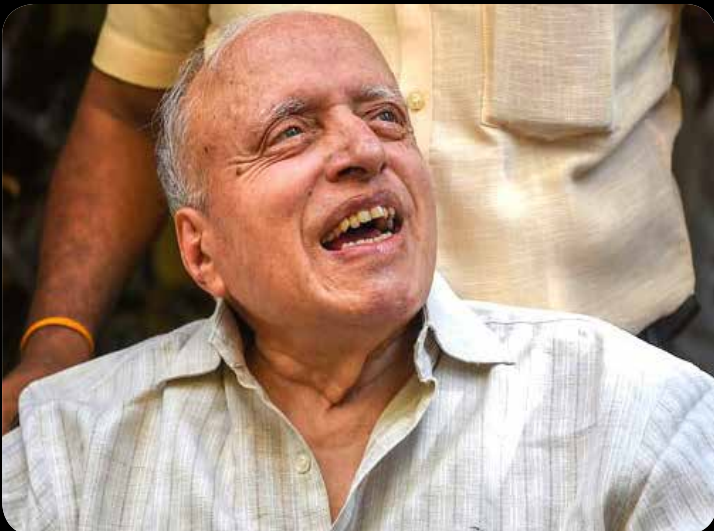


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Elsevier ranked Prof Ashok Pandey among top 5 scientists of country

A tribute to Dr M S Swaminathan



Government funds dry up to honour Indian scientists

The Lancet was made for political activism

Scientists create human embryo in lab without eggs, sperm

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Editors in News

Elsevier ranked Prof Ashok Pandey among top 5 scientists of India



This year Elsevier has put Prof Ashok Pandey among the top 5 scientists of India and is continuously coming on top in India in biotechnology among top 2% scientists in the world.

Also this month he was awarded Topmost Indian Researcher second time by career360 held at Pradhanmantri Sangrahalay, New Delhi.

Professor Ashok Pandey, who has an h-index of 132- the highest in biotechnology in India- is currently

Distinguished Scientist at Centre for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, Lucknow, India; HTBS National Innovation Chair, and Honorary Executive Director at the Centre for Energy and Environmental Sustainability- India. Formerly, he was Eminent Scientist at the Center of Innovative and Applied Bioprocessing, Mohali and Chief Scientist & Head of Biotechnology Division at CSIR's National Institute for Interdisciplinary Science and Technology at Trivandrum.



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A tribute to Father of Indian Green Revolution Dr M S Swaminathan

by Dr Piyush Kumar

Dr. Swaminathan's contributions extended beyond the laboratory. He pioneered innovative methods to educate Indian farmers on the adoption of a holistic approach involving high-yielding wheat varieties, judicious fertilizer use, and more efficient farming techniques.



I vividly remember my last conversation with Dr Swaminathan. I was planning a twitter based conference in the field of Biotechnology in 2018. Yes!! An online conference before pandemic and before it became a norm. I emailed Dr Swaminathan, explained him the concept, asked to put his name in the advisory committee and he readily agreed. He was always willing to guide the next generation for a better scientific landscape in India. I have another incident to share.

Kamal and I were planning an issue on green revolution for Biotech Express Magazine in 2015 and we wanted to get direct quotes from Dr Swaminathan himself. To our surprise, he gave us detailed answers to our questions. We found a new respect for him. He elaborated on his motivations coming from Gandhiji's goal of a hunger free India. He was greatly moved by Bengal famines and did not want such a misfortune to strike India again. He believed in the saying "the future belongs to science and those who make friendship with it". I leave it up to readers to guess whose words these were.

During the 1960s, a grim forecast loomed large as demographers and economists widely predicted that food production in developing nations would be outpaced by population growth, potentially leading to widespread famine, not only in India but across

Asia. At that time, the only lifeline averting such a calamity was the massive import of grains.

As a young scientist in the 1950s, Dr. M. S. Swaminathan learned of Dr. Norman Borlaug's revolutionary Mexican dwarf wheat variety. Later, these two visionary scientists worked diligently, side by side, to develop wheat varieties that not only yielded higher grain production but also possessed sturdy stalk structures capable of supporting the increased biomass.

Dr. Swaminathan's contributions extended beyond the laboratory. He pioneered innovative methods to educate Indian farmers on the adoption of a holistic approach involving high-yielding wheat varieties, judicious fertilizer use, and more efficient farming techniques.

In 1965, Dr. Swaminathan embarked on a massive initiative, setting up thousands of demonstration and test plots in northern India to showcase small-scale farmers the potential of the genetically superior grains in their own fields. In the very first year, the harvest witnessed a threefold increase in production levels. This remarkable transformation not only improved agricultural yields but also ushered in scientific advancements that farmers themselves em-

braced. Dr. Swaminathan's direct engagement with farmers transcended the barriers of illiteracy and limited formal education, endowing a generation of Indians with valuable insights into modern agricultural practices.

Dr. Swaminathan's vision worked like a miracle for India. In just a few years, he elevated the wheat crop yield from 12 million tons to an astounding 23 million tons across four crop seasons, effectively ending India's reliance on grain imports. His collaboration with Prime Minister Indira Gandhi yielded long-term agricultural policies and programs aimed at maintaining self-sufficiency across the nation.

His leadership and fame extended beyond India's borders. Dr. Swaminathan chaired numerous prestigious international conferences, including the 1974 United Nations World Food Congress in Rome. An ardent advocate of global scientific collaboration, he influenced renowned organizations and research centers such as the International Union for the Conservation of Nature and Natural Resources, the International Crops Research Institute for the Semi-Arid Tropics, and the International Federation of Agricultural Research Systems for Development, where he served as Director General from 1972 to 1979.

Dr. Swaminathan's commitment to agricultural development remained unwavering. He served as the Principal Secretary of the Ministry of Agriculture in 1979 and 1980, and he played a pivotal role in agricultural and rural development during his tenure in India's Planning Commission from 1980 to 1982. In 1982, he assumed the position of Director General at the International Rice Research Institute in the Philippines.

In recognition of his extraordinary contributions, Dr. Swaminathan was honored as the first World Food Prize Laureate in 1987. Utilizing the funds he received from this prestigious award, he established the M.S. Swaminathan Research Foundation (MSSRF) in Chennai, India, in 1988 (now lead by Dr Soumya Swaminathan). With a global network of contacts, he initiated dialogues among scientists, social scientists, and field workers, all with the shared goal of "reaching the unreached." The Foundation's initiatives continue to engage with international leaders and rural communities alike to address crucial issues, including the protection of coastal biodiversity, the promotion of biotechnological approaches in micro-level farming, the pursuit of groundbreaking innovations in ecotechnology, the facilitation of community education and technical training,

the initiation of affordable, self-sustaining programs for rural Internet access, and the empowerment of grassroots-level food producers to enhance food security and sustainable development.

Dr. Swaminathan garnered a multitude of international accolades, including the 1994 UNEP Sasakawa Environment Prize, the UNESCO Gandhi Gold Medal in 1999, the prestigious 1999 Indira Gandhi Prize for Peace, Disarmament, and Development, and the distinguished Franklin D. Roosevelt Four Freedoms Award in 2000. TIME Magazine, acknowledging his far-reaching im-

act, celebrated him as one of the twenty most influential figures from Asia in the 20th century. He was the first citizen of a developing nation to be elected as the President of the Nobel Peace Prize-winning Pugwash Conferences on science and world affairs. Dr. M. S. Swaminathan's tireless efforts and visionary leadership continue to inspire and guide the global community in addressing critical issues of food security, sustainability, and peace.

Dr. Swaminathan garnered a multitude of international accolades, including the 1994 UNEP Sasakawa Environment Prize, the UNESCO Gandhi Gold Medal in 1999, the prestigious 1999 Indira Gandhi Prize for Peace, Disarmament, and Development, and the distinguished Franklin D. Roosevelt Four Freedoms Award in 2000.

We lost a great visionary, a scientist par excellence and an agricultural luminary. Dr Swaminathan was a proponent of free and fearless scientists. In his own words, "Indian science requires above all dedicated scientists who have the courage of the conviction. They should express their views based on scientific facts freely and fearlessly".

The article has used following sources for some of the historical facts and figures.

1. https://www.world-foodprize.org/en/laureates/19871999_laureates/1987_swaminathan/
2. [Borlaug Blog - How Receiving the World Food Prize Had an Impact on My Work](#)
3. [Food Security in an Era of Price Volatility and Climate Change - Speech](#)
4. [International Crops Research Institute for the Semi-Arid Tropics \(ICRISAT\)](#)
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8. [Reuters: "India's green revolution is back in spotlight"](#)
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Editorial

Govt funds dry up to honour Indian scientists

by Kamal Pratap Singh

In a recent meeting held September 16, 2022 government of India has decided restricting the number of Science awards and awardees and scrapping of cash reward which was given earlier. Home secretary Ajay Kumar Bhalla lounded it as the Prime Minister's vision of transforming India's award ecosystem. Secretaries and officers of various departments under the Ministry of Science and Technology, Ministry of Earth Sciences and Ministry of Health and Family Welfare attended

the meeting.

A total of 56 awards will be given in four categories covering 13 domains of science namely physics, chemistry, biological sciences, mathematics, computer science, earth science, medicine, engineering, agricultural science, environmental science, technology & innovation, atomic energy and space science.

The new set of awards i.e. Rashtriya Vigyan Puraskar



will have four categories. Vigyan Ratna will recognise the lifetime achievement of scientists, Vigyan Shri will recognise distinguished contributions to a field, Vigyan Yuva Shanti Swarup Bhatnagar will encourage young scientists who have made exceptional contributions in their field, and Vigyan Team will recognise teams of three or more. The awards will commence in 2024. There will only be three Vigyan Ratnas awarded yearly: 25 Vigyan Shri, 25 Vigyan Yuva, and 3 Vigyan Team. Only Vigyan Yuva will have an age limit of 45 years.

A committee under the chairmanship of the principal scientific adviser will select the awardees. The awards processes will be carried out by the Council for Scientific and Industrial Research (CSIR) for the first two years and will be taken over by the newly instituted National Research Foundation.

Deccan Herald on 29 September 2023 published an article on their website under heading “Downgrading science, government style” in which they wrote, All important science awards in the world carry a financial

component. It is an honour and an incentive, and the government is wrong to deny it to scientists.

The Centre has decided to do away with over 250 awards given to scientists and medical researchers and decided to do away with the cash component of the award for prestigious Shanti Swarup Bhatnagar award which has been the country’s best-known and highly regarded awards for excellence in various fields of science since 1958.

Shanti Swarup Bhatnagar award recipients currently receive a cash award of Rs 5 lakh and a special honorarium of Rs 15,000 a month for 20 years. This tenure may be reduced to 15 years, according to the minutes.

Upon asking why there will be no cash prize, the Director General Council of Scientific & Industrial Research (CSIR) N. Kalaiselvi said, “Why do scientists need cash prize? There will be a medal and a citation,” Kalaiselvi said to ThePrint during a press interaction.

According to various sources, the reason for doing away with cash component is people do science for

love and passion and not for money. But this logic seems fallacious because Scientists need robust support from the govt. Top science awards across the world like Nobel Prize use money as one way to honour the contribution of scientists, this information is itself available on Indian government news platform i.e. DD News.

Amitabha Bandyopadhyay, professor at IIT Kanpur, was surprised that the home ministry had an advisory role in deciding science recognitions.

So far we understand that the decision has been made and scientists need to suffer but how, let see now.

Firstly we know that India has very less spending on science and research as compared to other nations and this concern is not new. In 2018, Subash Lakhota, a professor of zoology at the Banaras Hindu University in Varanasi and editorial head of the journal *Proceedings of the Indian National Science Academy* wrote “the current situation is greatly alarming since it is slowing down the momentum of resurgence in research output from various academic institutions.” Similar concerns were raised by Lingadahalli Subrahmanya Shashidhara, INSA Fellow and chair of Biology at the Indian Institute of Science Education and Research, Pune.

Though India’s Parliament approved a new research funding agency aimed at boosting the nation’s scientific standing. But some analysts are skeptical that the Anusandhan National Research Foundation—which aims to inject some \$6 billion into basic and applied research over 5 years—will have a major impact. Critics fear that will open the door to political interference. And some wonder whether the foundation can realize its funding plan, which calls for industry to contribute some 70% of its budget.

Crunch of funds and low salary have always remain challenges for Indian scientists and reason for brain drain which refers to the emigration of skilled researchers. It is well known now worldwide that the Indian education system produces high quality students in science and technology disciplines. However, there is a major trend for the students to migrate abroad for higher studies, often never to return, resulting in a loss of skills for the Indian scientific community.

It is also a fact that in India investment in research is very little, and development of equipment in the country remains a hurdle. We have many examples like Prof S C Lakhota who built biotech in India from scratch, made their own instruments, reagents and other facilities to advance research when they had no money to do so. Now scrapping meagre amount of award money can deprive such scientists doing good work because with this prize money they can buy equipment, reagents, chemicals, consumables, computers or fund travel to scientific conferences when they do not get project funds because of nepotism.

Now coming to India’s ambitious startup projects, it has been seen that a funding squeeze at Indian startups has already led to layoffs. Startups in India raised just \$2 billion in the first quarter of 2023, 75% lower than the same period of last year, and the smallest quarterly number in nearly three years, figures from data firm CB Insights showed. At this run rate, startups may end up raising less than \$10 billion this year, a far cry from the record \$30 billion garnered in 2021 and \$20 billion in 2022.

The slowdown is a setback for startups as well as Prime Minister Narendra Modi who has lauded their success by calling such companies the “backbone of new India”.

Minister of State for Science and Technology Jitendra Singh on July 8, 2023 said that the number of biotech startups in the country has soared from 50 in 2014 to 6000.

So, we can see that India’s current secretaries of science departments have scrapped an important part of scientists’ motivation and earning without considering the facts that it can lead to disinterest in science research and might lead to more brain drain.

If we see total 12 SSB awards were given in 2022 which amount to only 60 lakh Rs. prize money and this is much lesser than a single international visit of Prime minister or any single political rally arrangements.



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Event Report

FABA and ABF Conduct Hands-on Training on CRISPR-Cas-Mediated Genome Editing in Plants

The global population is projected to expand from 8 billion people now to 10 billion by 2050. The world food production (measured in crop calories) will consequently need to increase by about 50% compared with 2010. Yet, today, around 765 million people face hunger. More than 3 billion people cannot afford a healthy diet due to high costs, income inequality, persistent pandemic conditions and unceasing armed conflicts around the world (Genome Edited Foods, *Nat Rev Bioeng* (2023). <https://doi.org/10.1038/s44222-023-00115-8>). Conventional plant breeding and genetic engineering technologies alone will not meet the growing demands for food production.

In this connection emerging technologies like genome editing, CRISPR-CRISPR-Cas-based technologies, can transform agriculture and can help to achieve food security for the growing world population. In order to provide hands-on training on this emerging technology, the Federation of Asian Biotech Associations (FABA) in association with the Agri Biotech Foundation organized a six-day hands-on workshop on “CRISPR-Cas: Mastering the Art of Plant Genomics Workshop 2023,” from September 25th to September 30th. Over the course of six immersive days, this workshop guided the participants on a fascinat-



ing journey into the complexity of genome editing in plants and its applications in disease resistance, higher yields, improved nutritive characteristics etc.

The workshop commenced with the inauguration of two distinguished guests: Dr. RK Mathur, Director- IIOR, and Dr. KK Narayanan, Director, Sthayika Seeds. They laid the foundation for the workshop with an insightful session on ‘Introduction to Genome Editing.’ These talks on the Basics of CRISPR-Cas Technology and gRNA Design provided a comprehensive overview of the potential Genetic Enhancement of

Crops through Gene Editing.

On Day 2, Dr. Shashi Kiran from the University of Hyderabad delivered an insightful presentation, delving into the strategic utilization of bioinformatic tools for precise and effective genome editing, which forms a key factor in ensuring the success of gene modifications.

On Day 3, we were enriched by enlightening talks from Dr. V. Dinesh Kumar, Principal Scientist ICAR-IIOR, and Dr. Alok Das, Senior Scientist ICAR-IIPR. They shared their expertise on transforming recalcitrant crops and pulse crops, with a special emphasis on bacterial transformation, aiming toward food security, and sustainability.

On Day 4, we had the privilege of hosting a trio of esteemed experts: Dr. Madhuri Subbiah, a Scientist at NIAB, Dr. Kutubuddin Ali Molla, a Scientist from ICAR-NRRI, and Dr. Narasimha Telugu, a Senior Scientist from Iota Sciences, Berlin. Together, they illuminated the audience with a profound exploration of CRISPR technology's versatile applications in animal production and disease resistance. Moreover, they offered an extensive breakdown of Prime Editing and Base Editing, providing invaluable insights that seamlessly connected the worlds of both plant and animal research.

On Day 5, Prof. J.S. Bentur, Scientist -ABF skilfully navigated the fascinating world of plant-insect interactions, employing an omics approach to unveil intricate biological relationships.

On the final day, Dr. Vibha Ahuja, CGM from BCIL, provided a comprehensive overview of the Indian Government's Policy on Genome Editing. Her insights offered a valuable glimpse into the regulatory and ethical framework that surrounds this transformative technology.

While presiding over the valedictory session, Prof. P. Reddanna, Executive President of FABA, highlight-

ed the efforts made by FABA and ABF in the identification of the best possible experts in the area from the academy and the industry for the workshop. He stressed the importance of networking with the resource persons as well as with fellow participants to be successful in their career development. Later, Dr. Rahul from the University of Hyderabad presented a talk on issues and challenges while applying CRISPR-Cas technology for genome editing.

Shri. Ram Kaundinya, Director General from FSII, gave an inspiring talk during his valedictory address. He highlighted the importance of aligning laboratory research with market and society dynamics. Further, Shri. Kaundinya delved into the strategic importance of mastering the techniques involved in traditional breeding methods alongside advanced genetic engineering and genome editing technologies, to be successful in the industry.

His perspective on potential career paths in the field was not only insightful but also elegantly articulated, serving as a guiding beacon for aspiring professionals and researchers in this domain. Moreover, he illuminated the diverse array of opportunities available to life sciences students in areas such as Regulatory Affairs, Intellectual Property Rights (IPR), and Science Communication, in addition to the traditional areas. Prof. Pakki Reddy, Director, ABF briefed the Chief Guest Shri Ram Kaundinya on the highlights of the workshop in terms of invited talks and hands-on training provided to the participants coming from the academy and the industry from various parts of the country. Dr. Gopal, the Coordinator of the workshop thanked the Chief Guest, the invited speakers, the participants and the organising committee members from FABA and ABF



Guestorial

Integrative Medicines (IM) Market to Grow with a High CAGR during 2023-2035; Increasing Adoption of Natural Remedies Around the World to Drive Market Growth

Research Nester released a report titled “Integrative Medicines (IM) Market: Global Demand Analysis & Opportunity Outlook 2035” which delivers detailed overview of the global integrative medicines (IM) market in terms of market segmentation by intervention, sales channel, and by region.

Further, for the in-depth analysis, the report encompasses the industry growth indicators, restraints, supply and demand risk, along with detailed discussion on current and future market trends that are associated with the growth of the market.

The global [integrative medicines \(IM\) market](#) is projected to grow with a high CAGR during the forecast period, i.e., 2023-2035 on account of the increasing elderly population and rising prevalence of chronic diseases. In addition, rising investment to develop alternative treatment methodologies and growing awareness about mental health are also expected to drive market growth in the future.

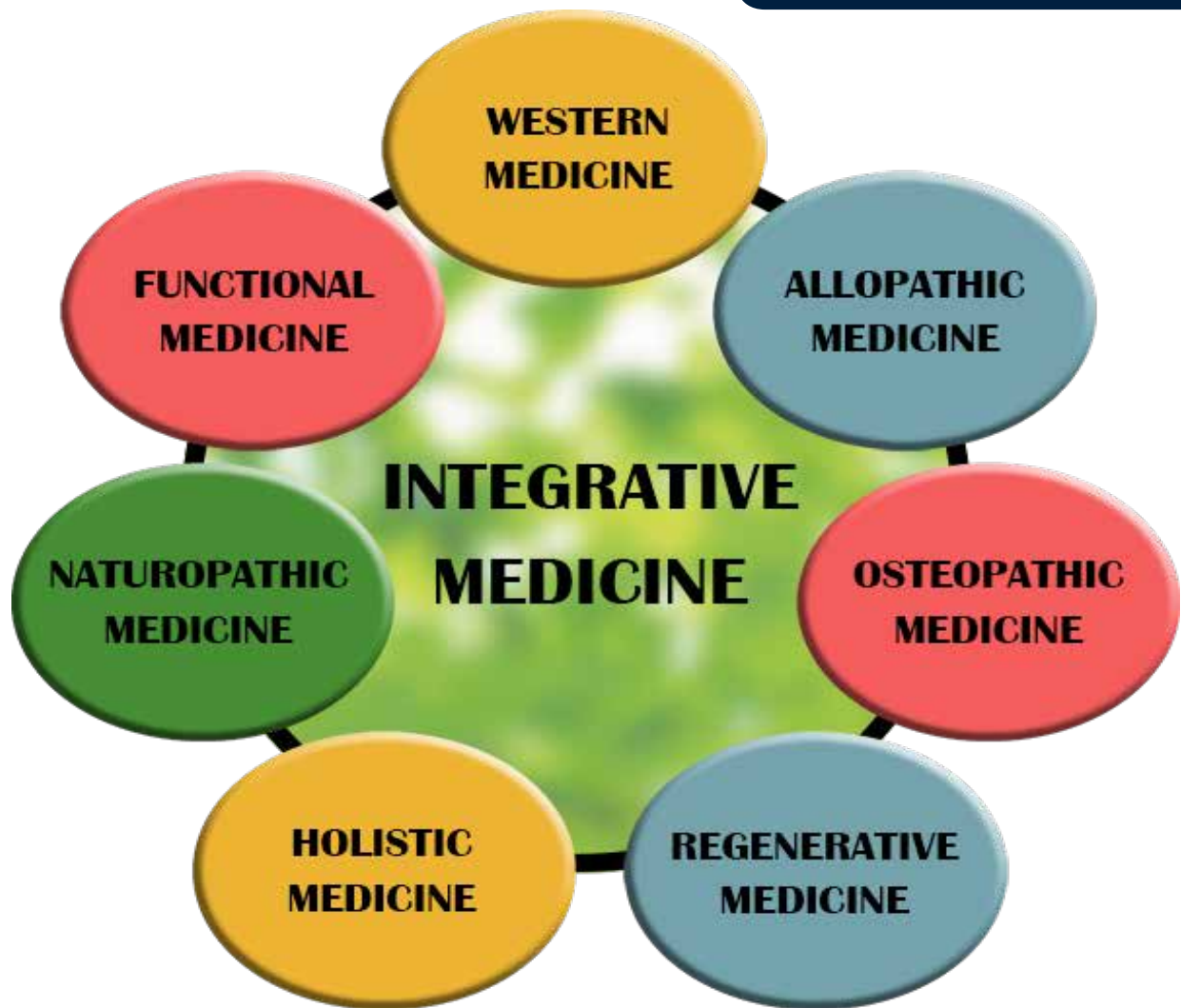
The market is segmented by intervention into botanicals, body healing, mind healing, external energy, and sensory healing. Among these segments, the botanicals segment is anticipated to hold the largest share during the forecast period attributing to the increas-

ing adoption of natural remedies such as Ayurveda and homeopathy worldwide. The segment is also estimated to observe growth owing to the worldwide recognition for its pain free, needle-less and continuous process.

On the basis of region, the market is segmented into North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa, out of which, the integrative medicines (IM) market in the Middle East & Africa is projected to grow at the highest CAGR throughout the forecast period owing to the rising awareness regarding IM. Moreover, the market in Europe is predicted to hold the largest share, which can be attributed to the presence of leading integrative medicine providers in the region.

Increasing Ageing Population and Growing Adoption of Natural Therapies to Drive Market Growth

According to the data collected from the United Nations, it is expected that by the year 2050, every one out of six individuals will be 65 years or older, which accounts for 16% of the total population of the world. Additionally, the number of individuals above 80 years or older is also expected to triple by the end of the year 2050.



Age is one of the most predominant risk factors for chronic and mental disorders. As the population of the globe is ageing at a rapid pace, the cardiovascular diseases, cancer, diabetes, and others is also expected to rise. This in turn is projected to boost the market growth in the forthcoming years.

However, lack of understanding about integrative medicines and poor scientific results are some of the factors that are estimated to restrain market growth in the forecast period.

This report also provides the existing competitive scenario of some of the key players of the global integrative medicines (IM) market, which includes company profiling of Columbia Nutritional, The Healing Company Ltd., Aphria Inc., Nordic Nutraceuticals, Ayush Ayurvedic Pte Ltd, Pure Encapsulations, LLC, Dabur

India Ltd, Rocky Mountain Oils, Sydler India Pvt. Ltd, and others. The profiling enfoldes essential information of the companies, which encompasses business overview, products and services, key financials, and recent news and developments. On the whole, the report depicts a detailed overview of the global integrative medicines (IM) market that will help industry consultants, equipment manufacturers, and existing players searching for expansion opportunities, new players searching possibilities, and other stakeholders to align their market-centric strategies according to the ongoing and expected trends in the future.

<https://www.researchnester.com/reports/integrative-medicines-im-market/3245>



Press Release

US FDA grants Orphan Drug Designation for CRO-67

GRANTED

ORPHAN DRUG DESIGNATION

BY THE FDA

October 4, 2023

Innovative biotech company Noxopharm Limited (ASX:NOX) announces that the US Food and Drug Administration has granted Orphan Drug Designation (ODD) status to Noxopharm's CRO-67 preclinical drug candidate, for the treatment of pancreatic cancer.

The FDA grants ODDs for drugs designed to prevent, diagnose or treat rare diseases or conditions, and the designation comes with various benefits that include:

- Tax credits for qualified clinical trials

- Exemption from user fees (e.g. FDA application fees)
- Potential seven years of market exclusivity after approval

So far this year only two other Australian companies have received an ODD from the FDA, from a total of 260 issued.

CRO-67's designation as an orphan drug supports the company's development plan for the asset, and its future commercial value, as Noxopharm continues to build the data package that will be required for regulatory progression.

The designation comes shortly after further [encouraging CRO-67 data](#) was presented at the American Association of Cancer Research Special Conference on Pancreatic Cancer. The disease is set to become the [second leading cause of cancer-related deaths](#) in the US by 2040, and has a very poor five-year survival rate of about 9% from the time of diagnosis.

Noxopharm CEO Dr Gisela Mautner said: “For CRO-67 to achieve an ODD is a significant milestone in the development of the drug. In addition to financial benefits, the ODD will also strengthen our commercial position in a market that has seen very few new treatments over recent decades.

“Our pancreatic cancer program is a high priority, and we are committed to progressing its development as quickly as possible. Further studies are in the works, as are investigations into dosing and formulation.”

About Noxopharm

Noxopharm Limited (ASX:NOX) is an innovative Australian biotech company discovering and developing novel treatments for cancer and inflammation, including a pioneering technology to enhance mRNA vaccines.

The company utilises specialist in-house capabilities and strategic partnerships with leading researchers to build a growing pipeline of new proprietary drugs based on two technology platforms – Chroma™ (oncology) and Sofra™ (inflammation, autoimmunity, and mRNA vaccine enhancement).

Noxopharm also has a major shareholding in US biotech company Nyrada Inc (ASX:NYR), which focuses on drug development for cardiovascular and neurological diseases.

Dr Gisela Mautner, CEO and Managing Director of Noxopharm, has approved the release of this document to the market on behalf of the Board of Directors.

Dana-Farber Cancer Institute

Signs and Symptoms of Pancreatic Cancer

The majority of symptoms arise because of the **tumor's location** in the pancreas and the relationship of the pancreas to other organs.

- Unexplained weight loss
- Pain in the upper or middle part of the abdomen
- Fatigue
- Vomiting, diarrhea
- Jaundice (a painless yellowing of the skin and in the whites of the eyes)
- New development of diabetes
- Dark yellow urine
- Light-colored stool and general itchiness

Internal organs labeled: Liver, Pancreas, Gall bladder.

To learn more, please visit: noxopharm.com

Investor, Corporate & Media enquiries: Julian Elliott, E: julian.elliott@noxopharm.com	Company Secretary: David Franks E: David.Franks@automicgroup.com.au
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Press Release

Valo Therapeutics Announces Acquisition of Bruker Corporation's Latest Mass Spectrometer Platform for Tumor Antigen Identification with ValoTx's PeptiCHIP Technology



Helsinki, Finland, 10 Oct 2023 – Valo Therapeutics Oy (ValoTx), the developer of novel, adaptable immunotherapies for cancer, announces it is the first biotech company in Europe to install and use the Bruker Corporation's new timsTOF Ultra mass spectrometer and liquid chromatography platform, which provides

transformative speed and sensitivity for antigen identification in connection with ValoTx's PeptiCHIP technology.

Tumor neoantigens are expressed uniquely by cancer cells and their presence can trigger an efficient immune response against the tumor. Currently the methods

available to identify these antigens have significant limitations by being long, complicated and resource demanding. Using the timsTOF Ultra in conjunction with ValoTx's innovative microfluidic [PeptiCHIP](#) immunopurification device and prioritization algorithm increases the chance of success of neoantigen identification and allows their detection from ultra-low sample amounts, such as tumor tissue biopsies.

Bruker's timsTOF Ultra platform, launched in June 2023, employs trapped ion mobility spectrometry in combination with quadrupole time-of-flight technology and other performance improvements to offer unparalleled sensitivity. It has been specifically designed for the needs of immunopeptidomics and unbiased single-cell proteomics, where the ability to detect low-abundance peptides is crucial.

Dr Otto Kari, VP & Head of ValoTx's Antigen Business Unit, and EIC projects lead, said, "This amazing piece of top-of-the line kit from Bruker, which has now been running in our R&D laboratory since August, allows us to identify thousands of antigens from each PeptiCHIP processed tiny tumor sample with unparalleled speed, sensitivity, and robustness. The timsTOF Ultra will be instrumental in the further development and maturation of our PeptiCHIP microfluidic chip technology, supported by the [EIC Transition PeptiCHIP grant](#). We will also be exploiting its single-cell analysis capabilities to push the boundaries of research through our collaborations with leading researchers at the University of Helsinki and elsewhere."

Paul Higham, CEO of ValoTx, commented, "As one of Bruker's strategic collaborators in the field of immunopeptidomics, we're delighted to be the first biotech company in Europe to receive this top-of-the-line mass spectrometer, the timsTOF Ultra, which will be no doubt become a cornerstone in our work towards developing personalized immunotherapies in combination with PeptiCHIP and our lead delivery platform, PeptiCRAd. As a spin-out of the University of Helsinki, we're also delighted to support high-level research by installing the instrument in the state-of-the-art mass spectrometry laboratory at the Faculty of Pharmacy."

Prof. Jari Yli-Kauhaluoma, Dean of the University of

Helsinki's Faculty of Pharmacy, said, "Our Faculty has a rich heritage of top-level research and innovation in pharmaceutical sciences, where access to the latest transformational technologies can make a fundamental difference to global human health. We are delighted that, through research collaborations with ValoTx, we can gain access to Bruker's timsTOF Ultra mass spectrometer. Who knows what breakthroughs we will be able to achieve using this impressive instrument."

For more details of the Bruker Corporation's timsTOF Ultra platform, see the company's 6 June 2023 press release, [here](#).

About ValoTx

Valo Therapeutics Oy (Helsinki) is an immunotherapy company developing antigen-coated oncolytic viruses as therapeutic vaccines against cancer. The ValoTx lead platform, PeptiCRAd (Peptide-coated Conditionally Replicating Adenovirus), was developed out of the laboratory of Professor Vincenzo Cerullo at the University of Helsinki. It turns oncolytic adenoviruses into powerful activators of systemic anti-tumor cytotoxic T-cell immunity without the need to generate and manufacture multiple genetically modified viruses. PeptiCRAd-1 is the company's lead product made up of its virus VALO-D102 coated with MAGE-A3 and NY-ESO-1 peptides. The company is also developing other neoantigen strategies.

Watch our [film explaining the PeptiCRAd technology](#). For more information see our [website](#) and follow us on [LinkedIn](#).

Contact:

Valo Therapeutics Oy

Matthew Vaughan

Email: info@valotx.com



From other sources

The Lancet was made for political activism- For 200 years, it has thrived on melodrama and scandal



Conceived by a fiery Victorian physician and rights campaigner named Thomas Wakley, The Lancet came into the world in a fit of protest. Born in 1795 in Devonshire to a family of yeoman farmers with 11 children, Wakley had in his early twenties married the daughter of a wealthy business-

man and hospital governor who set him up with a London medical practice. Ensnared in a 15-room house at 5 Argyll Street, Wakley had every reason to believe his success imminent until one evening in 1820 when an unexpected knock on his door was followed by a brutal assault. The assailants

believed (probably baselessly) that Wakley had played a role in the execution of members of the Cato Street Conspiracy, a radical plot to murder the entire cabinet and the prime minister. Wakley survived, but his house and practice were burned to the ground.

Part of the founding myth of The Lancet was that it was born from Wakley's outrage and desperation. His insurance company refused to cover damages from the fire, leading to Wakley's first confrontation with institutional injustice. He sued — and won. His practice had been ruined but a new career as a journalist rose from its ashes. The episode thrust Wakley's name into the limelight and, according to a review of his 500-page 1897 biography, earned him "a reputation as a man who would fight strenuously against an injustice".

With The Lancet, Wakley set out to do something different. While the existing journals were the elite products of an elitist medical system, The Lancet was "founded by a marginal medical man with no reputation and a left-of-centre agenda [within] a conservative profession", according to a 1998 history published in (none other than) The Lancet. But The Lancet was far more than an ideological and class reaction to medical orthodoxy. It was a stylistic mould-breaking experiment driven by a commitment to "entertain, instruct, and reform". Its early editions featured chess problems, theatre reviews, and even gossip. "Our Columns will not be restricted to Medical Intelligence, but on the contrary, we shall be indefatigable in our exertions to render 'THE LANCET' a complete Chronicle of current Literature," Wakley wrote in the preface to the journal's inaugural issue.

The literary elements were quickly dropped but a more potent approach was taken up, one that construed medicine itself as an inherently — and even primarily — political endeavour. "It is widely recognised that, from its foundation in 1823, The Lancet functioned as the principal mouthpiece for the disadvantaged medical classes," historian of medicine Michael Brown wrote in a 2014 academic article. "It is likewise recognised that, as its editor, Thomas Wakley occupied a uniquely powerful position from which to shape the radical medical political agenda."

For Wakley, medicine was the arena of a Manichean struggle between good and evil. This played out in the pages of The Lancet as a grand melodrama, with Wak-

ley's pen supplying a slashing lexicon entirely out of character for a journal at that time. It was a rhetoric of "monsters, spies, and villains, of fetid dungeons and the chains of bondage", the forces of darkness and evil embodied by the British medical establishment — in particular, surgery — that preyed on the snowy innocence of its eternal victims, the poor and disadvantaged.

Though it was draped in the language of melodrama, Wakley had in hand a remarkably effective formula for success. His target was a corrupt system, but abstractions rarely make for good targets. Wakley, ever the effective polemicist, understood this. He directed his most ferocious attacks on individuals. In the most notorious case, The Lancet covered a lithotomy (the removal of a kidney stone) from a patient by a surgeon who was the untalented nephew of a luminary figure in British medicine. The surgery was a debacle. The procedure (inserting forceps into the male patient's urethra to remove the stone — with no anaesthesia) should have taken 10 minutes. It took an hour. The patient, who begged the surgeon to stop, died shortly after.

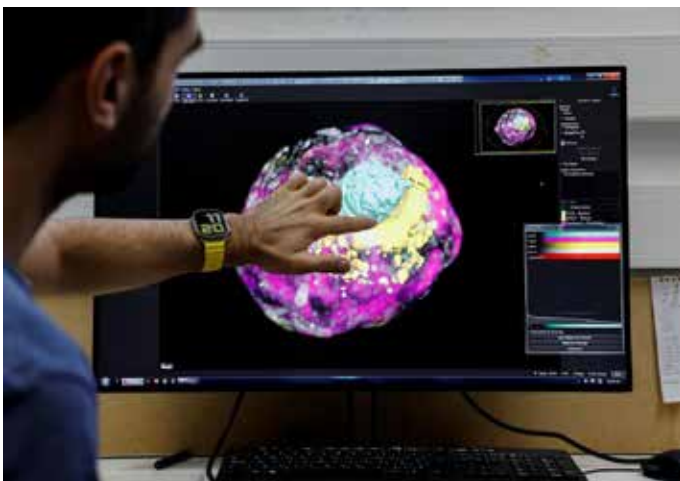
One of the many remarkable things about The Lancet is that it has managed to poignantly maintain its character for two centuries. In the past three years, the journal has again and again found itself at the centre of the most heated Covid controversies and scandals. The most prominent began in the first week of June 2020, less than three months after the WHO declared a pandemic, when the journal was forced to retract a paper on hydroxychloroquine — the anti-malarial drug promoted by Trump as a Covid cure — because it was based on fabricated data.

The story was originally written by Ashley Rindsberg and published by UnHerd.

Read full story here: <https://unherd.com/2023/10/the-lancet-was-made-for-political-activism/>

Featured News

Scientists create human embryo in lab without eggs, sperm



Sept 18, 2023

In a scientific first, researchers at Israel's Weizmann Institute of Science have successfully created synthetic models of 14-day-old human embryos derived entirely from stem cells grown in a lab.

The breakthrough, reported in the journal *Nature*, provides an unprecedented glimpse into the mysterious earliest stages of human development and could open up new avenues of research into infertility, birth defects, and organ growth. Led by molecular biologist Professor Jacob Hanna, the Weizmann team started with two types of stem cells - those reprogrammed from adult skin cells and others derived from established lab-grown stem cell lines.

Using a specialised technique developed by Hanna in 2013, they reverted the cells to an earlier, more flexible “naive” state resembling a 7-day-old embryo ready for implanta-

tion. The naive stem cells were separated into three groups - embryo, yolk sac and placenta - and treated with chemicals to nudge them towards their respective fates. When combined in optimized conditions, around 1% self-organized into sphere-shaped synthetic embryos exhibiting the complex architecture of a 14-day-old human embryo.

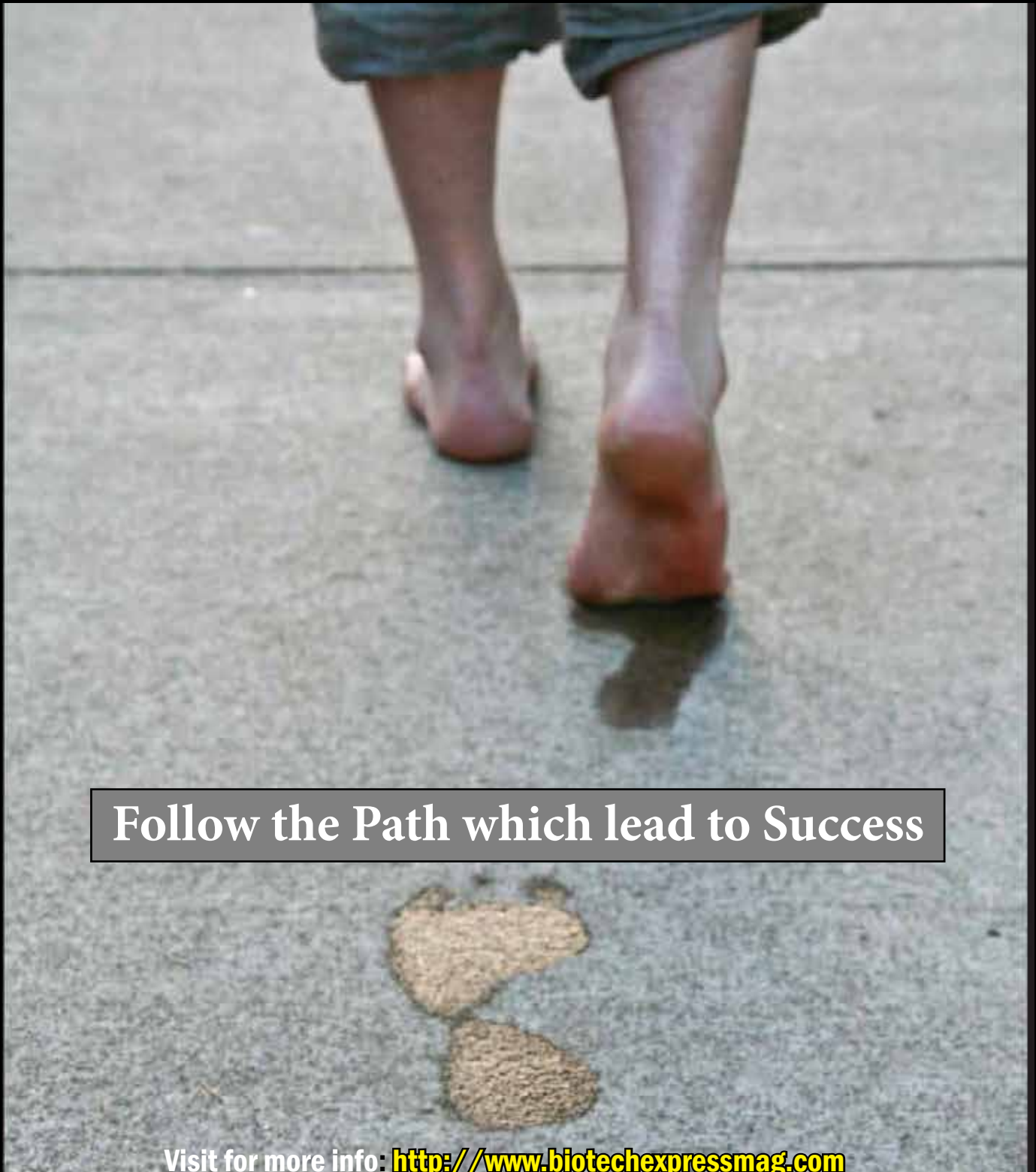
Crucially, these synthetic models contained structures previous stem cell-derived aggregates lacked, including the placenta, yolk sac, chorionic sac and hormone-producing cells. Under the microscope, their internal organization matched human embryo diagrams, convincing the researchers their 14-day milestone had been authentically reached. According to Hanna, the first month marks a critical yet little understood period when the implanted cell clump becomes a structured embryo containing every organ. “Our stem cell-derived model offers an ethical route to study this ‘black box’ phase by closely mimicking natural development.”

Already, his team has gleaned new insights into early pregnancy loss by observing developmental abnormalities when embryos were improperly enveloped. Further research using the accurate models could uncover causes of infertility and birth defects, aid drug safety tests, and boost efforts to grow transplantable tissues and organs.

By ethically avoiding the use of fertilized eggs, Hanna's synthetic embryos enable human development to be scientifically investigated beyond the 14-day legal limit. “This breakthrough opens up new possibilities,” he said. “Our models will help reveal the complex forces driving early embryonic growth.”

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Science publishers settle lawsuits with ResearchGate



September 28, 2023

The American Chemical Society and Elsevier have reached a legal settlement with the academic social networking site ResearchGate.

The two scientific publishers had taken ResearchGate to court in Germany, where the site is run from, in 2017, alleging copyright infringement on a mass scale. In 2018, both publishers escalated their legal fight by filing a second lawsuit against ResearchGate, this time in the US.

Specifically, ACS and Elsevier argued that ResearchGate was host-

ing papers published by their scientific journals on its site in violation of copyright law. ACS also publishes C&EN. ResearchGate states on its site that researchers are responsible for checking if they have the necessary rights to upload their papers or not.

In 2022, a Munich court ruled that ResearchGate is responsible for any content on its platform that infringes copyright. But the court dismissed the damages claimed by ACS and Elsevier, noting that the publishers weren't able to prove that they had acquired the licensing rights from all the co-authors of the manuscripts in question.

ResearchGate was founded in 2008 and boasts millions of users, most of whom are academics who use the site to share their papers. Some of those papers are published in peer-reviewed journals that restrict sharing in some settings. The site's early financial backers include Bill Gates, Goldman Sachs, and the Wellcome Trust.

Now, both lawsuits have been resolved, and a confidential legal settlement has been reached between the publishers and ResearchGate.

ICMR's project on medical supplies through drones set to start soon



October 10, 2023

India's leading healthcare drone logistics startup TSAW Drones, has announced that it has received a Service Order from the Indian Council of Medical Research (ICMR).

ICMR's ambitious project, spanning three locations – Telangana, Karnataka, and Himachal Pradesh – will encompass six months of regular deliveries to support healthcare facilities in Yaddari district (Telangana), Manipal district

(Karnataka), and Lahul (Himachal Pradesh). These deliveries will connect several locations, including distribution centers and primary health centers (PHCs), facilitating the transportation of vital medical supplies, TB samples, tissue samples, diagnostic samples, and more.

One of the most notable aspects of this initiative is to connect some PHCs situated at the world's highest peaks, above 12,000 feet. This presents a unique challenge that TSAW Drones is eager to tackle.

Looking forward, both parties have their sights set on a Pan India expansion, connecting more Distribution Centers with Primary Health Centers, and bringing cutting-edge healthcare logistics to even more communities across the nation. The entire project will be conducted under the rigorous oversight of ICMR, ensuring the highest standards of safety and effectiveness. Notably, all deliveries will be executed by TSAW's logistics arm.

ChatGPT and other AI tools could disrupt scientific publishing?



10 October 2023

Science publishers and others have identified a range of concerns about the potential impacts of generative AI. The accessibility of generative AI tools could make it easier to whip up poor-quality papers and, at worst, compromise research integrity, says Daniel Hook, chief executive of Digital Science, a research-analytics firm in London.

Many editors are concerned that generative AI could be used to more easily produce fake but convincing articles. Companies that create and sell manuscripts or authorship positions to researchers who want to boost their publishing output, known as paper mills, could stand to profit. A spokesper-

son for Science told Nature that LLMs such as ChatGPT could exacerbate the paper-mill problem.

Some researchers, however, argue that LLMs are too ethically murky to include in the scientific publishing process. A main concern lies in the way LLMs work: by trawling Internet content without concern for bias, consent or copyright, says Iris van Rooij, a cognitive scientist at Radboud University in Nijmegen, the Netherlands. She adds that generative AI is “automated plagiarism by design”, because users have no idea where such tools source their information from. If researchers were more aware of this problem, they wouldn’t want to use generative AI tools, she argues.

Some news organizations have blocked ChatGPT’s bot from trawling their sites, and media reports suggest that some firms are contemplating lawsuits. Although scientific publishers haven’t gone that far in public, Wiley told Nature that it was “closely monitoring industry reports and litigation claiming that generative AI models are harvesting protected material for training purposes while disregarding any existing restrictions on that information”. The publisher also noted that it had called for greater regulatory oversight, including transparency and audit obligations for providers of LLMs.

COVID-19 Vaccine Developers Win Nobel Prize



The Nobel Prize 2023 in Physiology or Medicine was awarded to Katalin Karikó and Drew Weissman for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19.

The top honour was given by the Nobel Assembly at Karolinska Institute on October 2 as the prestigious ceremony kicks in.

The discoveries by the two Nobel Laureates were critical “for developing effective mRNA vaccines against COVID-19 during the pandemic that began in early 2020,” a statement released on the official website stated.

In vitro produced mRNA is seen

by dendritic cells as a foreign material, which causes them to become activated and release inflammatory signalling molecules, as discovered by Karikó and Weissman. Karikó and Weissman came to the conclusion that specific characteristics were required to separate the various mRNA types.

Karikó and Weissman demonstrated in research presented in 2008 and 2010 that the administration of mRNA produced with base changes significantly boosted protein synthesis compared to unmodified mRNA, it added.

The Nobel Prize awards, first handed out in 1901, were created by Swedish inventor and philanthro-

pist Alfred Nobel in his 1895 will to celebrate those who have “conferred the greatest benefit on mankind.”

The award in Physiology or Medicine is given for a significant discovery in either biology or medicine. The Nobel Prize is given for discoveries that have profoundly benefited humanity and altered the course of science; lifetime achievements or positions of scientific leadership are not eligible.



Latest Research

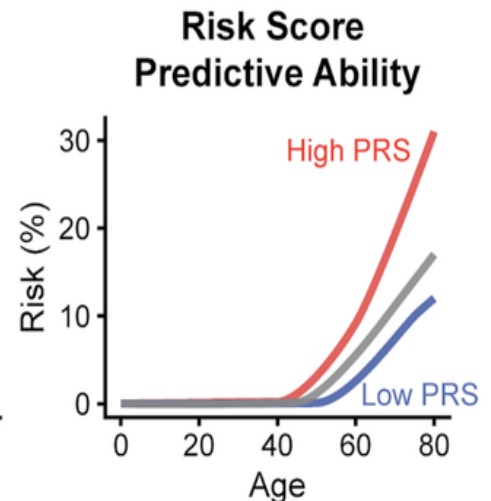
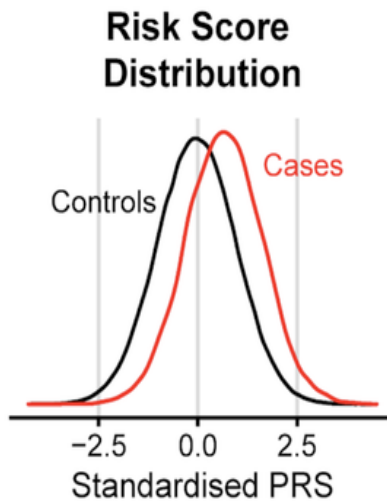
Genetic risk scores not useful in predicting disease

October 17, 2023

A new study looked at 926 polygenic risk scores for 310 diseases. It found that, on average, only 11% of individuals who develop disease are identified, while at the same time 5% of people who do not develop the disease test positive. Unaffected people usually outnumber those affected which results in far more false than true positive predictions.

Polygenic risk scores, which estimate a person's disease risk based on thousands or millions of common genetic variants, perform poorly in screening and prediction of common diseases such as heart disease, according to a new study led by UCL (University College London) researchers.

It has been claimed that polygenic risk scores will transform the prediction and prevention of common diseases. Companies have already been established that sell polygenic risk score testing services. Polygenic risk score testing is also one of the aims of the nationwide Our



Future Health project.

The new study, published in *BMJ Medicine*, looked at 926 polygenic risk scores for 310 diseases. It found that, on average, only 11% of individuals who develop disease are identified, while at the same time 5% of people who do not develop the disease test positive. Unaffected people usually outnumber those affected which results in far more false than true positive predictions.

Lead author Professor Aroon Hingorani (UCL Institute of Cardiovascular Science) said: "Strong claims have been made about the potential of polygenic risk scores in medicine, but our study shows that this is not justified.

"We found that, when held to the same standards as employed for other tests in medicine, polygenic risk scores performed poorly for prediction and screening across a range of common diseases."

For the new study, researchers looked at data available in an open-access database, the Polygenic Score Catalog, to determine what the detection rate and false positive rate of the scores would be if used in screening.

For breast cancer and coronary artery disease, the risk scores identified only 10% and 12% of eventual cases respectively, using a cut-off that resulted in 5% of unaffected individuals testing positive.

The researchers also investigated

how polygenic risk scores would perform if used alongside conventional screening methods.

They found that, if used alongside conventional risk factors, several thousand people would need to have a polygenic risk score done to guide statin prescriptions to prevent one additional heart attack or stroke. The researchers noted that using age alone as a guide to statin prescription would be simpler and more effective at preventing heart attacks and strokes without the need for genetic testing.

They also found that adding polygenic risk scores as first stage screening to determine who should be prioritised for mammography would miss most women who later develop breast cancer and generate many false positives, adding to the burden on healthcare systems.

Co-author Professor Sir Nicholas Wald (UCL Institute of Health Informatics) said: “It has been sug-

gested that polygenic risk scores could be introduced early on to help prevent breast cancer and heart disease but, in the examples we looked at, we found that the scores contributed little, if any, health benefit while adding cost and complexity.”

Bioluminescent Petunia to Light Gardens and Homes at Night

September 27, 2023

Researchers and engineers from an Idaho-based startup biotech company, Light Bio, successfully engineered petunia, a common ornamental plant, to give a bright green color during nighttime. Light Bio plans to start shipping the glow-in-the-dark genetically modified

plants in 2024 after receiving permission from the U.S. Department of Agriculture earlier this month.

Since its founding in 2019, the company has utilized genetic engineering techniques to incorporate DNA from a type of bioluminescent mushroom called *Neonothopanus nambi* into plants. *N. nambi* appears in a usual brown-colored mushroom during the day. However, at night, *N. nambi* produces bioluminescence as a result of the reaction of oxygen and a substance called luciferin, a compound responsible for the production of light energy in *N. nambi*.

According to Karen Sarkisyan, a synthetic biologist at Imperial College London and one of the engineers behind the petunias, the goal is to make a bioluminescent plant that creates an Avatar-movie-style garden at night. Aside from its decorative and aesthetic functions, these light-emitting plants also have the potential to light home interiors without electricity.



CRISPR Silkworms Produce Better Silk Fibers

September 29 2023

Researchers from China used CRISPR technology on silkworms to produce tough and strong spider silk. The resulting fiber is considered better compared to other



commercial synthetic fibers.

Commercial synthetic fibers usually have a trade-off between toughness and strength so researchers must create materials that can combine strength with fiber toughness. As a solution to this problem, researchers from Southwest University in Chongqing and Donghua University in Shanghai used CRISPR on silkworms in order for them to spin spider silk.

The studies showed that the fiber from the spider silk has high tensile strength, which surpassed the majority of available fibers like nylon. It was also determined to be beyond six times tougher than Kevlar. The results demonstrate that spider silk can be used to create effective substitutes for commercially available fibers.

GM Bacteria to Fight Ocean Pollution by Breaking Down Plastics in Saltwater

September 20, 2023

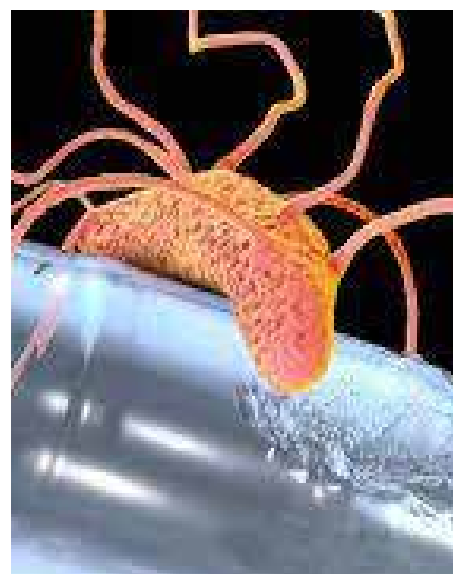
Researchers from North Carolina State University have successfully engineered a marine microorganism that can break down polyethylene terephthalate (PET), a highly recyclable plastic that is a major contributor to plastic pollution in the ocean.

The researchers worked with two

species of bacterium, *Vibrio natriegens* and *Ideonella sakaiensis* in conducting the experiment. A sequence of DNA from *I. sakaiensis* that is responsible for the production of enzymes that can break down PET was taken and incorporated into a plasmid, genetic sequences that can replicate in a cell.

The plasmid containing the *I. sakaiensis* genes is then introduced into the *V. natriegens* bacteria, a bacterium that thrives and reproduces quickly in saltwater. Results of the study show that the genetically engineered *V. natriegens* was able to break down PET in a saltwater setting.

Nathan Crook, the corresponding author, says that this is the first time that *V. natriegens* was able to express foreign enzymes on its cell surface. Similarly, Tianyu Li, the first author of the paper, says that this is also the first genetically engineered organism to break down PET microplastics in saltwater. With the promising findings of the



study, genetic engineering has the potential to mitigate the issue of plastic accumulation in saltwater environments.

Most accurate test to date developed to measure biological aging



October 13, 2023

A team of European researchers has developed a new test that can accurately measure biological aging in a clinical setting. The discovery was made while studying patients for the aging effects of chronic kidney disease.

The new test is an epigenetic clock -- a type of biochemical assessment that looks at DNA to understand how well the body is aging in contrast to its chronological age -- and is the first of these cutting-edge tests to be proven to perform accurately in a clinical setting, in both healthy and unhealthy tissue.

The work was led by a partnership between the University of Glasgow and the Karolinska Institutet, Stockholm, and is published in the *Journal of Internal Medicine* as part of a study into the aging effects of chronic kidney disease and its associated treatments.

The research team studied more

than 400 patients with chronic kidney disease in Sweden alongside around 100 matched population controls, to better understand the impact on ageing of the disease, including during dialysis treatment and after kidney transplant. To do this, researchers used a range of tests including blood biomarkers, skin autofluorescence and epigenetic clocks. The team used the clocks to measure the change in biological age of around 47 patients one year after kidney transplantation, or one year after the start of their dialysis treatment, as well as how the healthy tissue in 48 controls aged by comparison.

The results showed that for patients with chronic kidney disease, their biological clock is ticking faster than the average person's. This continues to be the case even after dialysis treatment. Indeed, patients' biological clocks were only shown to slow down following a kidney transplant.

Professor Paul Shiels, lead author of the study for the University of Glasgow, said: "This study is the first time in a clinical setting that we can accurately report on the extent of biological as opposed to chronological ageing in chronic kidney disease patients. Our findings, using the new Glasgow-Karolinska Clock -- show that not only are these patients aging faster than people in the general population, their accelerated aging only slows down once they have had a transplant. Treatment with dialysis does not appear to impact this process.

"This is also the first clinical test of epigenetic clocks, and the discovery that most are inaccurate when compared with medical evidence has led us to develop a new more accurate test which can accurately measure methylation tags on DNA of both healthy and unhealthy tissue. We have proven it is accurate to the high standards of a clinical setting.

“Methylation tagging of DNA is impacted by what we eat and also our gut microbiome. As a result, this new clock has real potential to be able to evaluate lifestyle interventions, including diet, that could benefit the public and help to address issues such as health inequalities.”

Peter Stenvinkel, Professor at Karolinska Institutet, said: “I found the new tool to estimate effects of interventions on biological age of much interest. The tool could be used to study treatment strategies in patients with end-stage kidney disease -- a group subjected to premature aging.”



Scientists Develop Gene-edited Chickens to Limit Spread of Bird Flu

October 18, 2023

Scientists from the University of Edinburgh, Imperial College London, and the Pirbright Institute used gene editing techniques to identify and change parts of chicken DNA that could limit the spread of the bird flu virus in the animals.

Using gene editing techniques, the team of scientists bred the chickens and altered the section of DNA

responsible for producing the protein ANP32A, a molecule that flu viruses hijack during an infection to help replicate themselves. When the ANP32A gene-edited chickens were exposed to a standard dose of the H9N2-UDL strain of avian influenza virus, commonly known as bird flu, 9 out of 10 birds remained uninfected, and there was no spread to other chickens.

To further test their resilience, the scientists exposed the gene-edited birds to an artificially high dose of avian influenza virus. When exposed to the high dose, 5 out of 10 birds became infected. However, the gene edit provided some protection, as the amount of virus in the infected gene-edited chickens was much lower than the lev-

el typically seen during infection in non-gene-edited chickens. The gene edit also helped to limit the spread of the virus to just one of four non-gene-edited chickens placed in the same incubator. There was no transmission to gene-edited birds.

The findings are an encouraging step forward, but experts highlight that further gene edits would be needed to produce a chicken population that cannot be infected by bird flu, one of the world's most costly animal diseases.





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BRICS STI Framework Programme 6th coordinated call for BRICS multilateral projects 2023 “Climate Change Adaptation and Mitigation”

Call is open until November 1, 2023. 15:00 Moscow Time (UTC+3)

I. General Description

I-1. Joint Funding of Multilateral Research Cooperation

The BRICS STI Framework Programme aims to support excellent research on priority areas which can best be addressed by a multinational approach. The initiative should facilitate cooperation among the researchers and institutions in the consortia which consist of partners from at least three of the BRICS countries.

As part of the initiative the following research funding organizations from the BRICS countries have agreed to jointly establish a new call for multilateral research projects:

Brazil:

National Council for Scientific and Technological Development (CNPq)

Russia:

Ministry of Science and Higher Education (MSHE)

India:

Department of Biotechnology (DBT)

Department of Science and Technology (DST)

China:

Ministry of Science and Technology (MOST)

National Natural Science Foundation of China (NSFC)

South Africa:

National Research Foundation (NRF)

Water Research Commission (WRC)

Biotech Notice



February 1 - 3, 2024

Shiv Nadar Institution of Eminence, Delhi NCR

Theme

ADVANCES IN GENOMICS FROM AI-ML TO TARGETED THERAPIES

Conference Spectrum

- Faculty, Post Doc & Students
- Industrial R&D Professionals
- Biotech Start-up
- MSME and Entrepreneurs
- Healthcare Professionals
- Pharma, Bio-pharma, Vaccines
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NIAB, an autonomous institute under the aegis of the Department of Biotechnology, Ministry of Science & Technology, Government of India, is aimed to harness novel and emerging biotechnologies and create knowledge in the cutting edge areas for improving animal health and productivity. The Institute's research focus is on animal health and production with an special emphasis on Reproductive Biotechnology, infectious biology, Genomics, transgenesis, stem cell biology, nutrition, nanobiology and bioinformatics. The Institute aims at translational research leading to genetic enhancement of Indian Livestock species and basic research towards development of novel vaccines, diagnostics various organoids and improved therapeutic molecules for farm animals.

NIAB invites applications from suitably qualified, dynamic, result oriented and dedicated Indian citizens for filling up the following positions:

Scientist-G – Two posts (1-UR, 1-OBC)	
Pay Level	14 as per 7 th CPC
Method of Recruitment	Direct Recruitment / Deputation (ISTC) / Absorption
Age limit	50 Years for Direct Recruitment 58 Years for Deputation (ISTC) / Absorption
Recruitment on Deputation	Scientists or Technologists working in the Central or State Governments / Universities / recognized Research Institutions / Semi Government, Statutory or Autonomous Organizations in India or abroad (i) holding analogous posts on regular basis in the parent cadre or Department; or (ii) with two year's of service in the grade rendered after appointment thereto on regular basis in Level 13A or equivalent / with three year's experience in Level 13 or equivalent; and (b) Possessing the qualifications prescribed for direct recruits, as given below. The Deputation period will be as per rules of Govt of India.
Essential Qualification	Ph.D in Veterinary / Animal Sciences/Modern Biology/Life Sciences equivalent from a recognised university with a strong track record of research and academic accomplishment in terms of publications and patents and attracting generous research funding. (ii) Evidence of leadership with 10 years of R&D experience in any one of the NIAB Thrust areas.



REGIONAL CENTRE FOR BIOTECHNOLOGY
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MINISTRY OF SCIENCE & TECHNOLOGY, GOVERNMENT OF INDIA

DBT - RESEARCH ASSOCIATESHIP (DBT- RA) PROGRAMME



AWARD OF DBT- RESEARCH ASSOCIATESHIP (DBT-RA) IN BIOTECHNOLOGY & LIFE SCIENCES FOR 2023-24/ Call I

Applications are invited from Indian citizens for the award of “DBT-Research Associateship” for pursuing research in frontier areas of Biotechnology and Life Sciences. The Associateship is tenable in Premier Research Institutions/Universities including non-profit R&D Institutions within India. The Associateships are awarded under the “DBT-Research Associateship” programme supported by the Department of Biotechnology, Ministry of Science & Technology, Government of India.

AIM OF FELLOWSHIP

The objective of DBT-Research Associateship (DBT-RA) Programme is to train and nurture young researchers, scientists and generate a critical mass of trained manpower in modern areas of biology and biotechnology and build a robust postdoctoral base for the growth of Biotechnology sectors in the country.

ELIGIBILITY CRITERIA

Academic Qualification: The applicants should hold a Ph.D. degree in Science, Engineering or M.D./ M.S. degree in any area of medicine with research interests in Biotechnology and Life Sciences and a good academic record. The applicants who have already submitted the Ph.D./ M.D./ M.S. thesis are also eligible to apply. However, such applicants, if selected, will be offered lower fellowship amount till they qualify the eligible degree.

Age Limit: The upper age limit is 40 years for male candidates and 45 years in the case of female candidates as on the last date of application.

Employment: The applicants who are employed at the time of application (in any form i.e. permanent, contractual etc.) are eligible to apply. However, they have to relinquish their employment for accepting the fellowship.

TENURE OF FELLOWSHIP

The Associateship is a purely temporary full-time assignment and is tenable for a period of 02 years with annual renewal based on review of progress of research. In exceptional cases, fellowship may be extended up to 04 years depending upon the progress of research.

GENERAL GUIDELINES

- DBT-RA fellowship can be availed only ONCE by a candidate in his/her career.
- The fellowship is tenable only in India in any recognized academic institutions, national laboratories and other recognized R & D institutions. The host institution must provide administrative and infrastructural support.
- Fellows are not allowed to work with their PhD guides/co-guides.
- The fellowships cannot be availed at the same institution where the candidates have earned their Ph.D./M.D./M.S. degree.
- A mentor cannot have more than 2 DBT-RA fellows at a time.
- A mentor must hold a regular academic/research position in a recognized institution in India, and should hold PhD/MD/MS degree in science, engineering or medicine.
- Superannuated faculty (e.g., Honorary Professors, Emeritus Professors/Scientists, and DBT Distinguished Professors) could also mentor as long as they can demonstrate that resources and labs are available to them.
- Applicants from North East Region (permanent residence located in the NER) can work in any university/institution in the country.
- Research grant can be used for minor equipment, consumables, contingencies and domestic travel under the programme.



IBBAC

30th October to 01st November, 2023

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Venue

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