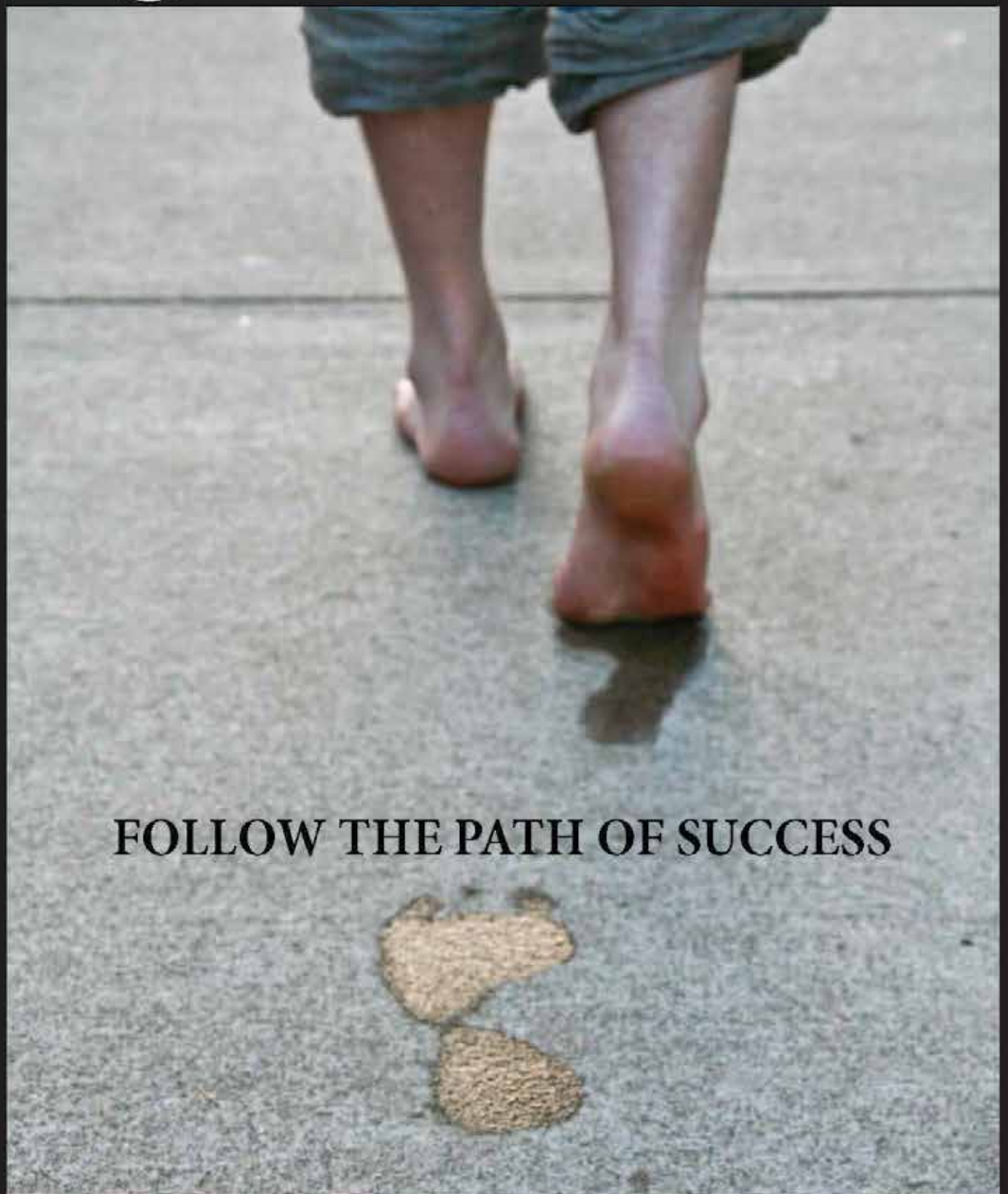
The WHO said that even though the emergency phase was over, the pandemic declared in March 2020 has not come to an end, noting recent spikes in cases in Southeast Asia and the Middle East. The agency said thousands of people are still dying from the coronavirus every week.

“That does not mean COVID-19 is over as a global health threat,” Tedros said, adding he would not hesitate to reconvene experts to reassess the situation should the coronavirus “put our world in peril”.

More than three years later, the virus has caused an estimated 764 million cases globally and about 5 billion people have received at least one dose of a vaccine.

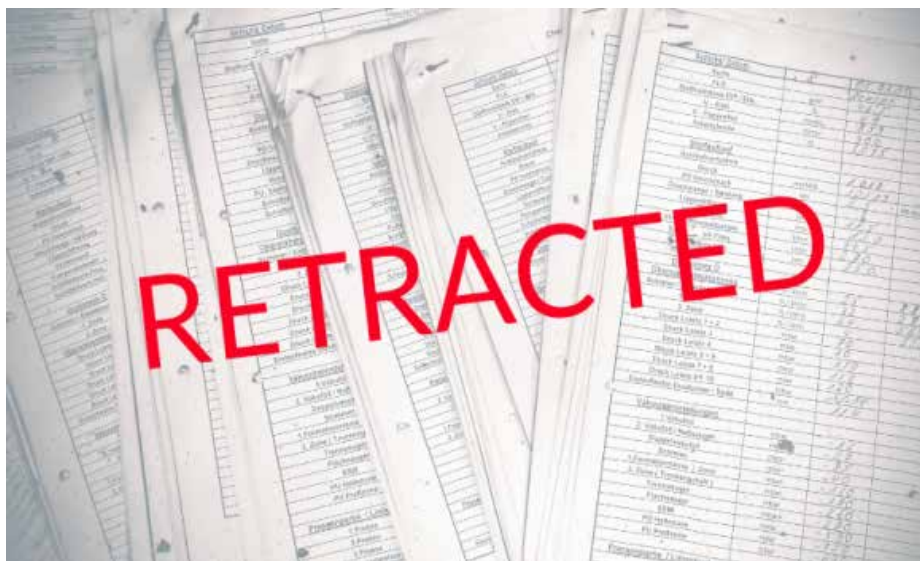
BIOTECH EXPRESS

The gist of Life Science



FOLLOW THE PATH OF SUCCESS

Chemist in India loses seven papers of biology, blames outsourcing of images



May 10, 2023

The retraction notices, issued in late March by the Royal Society of Chemistry (RSC) in the U.K., all state that:

The authors informed the Editor that the characterization of the original samples was outsourced, and they do not have the original raw data for the published results. Given the significance of the concerns about the validity of the data, and the lack of raw data, the findings presented in this paper are not reliable.

The corresponding author, Dhanaraj Gopi of Periyar University in Tamil Nadu, had several papers flagged on PubPeer starting in 2019, including some that have not been retracted.

Gopi replied, admitting that there had been “inadvertent misrepresentation of images in our paper due to errors in the assembly of figure panels, which were reshuffled during revision or resubmission.”

He added:

Since We have no expertise in biology, We got in touch with [the] biological institution. So, we are strongly apologizing for this unintentional error. Mostly, these type[s] of errors happen due to the outsourcing [of] images. In this regard, we assure you that this mistake will not happen anymore. Also, we are in the process of correcting this in the journal. And we hope that this error does not change the interpretation of the results or the conclusions of the work in this journal.

Bik expressed puzzlement at Gopi’s comments:

Does this mean that certain figures in this paper were created by outsourcing experiments? And that the authors do not have any expertise [in] what these experiments are showing? Could the authors please clarify which of the figures in this paper were outsourced and to which institute or company? Could the authors also please clarify which part of their paper they do not have expertise in, and which parts of the paper they feel they are not responsible for?

These duplications within figures are really, really hard to explain by simple mistakes, so any clarification on what actually happened here would be welcome.

FDA approves first respiratory syncytial virus (RSV) vaccine



04 May 2023

The U.S. Food and Drug Administration approved Arexvy, the first respiratory syncytial virus (RSV) vaccine approved for use in the United States. Arexvy is approved for the prevention of lower respiratory tract disease caused by RSV in individuals 60 years of age and older.

RSV is a highly contagious virus that causes infections of the lungs and breathing passages in individuals of all age groups. RSV circulation is seasonal, typically starting during the fall and peaking in the winter. In older adults, RSV is a common cause of lower respiratory tract disease (LRTD), which affects the lungs and can cause life-threatening pneumonia and bronchiolitis (swelling of the small

airway passages in the lungs). According to the U.S. Centers for Disease Control and Prevention, each year in the U.S., RSV leads to approximately 60,000-120,000 hospitalizations and 6,000-10,000 deaths among adults 65 years of age and older.

The safety and effectiveness of Arexvy is based on the FDA's analysis of data from an ongoing, randomized, placebo-controlled clinical study conducted in the U.S. and internationally in individuals 60 years of age and older. The main clinical study of Arexvy was designed to assess the safety and effectiveness of a single dose administered to individuals 60 years of age and older. Participants will remain in the study through three

RSV seasons to assess the duration of effectiveness and the safety and effectiveness of repeat vaccination. Data for a single dose of Arexvy from the first RSV season of the study were available for the FDA's analysis.

In this study, approximately 12,500 participants have received Arexvy and 12,500 participants have received a placebo. Among the participants who have received Arexvy and the participants who have received a placebo, the vaccine significantly reduced the risk of developing RSV-associated LRTD by 82.6% and reduced the risk of developing severe RSV-associated LRTD by 94.1%.

Over a Quarter of a Billion Faced Severe Hunger in 2022 - Report



May 10, 2023

About 259 million people in 58 countries and territories experienced acute food insecurity in 2022, up from 193 million individuals from 53 countries in 2021. These figures are according to the Global Report on Food Crises released by the Food Security Information Network.

“More than a quarter of a billion people are now facing acute levels of hunger, and some are on the brink of starvation. That’s unconscionable,” UN Secretary-General

António Guterres wrote in the report’s foreword.

The report’s 2022 findings provide the highest count of people experiencing hunger for the last seven years. Economic shocks due to the COVID-19 pandemic and the war in Ukraine were found to be the main drivers of food crises, especially in the world’s poorest areas because of their high dependence on imported food and agricultural products which are vulnerable to global food price impacts. Aside from economic shocks and conflicts, weather/climate extremes

such as drought, flooding, tropical storms, and cyclones, also contributed to the food crises.

“This crisis demands fundamental, systemic change. This report makes clear that progress is possible. We have the data and know-how to build a more resilient, inclusive, sustainable world where hunger has no home — including through stronger food systems, and massive investments in food security and improved nutrition for all people, no matter where they live,” the UN Secretary-General added.

Indian Research scholars express frustration over DST's tweet, plan stir



May 12, 2023

A tweet from the Department of Science and Technology (DST) has inflicted fresh wounds on research scholars all over India. Yesterday, May 10, the DST mentioned it was working on the scholars' demands and would resolve the matter soon, asking them to have patience. Already frustrated over the department's lacklustre response to their previous demonstrations, the scholars now plan protests.

Scholars have three principal demands:

1. Regular disbursement of fellowships

As of now, scholars receive their fellowships once every 3-6 months,

which makes it difficult for them to focus on research, said Dr Vishwakarma. "One has to constantly worry about money and surviving amidst expenses," he added.

2. Hike in fellowships

The scholars want that the fellowships hiked every 4 years, keeping in tune with the increasing expenses. The last hike was made in 2018, which called for another to be completed last year. But it didn't happen, despite multiple representations from AIRSA.

3. Infrastructure to check harassment issues

"Already two students died by suicide in IIT Madras recently, and

many more such incidents have been heard of previously. Scholars are harassed at their institutions by the administration, faculty and even fellow students. A majority of such issues are not even reported. We want the government to take this seriously and establish a mechanism to check such incidents," Dr Vishwakarma explained.

In a nutshell, scholars want a "healthy and prosperous environment" for research. They already held a nationwide protest over their demands in February this year. Now, another series of protests is likely to follow.

U.S. FDA approves PREVNAR 20[®], Pfizer's 20-valent pneumococcal conjugate vaccine



27 April, 2023

Pfizer Inc. (NYSE: PFE) announced today that the U.S. Food and Drug Administration (FDA) has approved PREVNAR 20[®] (20-valent Pneumococcal Conjugate Vaccine) for the prevention of invasive pneumococcal disease (IPD) caused by the 20 *Streptococcus pneumoniae* (pneumococcal) serotypes contained in the vaccine in infants and children six weeks through 17 years of age, and for the prevention of otitis media in infants six weeks through five years of age caused by the original seven serotypes contained in PREVNAR[®].

“Today’s FDA approval of our vaccine, PREVNAR 20, now offers parents the ability to help protect their children against 20 pneumococcal serotypes in

circulation, which represent the majority of pneumococcal disease in U.S. infants and children,”(1,2) said Anneliesa Anderson, Ph.D., Senior Vice President and Chief Scientific Officer, Vaccine Research and Development, Pfizer. “This important PREVNAR 20 approval builds on more than 20 years of real-world impact with PREVNAR and PREVNAR 13, safety data, and effectiveness; highlighting Pfizer’s leadership in developing groundbreaking pneumococcal conjugate vaccines to help protect infants and their families from life threatening infections. We are grateful to the families and clinical investigators who participated in this research and our colleagues who have worked tirelessly to develop this breakthrough vaccine.”

The FDA’s decision is based on re-

sults from the Phase 2 and Phase 3 clinical trial programs for the pediatric indication for PREVNAR 20. Three core Phase 3 pediatric studies contributed to data on the safety, tolerability, and immunogenicity of PREVNAR 20, including previously announced positive, top-line results of the pivotal U.S. Phase 3 study (NCT04382326). Further positive data from a Proof-of-Concept Phase 2 study (NCT03512288) that assessed the safety and immunogenicity of PREVNAR 20 also supported the FDA’s decision.

In August 2022, Pfizer announced positive top-line results from its pivotal Phase 3 study in U.S. in-

U.S. FDA Flags Lapses At Zydus Lifesciences' Ahmedabad Facility



25 April, 2023

The U.S. drug regulator has flagged three procedural lapses in a pre-approval inspection at Zydus Lifesciences Ltd.'s manufacturing facility SEZ-1, located in Ahmedabad.

“The U.S. Food and Drug Administration (USFDA) conducted an inspection at the manufacturing facility SEZ-1 of Zydus Lifesciences Ltd., located at Pharmez, Ahmedabad, from March 20 to 24, 2023,” the company had said in a March 30 exchange filing.”

“The inspection was a pre-approval inspection as well as a good manu-

facturing practices audit and concluded with three observations.”

These are:

Equipment and utensils are not cleaned and maintained at appropriate levels to prevent contamination that would alter the safety and quality of the drug product. Specifically, the cleaning of manufacturing equipment and its verification for cleanliness are inadequate.

Failure to review an unexplained discrepancy, whether or not the batch has been distributed. Three inadequate investigation incidents

were noted.

Laboratory controls do not include the establishment of appropriate test procedures to ensure products conform to certain standards. In particular, the quality unit lacked adequate oversight on the use of qualified reference standards in the validation of analytical methods and testing of drug products filed in U.S. markets. Five instances were observed.



icmr NIRRCH
INDIAN COUNCIL OF
MEDICAL RESEARCH NATIONAL INSTITUTE FOR RESEARCH
IN REPRODUCTIVE AND CHILD HEALTH

Training Course on Medical Genetics

(19th June- 14th July 2023)

at

Genetic Research Centre

ICMR-National Institute for Research in Reproductive and Child Health, Mumbai



आजादी का
अमृत महोत्सव

Sponsored by

Department of Health Research
Ministry of Health & Family Welfare
Government of India

Convenor: Dr. Geetanjali Sachdeva

Director, ICMR-NIRRCH

Organizer: Dr. Shailesh Pande

Head, GRC, ICMR-NIRRCH

Health Research Scheme of DHR

The scheme is intended to create a pool of talented health research personnel in the country by upgrading skills of faculty of medical colleges, research scientists, medical practitioners and others by imparting specialized training in priority areas of health research. The goal of this program is to encourage and support the trainees to develop and take up research projects for addressing critical national and local health problems.

About ICMR-NIRRCH

ICMR-National Institute for Research in Reproductive and Child Health (ICMR-NIRRCH) located at Parel, Mumbai is a premier Institute which conducts clinical, basic, operational and socio-behavioural research on different aspects of reproductive and child health. The major thrust areas of research at the institute are Maternal and Child Health, Women's Health, Fertility Regulation, Infertility, Genetic Disorders, HTA, RTIs, STIs and HIV.

About the Course

The DHR course on "Medical Genetics" is being organized by the Genetic Research Centre, ICMR-NIRRCH. This course aims at imparting conceptual and technical know-how on the advances in clinical and laboratory genetics. This 4-week course will cover both the basic concepts and advances in the field of cytogenetics, molecular genetics, and genomics through a series of lectures, tutorials, interactive sessions and hands-on training. A special emphasis will be given to impart education and skill upgradation in the area of genetics and its application in infertility. Various aspects of clinical genetics will also include case studies and genetic counseling. Lectures on Research Methodologies have also been incorporated in the course schedule. Participants will be given demonstrations of the techniques relevant in the diagnosis of various genetic disorders. The course also comprises a module on bioinformatics with hands-on training. Also, there will be lectures by eminent medical geneticists and clinicians from relevant fields. The workshop is being planned in an offline mode. However, in unavoidable circumstances, the workshop may be conducted online.

Who Can Apply

- Indian citizens with MBBS/MD/MS/DM or MCH holding regular positions are eligible to apply.
- Faculties from Medical colleges/ Hospitals /Institutes/ Model Rural Health Research Units (MRHRUs)/Multi-Disciplinary Research Units (MRUs). Candidates from North-East and semi-urban/rural regions of India are encouraged to apply.
- Candidates in service should forward their application through proper channels. Such applications will be considered complete only if a "No Objection Certificate" from the Head of the Institution is uploaded.

Registration Details

- A maximum of 16 participants will be enrolled for the course.
- Submit your application online in the prescribed format at www.nirrch.res.in on or before **25th May 2023**.
- Selected candidates will receive an email confirmation by **31st May 2023**.
- The training course is free of charge. However, the selected candidates will have to confirm their participation by **8th June 2023** through submission of a DD for Rs. 2000/- drawn in favor of "**The Director, NIRRCH, Mumbai**" (refundable after successful completion of the course).
- Upon request, outstation participants may be provided lodging facility at a nominal cost.
- Travel and food will have to be arranged by the candidates.
- Please contact grc@nirrch.res.in for any further queries.

[Click here for Online Registration](#)

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH Anusandhan Bhawan, 2 Rafi Marg, New Delhi-110 001

CSIR is looking for Director, CSIR-Indian Institute of Chemical Biology (CSIR-IICB), Kolkata.

CSIR invites applications/nominations for coveted position of Director, CSIR- Indian Institute of Chemical Biology (CSIR-IICB), Kolkata in order to participate and contribute in conceived vision and mission of CSIR which includes providing S,T&I leadership for sustainable development of the country encompassing economic growth with environment and societal benefits.

Qualifications, Experience and Age: -

Essential Qualifications: Ph.D. in Natural Sciences or Master's Degree in Engineering/Health/Medical Sciences (for Engineering/Health/Medical Sciences, Ph.D. is desirable).

Age: 45 years or above but not exceeding 56 years.

Experience: At least 16 years of experience in Research and Development (with focus on translational research) in the areas of activities of the laboratory/Institutes/Centre and demonstrated excellence in leadership therein.

Years of experience shall be computed from the beginning of candidate's research career.

How to apply: The application/nomination for the post with detailed bio-data highlighting scientific and translational contributions in details alongwith list of publications/patents etc. may be sent through email on email ID drc@csir.res.in or by post to Director Recruitment Cell, Council of Scientific and Industrial Research (CSIR), Anusandhan Bhawan, 2, Rafi Marg, New Delhi-110001. A brief bio-data in the proforma given below may also be sent. The last date of the receipt of applications is 31/05/2023.

For more details about the Institute, visit <http://www.iicb.res.in>



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INSTITUTE OF ADVANCED RESEARCH
The University for Innovation

DEPARTMENT OF BIOTECHNOLOGY AND BIOENGINEERING

A Two-Day workshop on “Rational Drug Design (RDD-2023)”

July 28 : Structure-based drug
design Module

May 30 : Ligand-based drug
design module

Date : July 28 - 29 , 2023

Who Can Attend? : The workshop will be helpful to the UG (B.Sc./B.Tech.) students of the Biosciences and Engineering streams.

Highlights

- Hands-on training in major bioinformatics databases, tools, and software through practice problems and assignments.
- Certificate for all participants, attending the workshop
- Opportunity to interact with experts.



SCAN TO REGISTER

LAST DATE TO REGISTER: 25th July

Limited 30 Seats only

To Register: <https://forms.gle/V8WX5LoV9QMbBaX78>

Registration fees: ₹499

CONVENER

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Institute of Advanced Research, Koba Institutional Area,
Near GIFT City Bridge, Gandhinagar - 382426, Gujarat



National Seminar on Biotechnology for Sustainable Biosphere

30 JUNE-01 JULY 2023



Organized by




Department of Biotechnology
School of Life Sciences
Mizoram University
Aizawl – 796004



Address for Correspondence
Dr. Satish Kumar Pandey,
Assistant Professor
Dept. of Biotechnology,
Mizoram University

Email address: satish@mzu.edu.in
Phone no: 9915926715

Important Dates

-  **Registration opening:** 31 March 2023
-  **Registration deadline:** 19 June 2023
-  **Last day of abstract submission:**
19 JUNE 2023

Registration fee:

UG/PG Students: Free
PhD/ Research Fellow: Rs 200/-
Faculty and Industry experts: Rs 500/-

[Click here for registration](#)

REGISTER NOW 

Bank details:

Account number: 50100059131063
IFSC: HDFC0001814

Transaction number should be provided in the registration form



**Biotechnology and
Biological Sciences
Research Council**

Title

India-UK partnership to address farmed animal diseases and health

Funders involved

Biotechnology and Biological Sciences Research Council (BBSRC), UK Research and Innovation Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India

Funding available

£5 million from BBSRC for the UK applicants with matched equivalent resources from DBT for successful Indian applicants

Total funding available (indicative) £10 million.

Apply for funding to advance the mechanistic understanding of host-pathogen interactions in farmed animals and/or to tackle Veterinary Antimicrobial Resistance (Vet-AMR)

Key dates / timeline

Activity	Timing
Scoping phase between UKRI (BBSRC and UKRI India) and DBT	Current
Deadline for DBT-BBSRC to agree call text	14 April 2023
Joint call opens	2 May 2023
Community webinar	Wb 22 May 2023
Proposal submission deadline	11 July 2023 4pm BST 12pm IST
Eligibility and scope checks (UK and India)	15 – 25 July 2023

DBT enquiries

Dr. Vinita Nitin Chaudhary, Scientist 'E', International Cooperation Division-Bilateral Programs
Department of Biotechnology, vinita.chaudhary@nic.in

Expression of Interest (EoI)

Transfer of Technology for Multiplex single tube Real time RT PCR assay for detection of Influenza A, B and SARS CoV2

Indian Council of Medical Research (ICMR), New Delhi, invites Expression of Interest (EoI) through email from experienced Indian agencies for undertaking Transfer of Technology for commercialisation and marketing of Multiplex single tube Real time RT PCR assay for detection of Influenza A , B and SARS CoV2.



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MEDICAL RESEARCH
Serving the nation since 1911

भारतीय आयुर्विज्ञान
अनुसंधान परिषद

Indian Council of Medical Research
V. Ramalingaswami Bhawan, P.O. Box No. 4911
Ansari Nagar, New Delhi - 110029, India
Website: <https://main.icmr.nic.in/>

Last date/Time of submission - 14.06.2023

The EoI Document containing the details of qualification criteria, submission details, brief objective & Scope of work and evaluation criteria etc. can be downloaded from the ICMR website (<https://www.icmr.gov.in>)

In case of any clarification required, please contact:

For scientific issues - Dr. Varsha Potdar, Scientist-E, ICMR-NIV, Pune - 9890307757

For Administrative issues - Dr. R. Lakshminarayanan, ADG (A), ICMR, New Delhi - 9422517998

Under CSIR Integrated Skill Initiative

CSIR -CDRI Skill Development Program

Pathological Tools & Techniques for Biomedical Applications

Course Starts from 26th June, 2023 to 4th August, 2023 (6 Weeks)

The objectives of this training course are to generate skilled human resources ready for employment in the hospital/ diagnostic pathology/ forensic laboratory/ research industry/laboratory and academia. This is a unique opportunity for skill development, training in the area of pathology starting from the basic steps of report preparation. The course will cover the important technique to work with the pathology/ diagnostic laboratory or drug research. To create livelihood opportunity for the youth is the main objective behind designing the course. This will provide excellent opportunities for the youth having a biological background and will bridge the gap in medical services of our country. The candidates will have excellent opportunity to work with pathology laboratory, practical exposure of equipment and sample handling of various laboratory animals at CSIR-CDRI.

Essential Qualification: Minimum Intermediate with science

No of Seats: 20

Fees: Rs.10000/-

Training Curriculum- The course structure consists of theoretical and hands on training. General introduction to Pathology & Pathological techniques with hands on exposure to basic laboratory instruments used in Pathology Laboratory. It includes:

- ◆ Blood collection and necropsy of laboratory animals
- ◆ Clinical Pathology-Reception & labeling of samples, analysis, record keeping, cleaning
- ◆ Preparation of various stains & reagents
- ◆ Stool Examination-Routine & Microscopic, Occult blood test
- ◆ Urine Examination-Routine & Microscopic, Preservative and fixation of various samples
- ◆ Haematology analysis
- ◆ Blood smear preparation
- ◆ Staining of blood smear and Differential Leucocyte Count (DLC) analysis
- ◆ Biopsy/ Cytology-Collection of material, preparation of stain and staining by Leishman /Giemsa
- ◆ Diagnosis & Interpretation
- ◆ Demonstration the process of Histopathology, slide preparation and staining
- ◆ Genotoxicity test procedure
 - 1) Micronucleus test
 - 2) Chromosomal aberration
 - 3) Bacterial reverse mutation assay (Ames assay)
- ◆ Organization and management of laboratory
- ◆ Quality control

CSIR-Central Drug Research Institute, Lucknow

Program Coordinator: Dr. Sanjeev Kumar Shukla
Sec-10, Jankipuram Extension, Sitapur Road
Lucknow 226031 (Uttar Pradesh)
E-mail: sdp@cdri.res.in

Resource Person: Dr. Madhav N. Mugale, Mo: 9849607144, Email: madhav.mugale@cdri.res.in



**"INNOVATIVE & SUCCESSFUL PROGRAM TO BRIDGE
THE GAP BETWEEN GENOMICS & NUTRITION"**

MICROBIOME AND NUTRITION

Dates: 19 - 23 June 2023

Jointly Organized By

Centre for Functional Genomics & Bioinformatics (CFGB)

and

Centre for Ayurveda Biology & Holistic Nutrition (CABHN)

Programme Co-ordinators

Dr. Pavithra N

Asst. Professor, CFGB

Dr. Gurmeet Singh

Professor, CABHN

Venue: The University of Trans-Disciplinary Health Sciences and Technology
Yelahanka, Bangalore

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