

BIOTECH EXPRESS

News in Focus:

- He Jiankui faces three years in prison for CRISPR babies
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- Four Major Biopharma Scandals in 2019
- NATHEALTH suggests a zero-rating GST for healthcare
- Nigeria Commercializes Pod Borer Resistant Cowpea, its First GM Food Crop
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A report on the XVI Convention of BRSI - International Conference on New Horizons in Biotechnology & Winners of BRSI Annual Awards 2018 and Fellows 2019 & BRSI-NHBT Best Paper Awards Winners & BRSI-NHBT Best Poster Award Winners



Advertorial:

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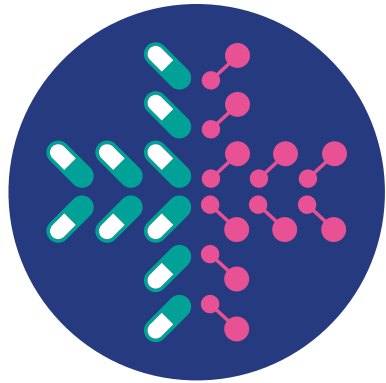
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BioAsia 2020

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17TH – 19TH FEBRUARY 2020

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Globally, the rise of more informed healthcare consumers & technologies continues to blur the traditional boundaries between therapeutics, consumer devices, medical and information technology. It is because of this that there is pressure on the Lifesciences companies to change their business model. BioAsia 2020 explores the capabilities that Lifesciences companies should urgently address how they should be preparing themselves for the upcoming future.

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DIGITAL HEALTH

Exploring opportunities through the amalgamation of Technology and Healthcare



MEDTECH

Discussing the impact of new technologies like AI/ML reshaping the medtech landscape



GENERIC INDUSTRY; MANUFACTURING, SUPPLY CHAIN AND QUALITY

Building further capabilities and reinforcing global leadership in the Generics industry



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Advertorial

Yashraj Biotechnology Limited, Mumbai sponsoring two IFCC Distinguished Awards in the World Lab Congress, Seoul, South Korea, 2020

IFCC Awards Categories

- 1. IFCC Distinguished Clinical Chemist Award - sponsored by Yashraj Biotechnology Ltd.**
- 2. IFCC-Henry Wishinsky Award for Distinguished International Service since 1990 (IFCC Distinguished International Services Award 1981-1987) - sponsored by Siemens Healthineers.**
- 3. IFCC Award for Distinguished Contributions in Education - sponsored by Abbott Laboratories.**
- 4. IFCC Award for Significant Contributions in Molecular Diagnostics - sponsored by Abbott Laboratories.**
- 5. IFCC Distinguished Award for Laboratory Medicine and Patient Care - sponsored by Sekisui Diagnostics.**
- 6. IFCC-Robert Shaffer Award for Outstanding Achievements in the Development of Standards for Use in Laboratory Medicine - sponsored by NIST CLSI.**
- 7. IFCC Distinguished Award for Contributions to the Cardiovascular Diagnostics - sponsored by HyTest.**
- 8. IFCC-Gérard Siest Young Scientist Award for Distinguished Contributions in Pharmacogenetics - sponsored by Biologie Prospective.**
- 9. IFCC Distinguished Women Scientist Award for Contribution to In Vitro Diagnostics - sponsored by Yashraj Biotechnology Ltd.**
- 10. IFCC Young Investigator Award - sponsored by IFCC.**

The International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) confers distinguished awards to scientists and clinicians working in clinical chemistry, laboratory medicine and related disciplines. These triennial awards are the highest honor conferred by the Federation and bestowed to scientists and researchers for their outstanding achievements. This worldwide recognition is to publicize their exceptional research work and highlight other contributions that have improved healthcare and made advancements in clinical chemistry and laboratory medicine. This year these distinguished awards will be conferred during the World Lab Congress in Seoul, South Korea, 24-28 May 2020. For more details kindly refer to

<https://www.ifcc.org/executive-board-and-council/eb-committees/awards-committe/2020-ifcc-awards-call-for-nominations/>

Several diagnostic giants have sponsored the awards for the IFCC 2020 to be held in South Korea from May 24-28th, 2020. Out of the 10

awards, two distinguished awards are sponsored by Yashraj Biotechnology Limited, Mumbai namely: 'IFCC DISTINGUISHED CLINICAL CHEMIST AWARD' and 'IFCC DISTINGUISHED WOMEN SCIENTIST AWARD FOR CONTRIBUTION TO IN VITRO DIAGNOSTICS'. This initiative of Yashraj Biotechnology will not only honor the recipients for their outstanding work but in addition stimulate and encourage other scientists worldwide to accelerate their efforts in advancing clinical chemistry and laboratory medicine for improved medical and healthcare.

About Yashraj Biotechnology

Yashraj holds a huge reputation as a biotechnology company and a bulk manufacturer and supplier of the diagnostic reagents namely Antigens and Antibodies.

For more details please visit the website www.yashraj.com. For commercial enquiries please write to marketing@yashrajbio.com and for technical enquiries please write to gauri@yashrajbio.com.



Pursuing excellence in
Diagnostics

Partner Event Highlights

A report on the XVI Convention of BRSI- International Conference on New Horizons in Biotechnology

The XVII Convention of the Society was held as International Conference on New Horizons in Biotechnology organized by the CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum during November 20-24, 2019. Drs K Madhavan Nampoothiri, Rajeev K Sukumaran and P Binod were its main organizers.



NHBT-2019, the international conference on New Horizons in Biotechnology was jointly organized by the Biotech Research Society, India (BRSI) and CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum during November 20-24, 2019. This was 16th Annual Convention of the BRSI. The venue for the event was Hotel Residency Tower, Press Road, Trivandrum. The conference was attended by nearly 500 delegates from 33 countries.

NHBT-2019 focused on the recent developments on the frontier areas of Biotechnology and brought together scientists, engineers and other experts from across the world to deliberate on global developments in this area, especially on internationally and nationally relevant areas such as green energy and materials through biotechnology, emerging threats of multidrug resistant drugs and the strategies to combat them, microbial products, genomics and molecular biology, industrial microbiology and biotechnology and environmental biotechnology. The conference had four parallel sessions during 21st - 23rd November where the delegates presented and discussed multiple topics. There were also two mini symposia, one on Biofuels and Biorefineries and the other on Healthcare Biotechnology as part of the conference. Some 267 posters were presented in the different topics on 21st and 22nd November at YMCA hall adjacent to the main venue.



The conference was actively supported and participated by the international professional bodies –Elsevier (UK); CSIR-National Environmental Engineering Research Institute, Nagpur; International Bioprocessing Association: International Forum on Industrial Bioprocesses (IBA-IFIBIOP); International Organization for Biotechnology and Bioengineering (IOBB); Centre for Energy and Environmental Sustainability-India; MACFAST, Thiruvalla, and Khanal Foundation, Nepal. Several academic journals, namely, Bioresource Technology, Bioresource Technology Reports, Industrial Crops and Products, Bioengineered, Amylase, Energy & Environment, Journal of Energy and Environmental Sustainability and Indian Journal of Experimental Biology would bring out special issues based on the presentations made in the conference.

NHBT-2019 was formally opened on 20th November 2019 in which eminent speakers, including Prof TP Singh, Chairman, BRSI; Prof C Larroche, Administrator, IBA-IFIBiop, France; Prof RD Tyagi, INRS, Quebec, Canada; Prof Alok Dhawan, Director, CSIR-IITR, Lucknow; Dr Anjan Ray, Director, CSIR-IIP, Dehradun; Prof Ashok Pandey, Chief Mentor, BRSI & General Chair, NHBT-2019 addressed the audience. This was followed by the BRSI annual awards function in which winners under different categories were honoured for their outstanding contributions in different domains of Biotechnology. Dr Madhavan Nampoothiri welcomed the delegates and thanked all the stakeholders associated with the event for its success. Dr Rajeev Sukumaran gave a glimpse of the technical details of the event. Dr P Binod, COE, BRSI conducted the award ceremony as Master of ceremony.



Scientific sessions started on 21st November morning with lectures from BRSI awards winner. This was followed by three keynote presentations Dr. Alok Dhawan, Director, CSIR-Indian Institute of Toxicology Research on the role of toxicology in environmental research; Dr. Anjan Ray, Director, CSIR-Indian Institute of Petroleum on establishing a

Guest Article

national supply chain of lipids/oil for biofuel applications, and **Prof Roger Ruan from University of Minnesota, USA** on sustainable circular economy technologies development and applications. Subsequently, oral presentations were held in four parallel sessions in which 17 plenary speakers and 121 invited speakers presented their talks.

The conference was unique in offering two workshops, and an Industry- Young Researcher Interactive session. Among the two workshops, one was on scientific writing mentored by Dr. Eldon Rene from Institute of Water Education, Delft, Netherlands and the other on how to do rapid fire presentations by Prof Michel Saur, Institute of Natural Resources and Life Sciences, Vienna, Austria.

The Industry-Young Researcher Interactive Session was attended by leading Biotech companies of the country and their officials/R&D heads would interact with students and young scientists on the Biotechnology R&D Scenario of the country and the opportunities, challenges and employment possibilities in this area. This was moderated by Dr Raghavendra Gaikawaiari, CMD, Hitech Biosciences, Pune and supported by Dr Vivek Agarwal, CMD, CDC India, Jaipur; Dr Vivek Morya, CEO, Aditha Biotech, Lucknow and Dr Ramesh Shettar, Godawari Biorefineries, Bangalore.

The closing session of NHBT-2019 was held on 23rd November 2019 in which awards were conferred by Prof CG Dussap, Charter President, IBA-IFIBiop, Prof RD Tyagi, Vice-President, IBA; Dr R Gaikawaiari, CMD, HTBS, Pune and Dr V Agarwal, CMD, CDC India to winners under different category, including Research Excellence awards sponsored by Khanal Foundation, Nepal and by the Centre for Energy and Environmental Sustainability-India, Lucknow. Also, BRSI awards for best presentation under RFP and posters were conferred. Dr T Bhaskar, General Secretary, BRSI conducted the awards ceremony during this session. Prof Sunil Khare, Vice-chairman of BRSI announced Jaipur as the host city for the 17th BRSI event to be held during November 8-11, 2020. With this, the event came to a close.



Social programs during NHBT-2019 included a cultural program on 20th November evening, a visit to Golf Club, Trivandrum with a musical evening show from Kerala Police band followed by dinner, and a visit to Kovalum beach followed by dinner.

Winners of BRSI Annual Awards 2018 and Fellows 2019

Fellow - Professor Vinay Sharma

Professor Vinay Sharma is currently Dean Research and Director, Amity Institute of Biotechnology, Amity University Rajasthan. He obtained his PhD in 1981 and had post-doctoral stints in Plant Biology in Germany and USA. He has made significant contributions in Plant Biotechnology, including the role of V-ATPase, D1 protein and PSII activity in drought and salt stress in plants and combined wet lab and bioinformatics approaches to identify novel proteins for developing stress tolerant crop plants. Prof Sharma has two patents, eight books and published over 300 scientific papers and reviews. He is a Fellow of National Academy of Sciences (India), Young Scientist Award by ISCA (1981), Distinguished Scientist Award (2013) and HS Srivastava Memorial Award (2016) by the Society for Plant Research.



Fellow - Dr Kishore Kumar Krishnani

Dr Kishore Kumar Krishnani is currently Principal Scientist at the Division of Aquaculture, ICAR-Central Institute of Fisheries Education, Mumbai. He obtained his PhD in 1992 and had post-doctoral fellowships in USA, Australia and Philippines. His main focus of research has been on Environmental Biotechnology. He has six patents and published over 150 papers, book chapters, training manuals and technical bulletins. He has commercialized four technologies and disseminated two aqua-farming technologies.



Dr Krishnani is a Fellow of the National Academy of Agricultural Sciences and has been conferred NAAS-Biennium Recognition award-2017-18, Australian Govt's Endeavour Award in 2012, NAIP-ICAR-fellowship in 2010, TCTP-JICA's fellowship in 2003, DBT's Biotechnology Overseas Associateship-2002, IFF's Young Scientist Award in 2005, and Best Poster and Oral Presentation awards for his contributions in the field of environmental biotechnology.

Fellow - Prof Anushree Malik

Professor Anushree Malik is currently Institute Chair Professor and Head, Centre for Rural Development and Technology at the Indian Institute of Technology, Delhi. She obtained her PhD (Environmental Biotechnology) from IIT Delhi in 2000 and carried out her post-doctoral research at Utsunomiya University, Japan from 2000-2003 under JSPS fellowship. Her research areas include wastewater treatment, bioenergy, algal biofuels, bioremediation, etc. She has five filed patents, two edited books, 18 book chapters and 200 scientific papers with 6000 citations. She received DST-Lockheed Martin India Innovation Growth Program Award for developing unique mycotablets for the decolorization of dye waste water.



Fellow - Dr Anil Kumar Puniya

Dr Anil Kumar Puniya is presently working as Principal Scientist at the ICAR-National Dairy Research Institute, Karnal. He obtained PhD degree in Dairy Microbiology in 1994 from NDRI, Karnal. His major research focus is in the field of animal sciences. He has reported two novel genera of anaerobic fungi (*Oontomyces anksri* & *Buwch-fawromyces eastonii*) and has developed a method for differentiation of genera/species of these fungi using D1/D2

domain of large-subunit r-DNA. He has about 200 publications, including three books. Dr Puniya received distinguished awards and honours, which include AMI Young Scientist Award; Kautilya Gold Medal; Prof JV Bhat Award; DAAD Fellowship, Germany; INSA-Royal Society Fellowship 2007; DBT-CREST Award 2013; Elsevier Award and Best Oral Presentation Award (NPDF).



Fellow - Dr A Gangagni Rao

Dr A Gangagni Rao is currently Chief Scientist in CSIR-Indian Institute of Chemical Technology, Hyderabad. His research interests are in the area of biological waste management. Dr. Rao has extensively worked on high rate biomethanation for the treatment of organic solid waste and developed several processes such as Self Mixed Anaerobic Digester, Anaerobic Gas Lift Reactor and Biofilter, which have been commercialized in India.



Dr Rao is a Fellow, Royal Society of Chemistry, UK; Fellow, AP Academy of Sciences and Fellow, Institution of Engineers (India). He has been bestowed several awards and honours, which include Bharat Ratna Sir M Visvesvaraya award-2019, IChE Hindustan Dorr-Oliver award-2014, IChE ICI Award-2017, BRSI Industrial Medal Award-2015, CSIR-IICT Platinum Jubilee Innovation and Creativity Award Fund-2016 and SKOCH Order-of-Merit Award-2017. He has four patents and fifty publications to his credit.

Fellow - Professor Kamal Kishore Pant

Professor Kamal Kishore Pant is currently Petrotech Chair Professor and Head of the Department of Chemical Engineering at Indian Institute of Technology Delhi. He has worked at the University of Tuskegee, USA; University of Saskatchewan, Canada; Fraunhofer UMSICHT, Germany, and Aston University, UK as visiting Professor. His research contribution involves a wide range of innovative studies covering both theoretical and experimental aspects of biotechnological routes and heterogeneous catalysis for bioenergy and value-added chemicals production. He has published 150 articles, two books and 10 patents with 6800 citations. Prof Pant has been conferred Herdilia Award by Indian Institute of Chemical Engineers in 2018 and Dr SS Deshpande Award in 2013. He has guest edited American Chemical Society Journal Industrial & Engineering Chemistry Research, Springer's Biomass Conversion and Biorefinery.



Overseas Fellow - Dr Harishkumar Madhyastha

Dr. Harishkumar Madhyastha is currently faculty at the Department of Applied Physiology, University of Miyazaki, Japan. He obtained his PhD in 1996 in Applied Bioscience from Sardar Patel University-Gujarat and obtained second PhD in Molecular Medicine from University of Miyazaki, Japan in 2006. His main focus of research has been on nutraceutical functionalized nanomaterials as regenerative medicine. He has three Japan patents and one Indian patent, edited one book and published over 50 papers.



Young Scientist Award - Dr Sunita Varjani

Dr Sunita Varjani is currently Scientific Officer at Gujarat Pollution Control Board, Gandhinagar, Gujarat. She obtained her PhD degree in 2014 and has worked as visiting scientist at EPFL, Lausanne, Switzerland. Her main focus of research has been on Environmental and Industrial Biotechnology. Dr. Varjani has been actively working on exploration and exploitation of indigenous hydrocarbon utilizing/degrading and biosurfactant producing bacterial isolates for their application in bioremediation of petroleum hydrocarbon pollutants and microbial enhanced oil recovery.



She has authored more than 150 publications, including research and review papers, books, book chapters and conference communications. She has won several awards, including Young Scientist Awards from Microbiologist's Society India (2018), Association of Microbiologists of India (2018), International Society for Energy, Environment and Sustainability (2018) and AFRO-ASIAN Congress on Microbes for Human and Environmental Health, New Delhi (2014); Top Reviewer Award - 2017, Bioresource Technology journal and Best Paper Awards in national and international conferences in 2008, 2012, 2013 and 2018.

Women Scientist Award -Dr Aradhana Mishra

Dr Aradhana Mishra is currently works as Principal Scientist at the Division of Microbial Technologies, CSIR-National Botanical Research Institute. Dr. Mishra holds a PhD in Biosciences in 2007 from Rani Durgavati University, Jabalpur, India. Her research focus is on the synthesis of bioinspired nano-materials and plant-microbe interactions during abiotic and biotic stresses. Her major research contribution is in development of bio-formulation for controlling pathogens.

She has been awarded Women Scientist fellowship award by DST, Govt. of India in 2007 and 2011. Dr Mishra has 46 publications, seven book chapters and four patents. She

is also editor in reputed journal Genetics and Molecular Biology Research and PLOS ONE.



Industrial Medal award-Professor Rintu Banerjee

Dr Rintu Banerjee is currently Professor at Agricultural and Food Engineering Department, Indian Institute of Technology, Kharagpur. She was earlier MNRE Chair Professor at IIT Kharagpur. Her areas of interest include Food and Fermentation Technology and Bioenergy. Prof Banerjee has developed a novel eco-friendly enzymatic 2G-ethanol production process with a biorefinery concept where methane and other valuable chemicals production have been established.

She has developed a cost-effective phyco-myco oleaginous biodiesel production process by enzymatic transesterification process.

Prof Banerjee has been bestowed with Rafi Ahmed Kidwai award, Panjabrao Deshmukh Outstanding Women Scientist Award, Louis-Pasteur award, Recognition-award, Women Bioscientist, and Fellows of the Biotech Research Society, India; National Academy of Agricultural Sciences and Association of Microbiologists of India.

She has 11 patents, of which 10 technologies have been transferred to different industries and agricultural stake-holders.



Prof S B Chincholkar Memorial Award - Dr G Baskar

Dr G Baskar is currently Professor at the Department of Biotechnology, St. Joseph's College of Engineering, Chennai. He obtained his PhD in 2011 from Anna University, Chennai. He has visited Swiss Federal Institute of Technology (EFPL), Switzerland as visiting researcher in 2018.



His main focus of research has been on biofuels and bio-energy, therapeutic proteins, and food biotechnology. He has developed a reusable magnetic nanocatalyst for the production of biofuels from non-edible oils and agriculture residues. Dr Baskar has edited three books, 16 book chapters and over 150 research and review papers. He is a Fellow of Institution of Engineers (India) and has been conferred Outstanding Researcher on Renewable Energy Award from Indian Society for Technical Education, New Delhi in 2016 and Young Scientist Award from the International Bioprocessing Association, France in 2017.

Malaviya Memorial Award (Senior Faculty) - Professor Indu Shekhar Thakur

Professor Indu Shekhar Thakur is currently working in the School of Environmental Sciences, Jawaharlal Nehru University, New Delhi. He earlier served in GB Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. His main research interest is in the area of Environmental Sciences, with focus on treatment and management of industrial and hazardous chemicals and industrial wastes, bioremediation, biofuels, bioplastics, etc. Prof Thakur has published more than 210 research papers and chapters in books, two text books and four patents. He was Visiting Scientist/Professor in Germany, Japan, Switzerland, Canada, France, etc.



Malaviya Memorial Award (Young Faculty) - Dr Amit Mishra

Dr Amit Mishra is currently working as Assistant Professor in Indian Institute of Technology, Jodhpur. He obtained PhD degree in Neuroscience from National Brain Research Centre, India. Dr. Mishra has established a new significant concept on selective E3 ubiquitin ligases that can serve as quality control first line of defense ameliorative measures against multifactorial proteostasis failures implicated in neurodegenerative diseases and imperfect aging. He has published 60 papers. Dr. Mishra has won several awards and honours which include Best Ph.D. Thesis award in Biological Sciences from Indian Society of Chemists and Biologists, India; Ramalinganswami Fellowship and Innovative Young Biotechnologist Award from the Department of Biotechnology, India; Fellow of Royal Society of Medicine, UK and Fellow of Royal Society of Biology, UK.



BHU Centennial Award - Dr R B N Prasad

Dr R B N Prasad was Chief Scientist and Head of Centre for Lipid Research, CSIR-Indian Institute of Chemical Technology, Hyderabad. He obtained his PhD from Osmania University and carried out Postdoctoral Research at Koln University, Germany. Dr Prasad has made significant contributions in the area of Lipid Science & Technology, making use of biotechnological options for processing and value addition to oils, fats and allied products.



His contributions have been aimed at modernization of Indian vegetable oil and oleochemical industry leading to national prosperity. He has transferred 18 technologies to more than 60 industries. He has 85 patents, contributed 24 book chapters and published over 275 papers. He is a

Fellow of the Biotech Research Society, India; Royal Society of Chemistry, UK and AP Academy of Sciences and has been conferred several awards, which include Industry Medal Award of BRSI, VASVIK Industrial Research Award for Chemical Sciences, TDB's National Award for Best Commercialized Indigenous Technology, CSIR Technology Award etc.

AU-CBT Excellence Award - Mr Bijoy Biswas

Mr Bijoy Biswas is presently pursuing his doctoral studies as a CSIR-SRF in the Biomass Conversion Area of Materials Resource Efficiency Division, CSIR-Indian Institute of Petroleum, Dehradun. Mr. Bijoy has completed his MSc from IIT Madras. During the doctoral work, Mr. Bijoy has utilized lignocellulosic biomass, lignin, and aquatic biomass to produce high value products using thermo-catalytic processes such as pyrolysis and hydrothermal liquefaction. He has published 17 research papers and five book chapters.



AU-CBT Excellence Award - Mr Satya Narayan Patel

Mr Satya Narayan Patel is presently pursuing his doctoral studies at the Center of Innovative and Applied Bioprocessing, Mohali and registered for PhD degree in Panjab University Chandigarh. In his doctoral work, Mr Patel has identified and characterized novel D-allulose 3-epimerase from the metagenome of a thermal aquatic habitat and D-allulose production by *Bacillus subtilis* whole-cell catalysis. He has been a team member of three technologies transferred by CIAB, Mohali. Mr Patel has won Gandhian Young Technological Innovation award in 2019 and five best poster awards at national and international conference.



AU-CBT Excellence Award - Ms Shikha Dahiya

Ms Shikha Dahiya is presently pursuing her doctoral studies in the area of Environmental Biotechnology at CSIR-Indian Institute of Chemical technology, Hyderabad. Ms Shikha is working on the production of value-added products from biogenic waste majorly short chain and medium chain acids specific to propionic acid and caproic acid. She is a member of the team on a technology transferred by CSIR-IICT on high rate bio-methanation to various clients. She has published seven research papers, five review articles, two book chapters and one web article. Ms. Shikha has qualified CSIR-SRF fellowship and is recipient of DADD fellowship.



BRSI-NHBT BEST PAPER AWARDS WINNERS

BRSI-SHREE LOK BAHADUR KHANAL MEMORIAL EDUCATIONAL FOUNDATION, NEPAL

RESEARCH EXCELLENCE AWARD WINNERS

- Rashmi Rathour, Jawaharlal Nehru University, New Delhi
- Varsha Tripathi, CSIR-Indian Institute of Toxicology Research, Lucknow
- S Meena, CSIR-National Institute for Interdisciplinary Science and Technology Trivandrum
- Panitsa, University of Patras, Patras, Greece
- Ranjna Sirohi, G B Pant University of Agriculture and Technology, Uttarakhand

BRSI-CENTER FOR ENERGY AND ENVIRONMENTAL SUSTAINABILITY, LUCKNOW

RESEARCH EXCELLENCE AWARD WINNERS

- Anthonymuthu Selvaraj, Alagappa University, Karaikudi, Tamil Nadu
- Karamchandani Bhoomika, Dr. D.Y. Patil Institute of Biotechnology and Bioinformatics, Pune
- Soren Jyoti P., Vidyasagar University, West Bengal, Vasantharaja R, Sathyabama Institute of Science and Technology, Chennai

BRSI-NHBT BEST POSTER AWARD WINNERS

- JIN WON CHOI, Korea University, Anam, Seongbuk, Seoul, Korea
- NEELAM G. KASPE, Agharkar Research Institute, Pune, India
- GANDLA MADHAVI LATHA, Umea University, Umea, Sweden
- RAJENDRA YADAV, Visvevaraya National Institute of Technology, Nagpur
- N KRISHNA RADHIKA, ICAR-Central Tuber Crops Research Institute, Trivandrum, India
- CHANDANKERE RADHIKA, Jjiangsu University, China
- Singh Anamika Indian Institute of Technology Delhi, India
- RAJESH R O, CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum, India
- SUSMITHA A, CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum, India

- Anu Chauhan, CSIR-Central Drug Research Institute, Lucknow, India
- SONAM, Indian Institute of Technology (Banaras Hindu University), Varanasi
- ANAMIKA, Institute of Bioresources and Sustainable Development (IBSD), Sikkim, India
- ROHIT M V CSIR-Indian Institute of Chemical Technology, Hyderabad, India
- WAQUIUDDIN RAHMAN Universiti Teknologi PETRONAS, Malaysia
- SAINI KOMAL CSIR-INDIAN INSTITUTE OF PETROLEUM, DEHRADUN, INDIA

BRSI-NHBT YOUNG RESEARCHER AWARDS (RAPID FIRE PRESENTATION)

- Varsha C Mohanan, Maharaja Sayajirao University, Baroda, Gujarat, India
- Meera Christopher, CSIR-National Institute for Interdisciplinary Science and Technology
- Vivek Kumar Gaur, CSIR-Indian Institute of Toxicology Research, Lucknow
- Tejal Gajaria, CSIR-Central Salt and Marine Chemicals Research Institute, Gujarat, India

NEWS: Govt. & Industry

He Jiankui faces three years in prison for CRISPR babies

The Chinese scientist who created the world's first gene-edited children has been sentenced to three years in prison by

a Chinese court.

He Jiankui, a biophysicist trained at Rice University and Stanford, shocked the world last year with his claim to have created genetically modified humans, twins referred to as Lulu and Nana.

In addition to a prison term, He will pay a \$425,000 fine and will be banned for life from further involvement in re-



productive medicine, according to a report from China's Xinhua news agency. The sentence was handed down December 30 by Shenzhen Nanshan District People's Court.

He's team employed the versatile DNA-editing technology known as CRISPR to alter the twins' genomes when they were newly fertilized embryos floating in a petri dish. The scientists then transferred them to a woman's uterus to begin the pregnancy.

Two of He's coworkers, Zhang Renli and Qin Jinzhou, will also receive prison terms of two years and 18 months, respectively, for "carrying out human embryo gene editing ... for reproductive purposes."

He's team was based at the Southern University of Science and Technology, and a draft scientific manuscript describing the creation of the twins lists a total of 10 authors, including lab workers and bioinformatics experts.

It's not clear if the other team members will face penalties.

Instead, in addition to He, the punishments announced in China appeared to single out those scientists directly responsible for injecting the gene-editing ingredients into human embryos, a procedure typically undertaken using an ultra-fine needle.

These include Qin, an embryologist listed as the first author on the draft manuscript, and Zhang, whose name appears on a separate unpublished paper detailing preliminary experiments, which describes him as having "performed the human embryo microinjections." Zhang at the time was affiliated with the Reproductive Medicine Center of the Guangdong Academy of Medical Sciences/Guangdong General Hospital in Guangzhou.

According to the court, He and his research colleagues conspired beginning in 2016 to create gene-edited babies, settling on the idea of modifying a gene called CCR5, changes that could render humans resistant to HIV.

He believed his research could bring him fame and fortune and might be a major scientific coup for China, too. But after the existence of the experiment was disclosed by MIT Technology Review last November, most experts immediately condemned the research, and provincial authorities opened what they termed a criminal investigation.

The court's statement is the first time Chinese authorities have acknowledged the birth of a third gene-edited child

in China, in addition to the twins. The second pregnancy likely came to term during the summer of 2019.

The court found that He and his colleagues "deliberately violated the relevant national regulations on scientific research and medical management" and "rashly applied gene editing technology to human assisted reproductive medicine."

During the trial, which was not public, investigators produced evidence including documents, witness accounts, electronic files, and videos. He reportedly pled guilty, as did his two associates.

According to the Xinhua news agency, He will be placed on a "black list" that will bar him, for life, from using assisted reproductive technology in humans.

Gilead, Biogen, GSK, Pfizer and Others increase List Prices of Some Drugs

Jan 2020

Pharmaceutical companies kept their annual New Year's Day traditions going with increases on the list price of drugs. According to an analysis conducted on Jan. 1, more than 250 drugs manufactured by different companies saw price increases.



The analysis, conducted by healthcare research firm 3 Axis Advisors, showed that the price increases were between 1% and about 10%, with the average drug price increased by about 5%, CNBC reported. Over the past four years, the median increase has been 9% and 10%.

Companies that increased prices on Jan. 1, according to the report, included GlaxoSmithKline, Biogen, Bristol-Myers Squibb, Gilead Sciences, Sanofi and Pfizer. More price increases are expected to be announced later this week, which could affect the median and range of those hikes, 3 Axis co-founder Eric Pachman told Reuters.

FDA Approves AstraZeneca and Merck's Lynparza for Pancreatic Cancer

Jan 2020



AstraZeneca and Merck are closing out 2019 on a high note with another approval for its PARP inhibitor Lynparza.

Specifically, the FDA approved Lynparza (olaparib) as a maintenance treatment of adult patients with deleterious or suspected deleterious germline BRCA-mutated (gBRCAm) metastatic pancreatic adenocarcinoma (pan-

creatic cancer) whose disease has not progressed on at least 16 weeks of a 1st-line platinum-based chemotherapy regimen. Patients will be selected for therapy based on an FDA-approved companion diagnostic for Lynparza, AstraZeneca and Merck said in a joint announcement.

Approval for Lynparza in this indication was based on strong results from the Phase III POLO trial that showed a statistically significant and clinically meaningful improvement in progression-free survival (PFS) as first-line maintenance therapy. In the trial, Lynparza nearly doubled the time patients with gBRCAm metastatic pancreatic cancer lived without disease progression or death to a median of 7.4 months versus 3.8 months on placebo. Trial data also showed that Lynparza reduced the risk of disease progression or death by 47%. Overall survival, which was a secondary endpoint, at interim analysis was 18.9 months for Lynparza versus 18.1 months for placebo. That did not reach statistical significance, the companies said. The safety and tolerability profile of Lynparza in the POLO trial was in line with that observed in prior clinical trials.

Lynparza is a first-in-class PARP inhibitor. It is the first targeted treatment that blocks DNA damage response in cells and tumors that have a deficiency in homologous recombination repair (HRR), such as BRCA1 and BRCA2 mutations. The drug has been approved for several indications in ovarian and breast cancers and is in line for potential approvals following other strong Phase III results in men with metastatic castration-resistant prostate cancer and late-stage ovarian cancer. And now, the drug can provide some hope for pancreatic cancer patients.

Roy Baynes, head of global clinical development and chief medical officer of Merck Research Laboratories said the expanded approval of Lynparza represents a “significant milestone” for patients and also “supports the value of germline BRCA testing in patients with this disease.”

Four Major Biopharma Scandals in 2019

Dec 2020

1. Zolgensma Data Manipulation

Novartis received a black eye after it was revealed that there had been some data manipulation in the preclinical work that helped lead to the approval of Zolgensma, the gene

therapy treatment that would be approved in May for spinal muscular atrophy. Novartis said AveXis began an internal investigation into the allegations of data manipulation in March of this year, two months ahead of the May approval of Zolgensma by the U.S. Food and Drug Administration. In August, the FDA revealed that data manipulation was involved in the preclinical process of Zolgensma's development conducted by Illinois-based AveXis, which Novartis acquired for \$8.7 billion. The FDA said the data manipulation was "limited to only a small portion of the product testing data that was contained in the marketing application." Novartis addressed the FDA's concerns in a 56-page response to the claims and laid the blame on the shoulders of former AveXis scientists Brian and Allan Kaspar. Novartis said the Kaspar brothers personally manipulated or instructed others to alter some of the preclinical data that ultimately led to the approval of the \$2.1 million priced SMA therapy. The Kaspar brothers were fired from AveXis in August following the revelations. In the wake of the scandal, Novartis pledged it will be more forthcoming with any concerns over data manipulation with the FDA and other regulatory agencies.

2. China CRISPR Scandal

While this scandal began in the later months of 2018, the fallout continued long into this year. In November 2018, Chinese scientist He Jiankui announced to the world that he had used CRISPR to alter the embryos of seven couples to make them resistant to HIV. Following the announcement, researchers across the world responded that Jiankui's experiment was unethical and "monstrous," particularly since it is unknown how those edits could be passed down to future generations of children. In January, the Chinese government took action against Jiankui. The government said the scientist was transferred to public security authorities and the individuals who participated in the experiment will be "severely dealt with according to the law." As the story unfolded, not only was the work roundly condemned by the scientific community, it turns out that some of the research claims may not even be legitimate. Jiankui's research has not been published yet, but earlier this month, the MIT Technology Review announced it had received two manuscripts from the Chinese researcher that has yet to be made public. Ahead of any publication though, it was reported that many of the claims Jiankui made are "ludicrous." As BioSpace reported, an analysis of the documents submitted to the MIT publication found multiple problems with the claims, suggesting that the research claims do not match the data. The analysis further suggests "the babies' parents may have been under pressure to agree to join the experiment; the supposed medical benefits are dubious at

best, and the researchers moved forward with creating living human beings before they fully understood the effects of the edits they had made."

3. IP Theft and the Cries of Xenophobia

The U.S. government has been closely monitoring researchers who have ties to China, either through the funding they receive or through their heritage. A 2017 report issued by the FBI noted that that intellectual-property theft by China costs the U.S. as much as \$600 billion annually. The National Institutes of Health, which worked on the report with the FBI, expressed concern over three primary areas -- the diversion of intellectual property, sharing of confidential information on grant applications and failure by some researchers to disclose substantial resources from outside organizations, including foreign entities. The government of China has pushed a program called the Thousand Talents Plan in China, which provides funding for scientists willing to conduct scientific research on behalf of the government. Earlier this year the Chinese government tamped down promotion of the Thousand Talents plan as western fears mounted over concerns of intellectual property theft. The following is something of a wrap-up of a number of reports that fall under this category. Last year, two Chinese scientists pled guilty to stealing intellectual property from GlaxoSmithKline. Those trade secrets were going to be part of the foundation for setting up a company in China called Renopharma. This year, researchers at Emory University and at MD Anderson were terminated following the revelation of potential undisclosed funding ties with the government of China. Following the ouster of the scientists at the prestigious cancer center, Stephen Hahn, chief medical executive at the Texas-based cancer center (and now the new FDA Commissioner) held a town hall meeting in April to ensure employees that the firings of the scientists were not based on their ethnicity or xenophobia, as some employees suggested.

4. Aggressive OxyContin Marketing in China

This year saw the fall of Purdue Pharma, the business that became the poster-company for the opioid crisis in the United States due to the aggressive and manipulative marketing tactics used in the 1990s and 2000s to boost sales of the pain killer. Documents released from legal battles with the company revealed many of the tactics encouraged by the Sackler family, the first family of Purdue Pharma. It is estimated that the Sackler family has earned more than \$4 billion from the sale of OxyContin. Documents from a lawsuit against the company in Massachusetts showed that former company president Richard Sackler announced at a launch party for OxyContin after its approval that his

colleagues should imagine a “blizzard of prescriptions.” A 2018 report released by the U.S. Department of Justice showed the company knew about ‘significant’ abuse of OxyContin in the first years after the drug’s introduction in 1996 and concealed that information.” In November, it was revealed that another pharma company owned by the Sacklers, Mundipharma, is using similar marketing tactics to push sales of OxyContin in China. According to the report, Mundipharma leadership encouraged its sales team to copy the private medical records of patients without their consent, a violation of Chinese law. Also, former Mundipharma sales representatives said, that on occasion, some would don white lab coats and pretend to be doctors. These reps would enter hospitals and talk to patients about their pain and encouraged them to ask for Mundipharma medications. Paid speaking gigs were also part of Mundipharma’s playbook to “deepen relationships” between the company and prescribing doctors. Additionally, the Mundipharma marketing team made use of bogus claims about the safety of OxyContin and other opioids in the materials they provided.

Mankind Pharma inks licensing pact with Glenmark to co-market diabetes drug

Mankind Pharmaceuticals on Monday said it has inked a licensing pact with Glenmark Pharmaceuticals to co-market diabetes drug Remogliflozin Etabonate in the country.



Under the sub-licensing agreement, Mankind will market the drug under its own trademark while Glenmark will manufacture and supply it to the drug firm.

“This is particularly important in reducing overall disease burden. Moreover, this strategic decision will not only strengthen our diabetes portfolio but also help consolidate our position as the fastest-growing player in the anti-diabetes segment,” Mankind Pharma Director of Marketing Sanjay Koul said in a statement.

Remogliflozin is economical than other similar agents currently available in sodium glucose co-transporter-2 (SGLT2) inhibitors class, which shall help for its better access among middle and low socio-economic strata of the society, he added.

Merck’s Keytruda approved for High-Risk Bladder Cancer

Jan 2020

Merck’s checkpoint inhibitor Keytruda (pembrolizumab) continues moving toward the projections of becoming the world’s best-selling drug. The company announced that the U.S. Food and Drug Administration (FDA) had approved the anti-PD-1 therapy as a monotherapy for patients with Bacillus Calmette-Guerin (BCG)-unresponsive, high-risk, non-muscle invasive bladder cancer (NMIBC) with carcinoma in situ (CIS) with or without papillary tumors who are not eligible for or have elected not to undergo cystectomy.

The approval was built on data from KEYNOTE-057. This trial looked at 96 patients with this indication. BCG-unresponsive high-risk NMIBC was defined as persistent disease despite adequate BCG therapy, disease recurrence after being initially tumor-free after adequate BCG therapy, or T1 disease after a single course of BCG.

Before treatment, all patients underwent transure-

thral resection of bladder tumor (TURBT) to remove all resectable disease. However, residual CIS that was able to be completely resected was allowed. Patients with muscle-invasive locally advanced non-resectable or metastatic urothelial carcinoma, concurrent extra-vesical non-muscle invasive transitional cell carcinoma of the urothelium, or autoimmune disease or a medical condition requiring immunosuppression were not included.

Keytruda is in more than 1,000 clinical trials in numerous cancers and treatment settings. It is currently approved for melanoma, non-small cell lung cancer, small cell lung cancer, head and neck squamous cell cancer, classical Hodgkin lymphoma, primary mediastinal large B-cell lymphoma, urothelial carcinoma, microsatellite instability-high cancer, gastric cancer, esophageal cancer, cervical cancer, hepatocellular carcinoma, Merkel cell carcinoma and renal cell carcinoma.

NATHEALTH suggests a zero-rating GST for healthcare services

Dec 2019

In taxation issues, it has recommended two options on Goods and Services Tax (GST). Firstly, NATHEALTH suggested a zero-rating GST for healthcare services. “Rationalization of GST for healthcare input services would lead to the unlocking of the differential input credit and will ease costs for all healthcare provid-

ers including nursing homes, clinics, hospitals and diagnostic centres. This saving will be passed on to the end consumers and will lower the cost of care,” NATHEALTH said in a joint memorandum with FICCI.

Dr Sudarshan Ballal, President, NATHEALTH expressed his views on the same, by saying, “Since GST is not payable on healthcare services, healthcare service providers are not eligible to avail credit on the input tax paid by it, which ultimately becomes a cost for the service provider. Under the current GST regime, the net impact of revised tax rates on inputs (goods and services) consumed by hospitals has increased. As this incremental cost is ultimately borne by the patients, it defeats the intention of the government to provide affordable healthcare services.”

He further added, “The government needs to provide tax incentives for both existing and new projects. In our pre-budget recommendations also, we have strongly recommended that to spur investment in the sector, the government could consider a tax holiday period of 15 years for hospitals. The length of the period of exemption needs to be longer, as new hospitals take at least five to seven years to start earning returns, after recovering interest and depreciation. For existing projects incentives can be given for ten years, to support re-investment in capacity and technology upgrades.”

Underlining the importance of capacity building, Siddhartha Bhattacharya, Secretary-General, NATHEALTH said, “A priority sector status will act as a catalyst for channelizing funds for the sector from financing agencies. Higher investments would ensure quality infrastructure in Tier II and III cities and rural areas. Such a move would also ensure that the societal objectives of the government are adequately met.”

He also elaborated on the fact that the harmonized master list of infrastructure sub-sectors by the Reserve Bank of India in 2012 includes healthcare as a priority area for development. But since, these projects are often long term based and require adequate funding options which are unavailable at a healthcare



provider level, the long term funding options with clearly defined gestation period would certainly be a step in the right direction.

Following are the recommendations and suggestions that the apex healthcare body has put forth for the government:

1. Facilitating ease of access to capital, NATHEALTH recommends a dedicated fund for healthcare infrastructure and innovation not only for encouraging entrepreneurship with newer business models but also improve accessibility, availability and quality in Tier II and III cities including rural areas.

2. Emphasizing on the problem of low penetration of health insurance is a major reason behind the rising out-of-pocket spending for healthcare services in India, NATHEALTH recommends the government should undertake additional efforts to make mandatory coverage for all citizens.

3. NATHEALTH suggests that organized sector employees could be given the option of paying their ESI contribution or purchasing insurance from any IRDA regulated insurance company. Gradually, the focus can then be shifted to the middle and upper-middle classes respectively to ensure access to preventive and curative care of sufficient quality and safeguards the entire community from financial distress.

4. The industry rightly expects that the Union Budget 2020-21 will be announced keeping in focus the incentives for medical value tourism, zero-rating GST on healthcare services and health insurance premiums.

5. Other areas which require efforts include incentivizing capacity building and promotional policies for private providers. These are long-standing suggestions from the Industry and are critical to expediting investment in the capacity building especially in Tier II and III cities for the realization of the dream of universal healthcare.

Nigeria Commercializes Pod Borer Resistant Cowpea, its First GM Food Crop

Dec 2019

The Federal Government of Nigeria has approved commercialization of a biotech cowpea variety resistant to pod borers. This development places Nigeria as the first country ever to commercialize genetically improved cowpea.



The National Committee on Naming, Registration and Release of Crop Varieties approved registration and commercial release of the pod borer resistant (PBR) cowpea at a meeting held on December 12, 2019 in Ibadan. The approval is a culmination of more than ten years of intensive trials of genetically modified (GM) cowpea and a breakthrough in eradicating *Maruca vitrata* pod borer, an insect that can cause up to 80 percent yield loss.

The new variety, named SAMPEA 20-T, was developed by scientists at the Institute for Agricultural Research (IAR), Ahmadu Bello University, Zaria in collaboration with several partners under the coordination of the African Agricultural Technology Foundation (AATF). According to the PBR cowpea

project's Principal Investigator Prof. Mohammad Ishiyaku, SAMPEA 20-T is high yielding, early maturing and also resistant to Striga and Alectra, two notorious parasitic weeds that are a major constraint to cowpea production in most producing areas in Nigeria and other dry savannah regions. "The protein and nutrients' content of variety SAMPEA 20-T is the same as that of other conventional varieties meaning that the Bt gene that was introduced into the variety has no negative influence on the nutritional composition of both grain and fodder," said Prof. Ishiyaku.

AATF Executive Director Dr Denis Kyetere thanked the Federal Government of Nigeria for releasing the new cowpea variety saying it showed its commitment towards improving the livelihoods of smallholder farmers. "Cowpea farmers have had to endure difficult farming conditions that required them to spray their crop 6-8 times, posing health risks," said Dr. Kyetere. PBR cowpea will contribute to addressing the national cowpea demand deficit of about 500,000 tonnes and improve the national productivity average of 350kg/hectare.

Novo Nordisk Launches \$99 Insulin Program

Jan 2020

In the My\$99Insulin Program, patients can buy up to three vials or two packs of FlexPen/FlexTouch/Pen-



Fill pens of any combination of Novo Nordisk insulins for \$99. This requires enrolling at NovoCare.com. Patients will receive a downloadable online card or a card that can be emailed to them, which can be redeemed at their pharmacy with a prescription to purchase insulin. The program is available to all eligible patients whether they have insurance or not.

In March, based on political pressure, Eli Lilly & Co., which manufactures the Humalog brand of insulin, pledged to distribute an authorized generic that could be 50% cheaper than Humalog's \$300 per vial price. Toward the end of the year, however, Senators Elizabeth Warren (D-Mass.) and Richard Blumenthal (D-Conn.), blasted the company after they released a survey of almost 400 pharmacies across the company about the availability of its generic insulin, "Insulin Lispro." The report, titled, "Inaccessible Insulin: The Broken Promise of Eli Lilly's Authorized Generic," concluded that the generic product was widely unavailable and that the company had not taken any meaningful steps to increase the drug's accessibility and affordability.

Lilly responded by calling the conclusions "nonsense," and publishing a full-page ad in newspapers on Dec. 19 aimed at increasing awareness about Lispro and free insulin for people struggling to pay for it, as well as discounts on insurance co-payments.

"Some pharmacies have chosen not to carry it," David Ricks, chief executive officer of Lilly told CNBC at the time. "Why? Because this exposes the underlying economics in our system ... which is that the middlemen, both in the supply chain as well as [pharmacy benefit managers] and insurance companies, prefer high-list-priced products with a lot of rebate. This has a lower list price and less rebate."

Sen. Charles Grassley (R-Iowa), chairman of the Senate Finance Committee, opened an investigation into insulin price increases. The Washington Post reported, "The Trump administration's approach has been mixed. The Food and Drug Administration says it is tweaking rules to increase the likelihood that true generic competition will enter the market, but it is unclear when those efforts will bear fruit."

Meanwhile, some states are making efforts to make insulin more accessible and affordable. It was reported yesterday that Colorado is the first state to cap insulin prices at \$100 per month. That law goes into effect today. The law also has the state's Attorney General Phil Weiser investigating insulin prices in the state.

Novo Nordisk Wins FDA Approval for Mealtime Insulin Treatment for Children

Jan 2020

Pediatric diabetes patients have a new insulin option following a new indication approval of Fiasp (insulin aspart injection) as a new mealtime insulin option for



children.

On Monday, the U.S. Food and Drug Administration (FDA) approved the Novo Nordisk-made drug for use in children. The company said Fiasp is the “first and only fast-acting mealtime insulin injection that does not have a pre-meal dosing recommendation.” With the latest approval, Fiasp has been approved for children and adults in three different dosing options: multiple daily injections (MDI), continuous subcuta-

neous insulin infusion pumps and intravenous infusion under supervision by a healthcare professional. Todd Hobbs, vice president and U.S. chief medical officer of Novo Nordisk, said it can be difficult for parents of children with diabetes to manage the “inevitable blood sugar spikes around mealtimes.” Hobbs, who is diabetic, also has a son with type 1 diabetes and is well-aware of the difficulties of managing blood sugar.

Each year, there are approximately 18,000 cases of type 1 diabetes diagnosed annually. Managing diabetes can be challenging for parents and caregivers given it is hard to know exactly how much or how quickly their children will eat, making mealtime insulin dosing difficult. Conventional rapid-acting insulins must be administered ahead of meals, which requires some guesswork to dose properly, and children living with diabetes may not achieve adequate blood sugar control, Novo Nordisk said in its announcement.

Fiasp won approval based on data from the onset 7 clinical trial, which confirmed the safety and efficacy of the medication in children. The 26-week trial includes 777 children with type 1 diabetes. Fiasp is administered at the beginning of a meal or within 20 minutes after starting a meal.

For Novo Nordisk, the newest indication for Fiasp comes about a week after the company launched its My\$99Insulin Program. The program is aimed at ensuring diabetic patients will have access to insulin. The financial program comes on the heels of intense criticism aimed at insulin manufacturers, particularly Novo Nordisk, Eli Lilly and Sanofi, over the rising costs of the life-saving medication. Last year, a cost analysis of insulin prices showed the price of insulin doubled between 2012 and 2016. According to the report, an individual with Type 1 diabetes paid on average \$2,864 for insulin in 2012 but that jumped to \$5,705 by 2016. With numerous stories of rationing of insulin due to cost concerns, members of Congress lashed out at the drugmakers at the end of 2019 over the costs. As the 2020 election nears, the price of insulin and other life-saving drugs will certainly become a campaign issue.

Panacea Biotec bags \$24.32 m award from UN Agencies

Dec 2019

The company received the award for its Easyfive-TT, which was introduced as fully liquid wP-based pentavalent vaccine in the Indian market

Panacea Biotec received awards worth \$24.32 m (Over Rs 170 crores) from UN agencies (UNICEF and PAHO) for supply of its Easyfive-TT, a fully liquid WHO-prequalified wP-based pentavalent vaccine (DtwP-HepB-Hib). UNICEF award is for calendar year 2020 and award of PAHO is for three (3) calendar years i.e. 2020-2022.

Easyfive-TT was introduced by Panacea Biotec as fully liquid wP-based pentavalent vaccine in Indian market in year 2005. With WHO prequalification in 2008, over 100 million doses have been supplied to more than 50 countries globally. Easyfive-TT is ready for use without further preparation by healthcare workers in the field, which offers major healthcare advantages in countries with challenging infrastructure and hygiene problems.

Dr Rajesh Jain, MD, Panacea Biotec commented, "Our continued focus on high-quality standards and supply sustain-

ability has helped drive and strengthen good-will for Panacea Biotec in the UN agencies-led market. Easy-Five-TT has further proved its ability to continuously attract customer interest, validated its role as a valuable and dependable product in our portfolio."

Science and She: Empowering Women in Science

Dec 2019

Why are there few women in science? UNESCO Institute for Statistics data states that in 2015, only 30% of the world's researchers were women. Based on head-count data, the highest percentage of women doing research was in Central Asia where 48.1% were women, followed by Latin America and the Caribbean (45.4%). The lowest percentage was reported in South and West Asia where only 18.5% of the researchers were women. There was no region reported with more than 50% saturation of women scientists. These statis-



tics bring us back to the question, why are there few women involved in science?

A meta-analysis by the American Association of University Women shows that the environment shapes women's achievements and interests in science, technology, engineering, and mathematics (STEM). When women believe in their potential for intellectual growth, they become achievers. Based on that finding, it is implied that there is a loophole in the growth mindset of women all over the world which can be attributed to their environment.

Building a culture that empowers women motivates them to do great things in science that will benefit their personal lives and the society. Their knowledge and experiences will lead the public to appreciate science and make informed decisions about technology applications such as biotechnology. Considering that the stories and aspirations of women could help bridge the gap between science and the public, ISAAA and its network of Biotechnology Information Centers launched Science and She in 2018. It is an online campaign aimed at empowering women in science by showcasing the experiences and viewpoints of female scientists and science communicators. The highlights of their stories are published in the 10th installment of ISAAA Biotech Communication Series titled Science and She: Empowering Women in Science. Download a copy now for free from the ISAAA website.

South Australia Lifts Ban on GM Crops

Dec 2019

Minister for Prime Industries and Regional Development Tim Whetstone released his statement at the start of 2020, saying that farmers in South Australia (SA) can now opt to grow genetically modified (GM) crops, following the State Parliament's move to lift SA's moratorium that banned GM crops in the region since 2004.



Talks of lifting the moratorium has been going on since August of 2019, after Australian economist Professor Kym Anderson of the University of Adelaide released a high-level independent review of the GM moratorium in 2018 which concluded that banning GM crops in SA cost grain producers millions of losses in Australian dollars, and will continue to millions more in income if the ban will continue to 2025. In early December of 2019, talks about the GM moratorium peaked again after its lifting was deferred due to amendments to the GM Bill that were submitted to the Parliament, which will require SA growers to obtain additional permits that can potentially cause delay the start of their planting season. The moratorium was originally set to be lifted on December 1, 2019.

This time around, Minister Whetstone officially announced on January 1, 2020, that SA farmers now have the choice to use GM seeds and grow GM crops as the State Parliament made the decision for the GM moratorium to be finally lifted. He said that now that the GM ban has set aside, SA farmers will find themselves at par with their competitors in the whole of Australia who already had access to GM products in the last 10 years.

The Minister foresees improvement in SA's economy, farmers' income, and scientific research and development to explore more opportunities in GM studies and tackle environmental issues and climate change through new technologies. In 2018, farmers in Australia planted 793,000 hectares of biotech cotton and canola.

The GM moratorium, however, remains imposed in Kangaroo Island who has an established non-GM canola market in Japan.

Janssen Expands Research & Development Presence with Major Investment in South San Francisco

Jan 2020



I'm very proud to announce a major expansion of Johnson and Johnson into the Bay Area. Our plans are to be a major contributor to this already incredibly vibrant ecosystem for both technology and life science companies, and be an excellent and enabling partner to many. We go forward on a mission to change the trajectory of health for humanity, said Mr Mathai Mammen, Global Head of R&D for the Janssen Pharmaceutical Companies of Johnson & Johnson.

The Janssen Pharmaceutical Companies of Johnson & Johnson (Janssen) today announced a significant investment to expand the presence and capabilities of Janssen Research & Development, LLC, in the San Francisco Bay Area. Reflecting the significant impact of Janssen and its research and development strategic direction on the mission of innovation at Johnson & Johnson, this investment will support the leasing and construction of a state-of-the-art R&D facility in the global innovation center of South San Francisco, CA. Janssen BioPharma, Inc. executed the lease within the Healthpeak Properties, Inc., South San Francisco project at The Shore at Sierra Point, Brisbane, CA.

With this investment, Janssen will continue to enable world-class discovery, enhance collaboration opportunities with innovation partners and integrate data science in all aspects of research and development. Moreover, this expansion will allow Janssen to bridge key interdisciplinary capabilities, such as biology and data science, to fuel a step-change in how it creates medicines. San Francisco is consistently ranked among the top cities globally for biologics development and life sciences research. The area also leads the world in “bilingual” data science talent, namely those individuals who are conversant in both life sciences and technology.

“As a well-established global technology and entrepreneurial hub and home to a wide array of pharmaceutical and biotechnology companies, the South San Francisco Bay Area is an ideal location to expand our R&D capabilities and global footprint,” said Mathai Mammen, M.D., Ph.D., Global Head, Janssen Research & Development. “Expanding our R&D presence in South San Francisco will better enable deep partnerships with biotechnology companies, universities and investors in the region. This is one important step to enable us to accelerate the growth of our portfolio of innovative products ultimately to deliver better health outcomes for patients around the world. We look forward to being an even greater contributor to and participant in one of the most vibrant scientific ecosystems in the world.”

Janssen personnel at this new facility will focus on infectious and retinal diseases, data science and emerging modalities within discovery, product development

and supply. The expanded facility is projected to more than double Janssen's presence in South San Francisco and is anticipated to be fully operational in 2022, upon completion of construction.

About the Janssen Pharmaceutical Companies

At Janssen, we're creating a future where disease is a thing of the past. We're the Pharmaceutical Companies of Johnson & Johnson, working tirelessly to make that future a reality for patients everywhere by fighting sickness with science, improving access with ingenuity, and healing hopelessness with heart. We focus on areas of medicine where we can make the biggest difference: Cardiovascular & Metabolism, Immunology, Infectious Diseases & Vaccines, Neuroscience, Oncology, and Pulmonary Hypertension. Learn more at www.janssen.com. Follow us at @JanssenGlobal.

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At Johnson & Johnson, we believe good health is the foundation of vibrant lives, thriving communities and forward progress. That's why for more than 130 years, we have aimed to keep people well at every age and every stage of life. Today, as the world's largest and most broadly-based healthcare company, we are committed to using our reach and size for good. We strive to improve access and affordability, create healthier communities, and put a healthy mind, body and environment within reach of everyone, everywhere. We are blending our heart, science and ingenuity to profoundly change the trajectory of health for humanity. Learn more at www.jnj.com. Follow us at @JNJNews.

Engineered Bacteria Produces BeeFree Honey

Jan 2020

A team of 12 students from the Department of Biotechnology and Food Engineering at Israel's the Technion - Israel Institute of Technology has developed a bee-free honey produced by the bacterium *Bacillus subtilis*, which "learns" to make honey following re-

programming in a lab. For the project they named BeeFree, the team won a gold medal at the recent iGEM (International Genetically Engineered Machine) competition held in Boston, Massachusetts, USA, where some 300 teams from different universities around the world took part.

Students from six different disciplines – biomedical engineering, medicine, biotechnology and food engineering, industrial management and engineering, chemical engineering, and aerospace engineering – came together to create BeeFree. The team worked on this project to create a product that will stop the poor treatment of bees from bee farming and prevent the phenomenon called Colony Collapse Disorder (CCD).

The team established a comprehensive model of the entire "Synthetic Honey Stomach" metabolic pathway. "Our vision is to create a sustainable BeeFree honey using engineered bacteria, which will process a nectar-like solution using secreted enzymes that mimic the honey stomach environment," the BeeFree website states. They used *B. subtilis* as a bacterial model for protein secretion because its high secretion capacity made it a prime candidate to produce the target enzymes and create "BeeFree" honey.

For more details, visit the BeeFree website.

Filtered coffee helps prevent type 2 diabetes, show biomarkers in blood samples

Jan 2020

Many previous studies have shown a connection between high coffee intake and a reduced risk of developing type 2 diabetes. Now, a study from Chalmers

University of Technology and Umeå University, offers new insight into this connection, using a novel method to help differentiate between the effects of filtered coffee and boiled coffee.

“We have identified specific molecules -- ‘biomarkers’ -- in the blood of those taking part in the study, which indicate the intake of different sorts of coffee. These biomarkers are then used for analysis when calculating type 2 diabetes risk. Our results now clearly show that filtered coffee has a positive effect in terms of reducing the risk of developing type 2 diabetes. But boiled coffee does not have this effect,” says Rikard Landberg, Professor in Food Science at Chalmers, and Affiliated Professor at the Department of Public Health and Clinical Medicine at Umeå University.

With the use of these biomarkers, the researchers were able to show that people who drank two to three cups of filtered coffee a day had a 60% lower risk of developing type 2 diabetes than people who drank less than one cup of filtered coffee a day. Consumption of boiled coffee had no effect on the diabetes risk in the study.

Filtered coffee is the most common method of preparation in many places, including the US and Scandinavia. Boiled coffee in this case refers to an alternative method of coffee preparation sometimes used in Sweden and some other countries, in which coarse ground coffee is simply added directly to boiling water and left to brew for a few minutes. All the data used in the research came from a group of Swedish subjects and was collected in the early 1990s.

According to Rikard Landberg, many people wrongly believe that coffee has only negative effects on health. This could be because previous studies have shown that boiled coffee increases the risk of heart and vascular diseases, due to the presence of diterpenes, a type of molecule found in boiled coffee.

“But it has been shown that when you filter coffee, the diterpenes are captured in the filter. As a result, you get the health benefits of the many other molecules present, such as different phenolic substances. In moderate amounts, caffeine also has positive health

effects,” he says.

The question is whether diterpenes also negatively influence sugar metabolism and are therefore the cause of why boiled coffee does not help lower the risk of diabetes, in the way that filter coffee does. The researchers still cannot say the exact nature of the link.

Many other types of coffee preparation were not specifically investigated in the study, such as instant, espresso, cafetière, and percolator coffee. These types of coffee were not common among the Swedish study population when the data was collected.

But given that espresso coffee, from classic espresso machines or the now popular coffee-pods, is also brewed without filters, Rikard Landberg believes the health effects could therefore be similar to boiled coffee, in terms of the risk of type 2 diabetes. Coffee made in a cafetière, or French press, is prepared in a similar way to boiled coffee, so it may also not have the positive effect of reducing type 2 diabetes risk. It is unclear whether instant coffee, the most popular type in the UK, would be more similar to filtered or boiled coffee in this respect.

But the researchers are careful to note that no conclusions can be drawn yet regarding these other preparation methods. Rickard Landberg also stresses that the health impacts of coffee do not depend solely on if it is filtered or not. They also vary with how the coffee beans, and the drink in general, are managed.

To differentiate the diabetes risk for boiled and filtered coffee, a new technique called metabolomics was used, in combination with classic dietary questionnaires. Metabolomics makes it possible to identify the blood concentration of specific molecules from a given food or drink and use that as an objective measurement of intake -- instead of simply relying on self-reported intakes from the questionnaires, which are prone to large errors.

“Metabolomics is a fantastic tool, not just for capturing the intake of specific foods and drinks, but also for studying the effects that that intake has on people’s metabolism. We can derive important information on the mechanisms behind how certain foods influence

disease risk,” says Lin Shi, Postdoctoral researcher and the lead author of the study.

Journal Reference:

L. Shi, C. Brunius, I. Johansson, I.A. Bergdahl, O. Rolandsson, B. Guelpen, A. Winkvist, K. Hanhineva, R. Landberg. Plasma metabolite biomarkers of boiled and filtered coffee intake and their association with type 2 diabetes risk. *Journal of Internal Medicine*, 2019; DOI: 10.1111/joim.13009

After DNA Nanopores NOW the Protein Nanopores, the first step to sequencing

Jan 2020

Researchers at the University of Illinois at Urbana-Champaign, Cergy-Pontoise University in France and the University of Freiburg in Germany published the findings in the journal *Nature Biotechnology*.

“DNA codes for many things that can happen; it tells us what is potentially possible. The actual product that comes out -- the proteins that do the work in the cell -- you can’t tell from the DNA alone,” said Illinois physics professor Aleksei Aksimentiev, a co-leader of the study. “Many modifications happen along the way during the process of making protein from DNA. The proteins are spliced, chemically modified, folded, and more.”

A DNA molecule is itself a template designed for replication, so making copies for sequencing is relatively easy. For proteins, there is no such natural machinery by which to make copies or to read them. Adding to the difficulty, 20 amino acids make up proteins, as compared with the four bases in DNA, and numerous small modifications can be made to each amino acid during protein production and folding.

“Many amino acids are very similar,” Aksimentiev said. “For example, if you look at leucine and isoleucine, they have the same atoms, the same molecular weight, and the only difference is that the atoms are connected in a slightly different order.”

Nanopores, small protein channels embedded in a membrane, are a popular tool for DNA sequencing. Previously, scientists thought that the differences in amino acids were too small to register with nanopore technology. The new study shows otherwise.

The researchers used a membrane channel naturally made by bacteria, called aerolysin, as their nanopore. In both computer modeling and experimental work, they chopped up proteins and used a chemical carrier to drive the amino acids into the nanopore. The carrier molecule also kept the amino acids inside the pore long enough for it to register a measurable difference in the electrical signature of each amino acid -- even leucine and isoleucine, the near-identical twins.

“This work builds confidence and reassures the nanopore community that protein sequencing is indeed possible,” said Abdelghani Oukhaled, a professor of biophysics at Cergy-Pontoise whose team carried out much of the experimental work.

The researchers found they could further differentiate modified forms of amino acids by using a more sensitive measurement apparatus or by treating the protein with a chemical to improve differentiation. The measurements are precise enough to potentially identify hundreds of modifications, Aksimentiev said, and even more may be recognized by tweaking the pore.

“This is a proof-of-concept study showing that we can identify the different amino acids,” he said. “The current method for protein characterization is mass spectrometry, but that does not determine the sequence; it compares a sample to what’s already in the database. Its ability to characterize new variations or mutations is limited. With nanopores, we finally could look at those modifications which have not yet been studied.”

The aerolysin nanopore could be integrated into standard nanopore setups, Aksimentiev said, making it accessible to other scientists. The researchers are now

exploring approaches to read the amino acids in sequential order as they are cut from the protein. They also are considering other applications for the system.

“One potential application would be to combine this with immunoassays to fish out proteins of interest and then sequence them. Sequencing them will tell us whether they’re modified or not, and that could lead to a clinical diagnostic tool,” Aksimentiev said.

“This work shows that there’s really no limit to how precisely we can characterize biological molecules,” he said. “Very likely, one day we will be able to tell the molecular makeup of the cell -- what we are made of, down to the level of individual atoms.”

Journal Reference:

Hadjer Ouldali, Kumar Sarthak, Tobias Ensslen, Fabien Piguet, Philippe Manivet, Juan Pelta, Jan C. Behrends, Aleksei Aksimentiev, Abdelghani Oukhaled. Electrical recognition of the twenty proteinogenic amino acids using an aerolysin nanopore. *Nature Biotechnology*, 2019; DOI: 10.1038/s41587-019-0345-2

New gene for male infertility discovered

Jan 2020

“We hope that our evidence will contribute to this gene being in panels for diagnosis of male infertility,” said corresponding author Cynthia Morton, PhD, medical geneticist at the Brigham. “Infertility is a big problem for young people, and 40 to 72 percent of men lack a diagnosis. This means that we have a lot of gene finding to do. My lab has a longstanding interest in studying individuals who have a balanced chromosome rearrangement where two chromosome segments swap places. In this case, it led us to an important discovery.”

Morton, former graduate student and first author Samantha Schilit, PhD, and colleagues from Harvard

Medical School and Wesleyan University began the work that would lead them to SYCP2 when a physician referred a case to them. Known as DGAP230, the subject was studied as part of the Developmental Genome Anatomy Project (DGAP), an initiative Morton began in 1999 to understand the genetic basis of birth defects and underlying molecular basis of development. By age 28, DGAP230 had a two-year history of infertility and severely low sperm count. By analyzing his chromosomes, Schilit, Morton and colleagues found that the subject had a balanced chromosomal rearrangement on chromosomes 20 and 22. The team discovered that this genetic abnormality led to a 20-fold increase in the activity of SYCP2. Through a series of elegant experiments involving yeast and cellular models, the researchers went about analyzing the impact of this change in SYCP2 activity.

“Balanced chromosomal rearrangements in infertile men are rarely followed up beyond reporting a risk for segregation of unbalanced gametes, which can lead to recurrent miscarriage. This work shows that a chromosomal rearrangement may also disrupt or dysregulate genes important in fertility, and therefore should be considered,” said Schilit.

In addition, the researchers looked for other cases of SYCP2 contributing to male infertility. To do so, they collaborated with investigators at the University of Münster who had enrolled men with infertility in a separate study. The team’s search revealed three men with loss-of-function variants in SYCP2. Disruptions in SYCP2 were far more frequent among men with infertility than in the general population.

Morton notes that while the discoveries about SYCP2 may help inform diagnosis, implications for treatment remain to be determined.

“A diagnosis can be therapeutic in itself -- even if there isn’t something that can be done to correct it. It ends the search for the underlying issue and opens the door for enrolling in clinical trials,” said Morton. “And I believe there is good reason to be optimistic; we now have better tools for discovery and can begin on the path toward therapy.”

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IMPORTANT DATES

Registration & abstract submission opens
October 31, 2019

Early bird registration closes :
January 1, 2020

Late registration & abstract submission closes
January 10, 2020

Release of oral/poster selection list:
January 15, 2020

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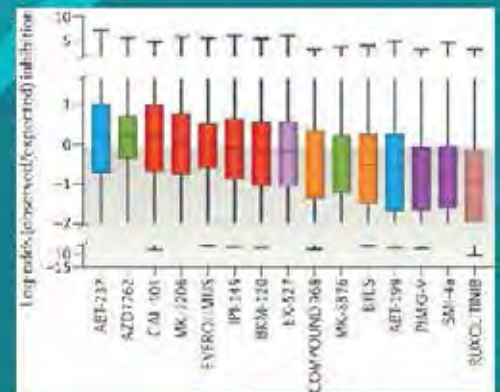
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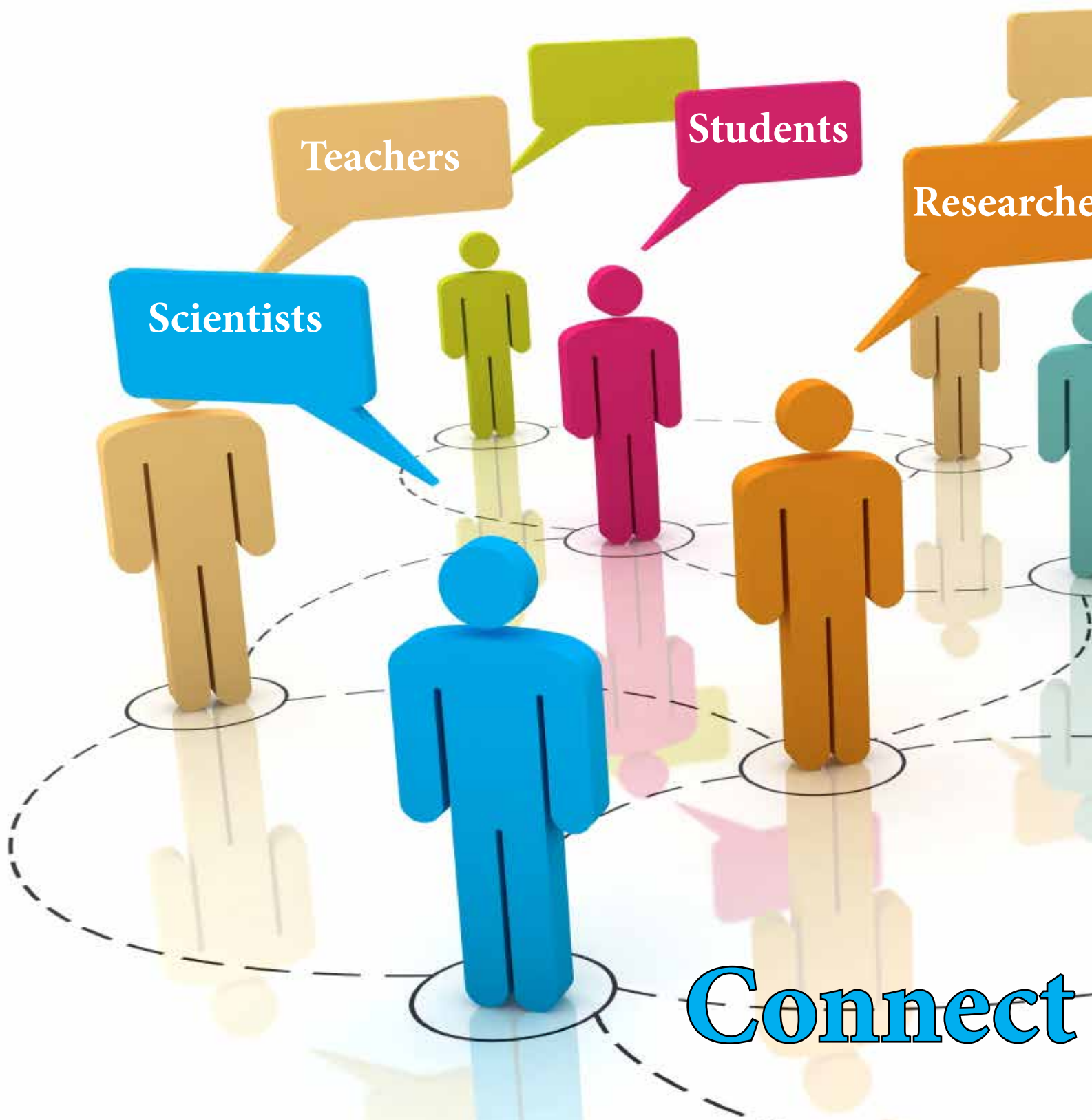
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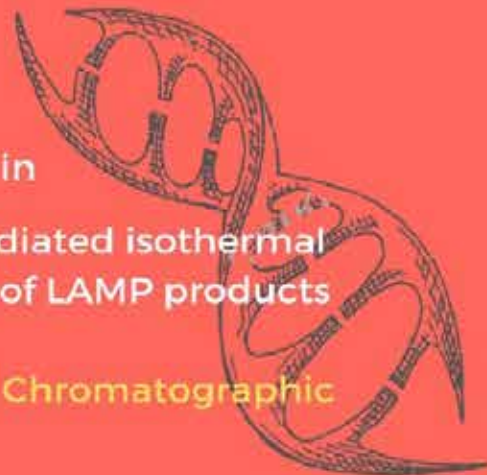
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Applications are invited from outstanding scientists/researchers holding Ph.D. degree and having regular (permanent) positions in recognized S&T institutions/universities and actively engaged in research in frontline areas for deputation abroad during the Calendar year 2020 in all fields of Science including Engineering, Medicine & Agriculture for short term visits (1-4 weeks for senior scientists) and long term visits (3 months for junior/younger scientists) under the Scientific Bilateral Exchange Programme with overseas Academies/Organizations in Brazil, China, France, Hungary, Iran, Israel, Nepal, Philippines, Poland, Scotland, Slovak Republic and Republic of Slovenia, Sudan and Taiwan.

The detailed guidelines and application form can be downloaded from download form section of <http://www.insaindia.res.in>.

The hard copy of application duly completed and endorsed by the Head of the Institution should be submitted latest by 31 January 2020 to The Deputy Executive Director-I (Scientific), Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi 110002. The soft copy of complete application (single PDF file only) can be sent via e-mail to: intacademy@insa.nic.in, and mention your Name, Area of Research and Proposed Country in the subject line of e-mail. Incomplete applications will be rejected and no further correspondence shall be made.

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The program is mainly intended to give students a real-time exposure/hands-on experience to a research environment, in the hope that it would inculcate in them a zeal for research as a future career.

Application procedure Application for the Summer Program 2020 can be downloaded (Zipped pdf file).

Completed application (Hard copy) for the program **MUST reach CCMB by 25/01/2020**. The names of the Selected candidates will be made available on CCMB homepage during the middle of February 2020; here, it may be noted that no separate intimation would be sent to any candidate, and thus all applicants must look for his/her name in the 'selection list' on the CCMB homepage only.

Important dates

The program is for duration of 60 days (~eight weeks) in the months of May-July 2020.

Last date for receipt of Application in CCMB: 25 January 2020

List of the selected candidates on CCMB homepage Middle of February 2020.

(There will NOT be any separate letter of intimation to the selected candidates)

Last date for selected candidates to inform their: Acceptance to CCMB/Program Coordinator 29 February 2020 Tentative date to join CCMB/the program 20th May - 3rd Jun 2020

(No candidate will be allowed to join after 3rd June under any circumstance)

More Info: <https://www.ccmb.res.in/index.php?view=training&mid=0&id=73&nid=292>

Nominations are Invited for Shanti Swarup Bhatnagar Prize for Science and Technology 2020

The Council of Scientific and Industrial Research (CSIR) invites nominations for the Shanti Swarup Bhatnagar (SSB) Prizes in Science and Technology for the year 2020. The SSB Prizes are to be given for research contributions made primarily in India during the past five years. The age of the nominee for the SSB Prize 2020 should not be more than 45 years as on 31 December 2019.

The SSB Prizes are awarded for notable and outstanding research, applied or fundamental, in the following disciplines: (1) Biological Sciences, (2) Chemical Sciences, (3) Earth–Atmosphere–Ocean– Planetary Sciences, (4) Engineering Sciences, (5) Mathematical Sciences, (6) Medical Sciences and (7) Physical Sciences.

The SSB Prize carries a cash award, a citation and a plaque for each scientist selected for the award. Nominations addressed to The Scientist Incharge – SSB YSA Unit, Human Resource Development Group, CSIR Complex, Library Avenue, Pusa, New Delhi 110 012 should be sent as per the prescribed proforma along with reprints of significant publications of the last 5 years period on or before 31 March 2020. PDF version of duly filled proforma, significant publications and photograph of the proposed nominee are also required in USB/Pen drive.

The details of the SSB Prize and the prescribed proforma for nomination may be obtained from the above address or may also be downloaded from the website: www.csirhrdg.res.in

INDIAN COUNCIL OF MEDICAL RESEARCH-NATIONAL INSTITUTE OF RESEARCH IN TRIBAL HEALTH
NAGPUR ROAD, P.O. GARHA, JABALPUR (M.P.)- 482003

WALK-IN-INTERVIEW

Following positions for the project entitled “State level Viral Research and diagnosis Laboratory at ICMR-NIRTH, Jabalpur under managing Epidemics and Natural Calamities” are to be filled purely on temporary and contract basis for a period of “One Year” (which will be extended year to year basis) under the ICMR-NIRTH, Jabalpur:-

Sl. No.	Name & number of post	Essential qualification	Desirable qualification	Age	Consolidated monthly salary in Rs.	Work Responsibility	Date, Time & Place of Interview
1	Research Scientist-I (Non-Medical) -1 OBC	First class Master degree in Sciences from a recognized University/ Institute. Or Second class M.Sc. + Ph.D. degree in relevant subject from a recognized University	Two year R&D/ Teaching experience in relevant subject after obtaining essential qualification. Knowledge of computer applications.	35 Years Relaxable up to five year for Govt. servant and SC/ST/OBC as per DOPT GOI	60,000/-	Diagnosis and research of viruses of public health importance. Candidates with experience in Serological Molecular characterization virus isolation, knowledge of biosafety will be preferred	04/02/2020 at 09:00AM at ICMR-National Institute of Research in Tribal Health, Near NSCB Medical College Nagpur Road, Garha Jabalpur (MP)-482003.



राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान

National Institute of Animal Biotechnology

(An autonomous Institute of the Department of Biotechnology)

URL: www.niab.org.in

Advertisement No. 25 / 2019

Recruitment of Scientist

NIAB, an autonomous institute under the aegis of Department of Biotechnology, 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 genetics and genomics, transgenic technology, reproductive technology, diseases, nutritional enrichment, 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 and improved therapeutic molecules for farm animals.

NIAB is looking for Scientists and visionary academic leaders with outstanding record of research accomplishments to establish strong centers of research to address the problems of livestock. Persons having effective interpersonal and leadership skills with commitment to work effectively with colleagues as part of inter-disciplinary team are required. NIAB is looking for dedicated and committed Scientists who believe in institution building and have a passion for academic excellence and quality research for filling the following vacant positions :

Positions	Pay Level	No of post	Age Limit
Scientist -F	Level 13A as per 7 th CPC	2 (UR)	Not exceeding 50 Years
Scientist -B	Level 10 as per 7 th CPC	1 (UR)	Not exceeding 35 Years

Published evidence of working in the specified area during or after Ph.D. (Publications in high quality journal will be given preference).

WOMEN SCIENTISTS FULFILLING THE REQUIREMENTS ARE ENCOURAGED TO APPLY

Please visit NIAB website www.niab.org.in for essential qualifications, other terms & conditions and online application form details.

Date of commencement of online applications: 28 December 2019

Last date for submitting online applications: 28 January 2020 (5 PM)



Government of India Department of Biotechnology Ministry of Science & Technology

The Department of Biotechnology (DBT) seeks to provide a unique opportunity for Young Professionals to work and get exposure to various programmes and activities of the Department including public outreach & communication, Public Policy, R&D Planning & Development, Research Management etc. Department seeks to provide an opportunity to gain experience in the DBT policies and programmes. This programme requires candidates to demonstrate proven academic, credentials, professional achievement and leadership qualities.

DBT is looking for young, talented, innovative and dynamic Professionals, persons with a passion for development and the potential to become future leaders in their respective fields. Details of the same are given below:

Name of position: Young Professional

Number of positions: 05

Method of recruitment: Contract Based through Open Market

Age Limit: Candidates should be below 35 years of age as on the date of Advertisement.

Period of Contract: For a period of 02 years.

Remuneration (per month) Rs 40,000/- (Fixed) (Inclusive of Taxes)

Education qualification:

Essential: Persons having Masters Degree or technical qualifications like B.Tech, MBA or equivalent in field/subject given at Annex-1.

Desirable: Persons with MPhil or additional qualifications, research experience, published papers and post qualification experience in the relevant field would be preferred

Submission of Applications:- Eligible candidates may apply online on the link to be provided on the website of Department of Biotechnology within 30 days from the date of publication of the advertisement in the Newspaper. Applications are to be submitted online only. In case of any technical query, please write to recruitment@dbt.nic.in or call 011-24360940 between 10.00 AM to 05.00 PM from Monday to Friday. For all the updates/ future communication, please visit Department's website.

Call for applications

Senior and Intermediate Fellowships *in Basic Biomedical Research*

Preliminary application deadline: 3 February 2020, 2 PM IST

IndiaAlliance
DBT wellcome

Call for applications

Clinical and Public Health Research Fellowships 2020

Preliminary application deadline: 18 February 2020



IndiaAlliance
DBT wellcome



ICGEB Meetings and Courses 2021 Call for Proposals

ICGEB provides support for the organisation of scientific events in the Life Sciences in ICGEB Member States.* Funding is available for **Meetings**, to be held in the three ICGEB Components (Trieste, Italy; New Delhi, India; Cape Town, South Africa); **Workshops**, co-sponsored by local organising institutes; **Courses**, providing theoretical and/or practical training. The **"Future of Science"** programme supports scientific events on currently hot scientific topics, with open communication to media and public; **Seeds for Science**, supports small meetings aimed at building networks for future research collaborations; **Sponsorship** is also provided to scientific events relevant to the ICGEB mandate in the ICGEB Member States.

Closing date for applications: 28 February 2020

Scientific institutions located in **ICGEB Member States** are encouraged to apply

IITM Summer Fellowship Programme - 2020

The IITM - Summer Fellowship Programme of two months with stipend is designed to enhance awareness and interest in high quality academic research among young Engineering, Management, Sciences and Humanities students through a goal oriented summer mini-project undertaken at the Indian Institute of Technology Madras.

Eligibility: Candidates pursuing 3rd year of B.E./B.Tech./B.Sc. (Engg) or 3rd or 4th year of Integrated M.E./M.Tech. programme, 1st year of ME/M.Tech/M.Sc./M.A, MBA with outstanding academic background in terms of high ranks in university examinations are encouraged to apply, highlighting their academic performance and achievement including papers presented at seminars, projects executed, design contests participated, score/rank in Mathematics Olympiad and any other awards/distinctions obtained. [IIT students are not eligible to apply].

Period of the Project: Duration of the programme may commence from 20th May 2020 to 19th July 2020. (Schedule may be flexible to suit student's convenience.)

Stipend: A sum of Rs.6000/- per month will be given as a stipend for a maximum period of 2 months.

Bonafide :Letter from the Institute: Should certify that you are a bonafide student issued by the Head of Institution (download template of UG/DD bonafide and PG Bonafide
Site will be activated on 12-01-2020

The Last date for Online Submission : 29-02-2020 at 5.00 pm.

Notice



GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

Department of Biotechnology, Ministry of Science & Technology, Government of India
invites nominations for
**DBT-Biotech Product, Process Development and Commercialization Award
2020**

Who can Apply?

Nominations are requested from scientists/innovators/entrepreneurs/institutions/companies both in public as well as private sector for their outstanding contributions towards development and commercialization of a process/technology / product in Biotechnology/ Biological Sciences including agriculture, biomedical, veterinary and environmental sciences

How to Apply?

Nominations in prescribed proforma should be submitted through online DBT portal ([epromis](http://www.dbtepromis.nic.in)) [[url: http://www.dbtepromis.nic.in](http://www.dbtepromis.nic.in)] on or before **February 15, 2020**. One hard copy of nomination should be sent to Dr. Kakali Dey Dasgupta, Scientist "E", Department of Biotechnology, Ministry of Science & Technology, 7th Floor, Block-2, CGO Complex, Lodhi Road, New Delhi -110003.

For details of the award and proforma for nominations please log on to DBT website (www.dbtindia.gov.in)

Call for Proposal for RFA on Drug Development

With the aim to take India at global map in terms of R&D innovations in the area of drug development in our country, the Department has initiated a new program on "Drug Development" with a vision to develop indigenous and cost-effective new drugs against the following diseases:

- I. Communicable Diseases : Tuberculosis
- II. Non-Communicable Diseases
Cardio-Vascular Diseases (CVD),
Chronic Obstructive Pulmonary Diseases (COPD) and
Cancer (oral, head and neck, cervical and breast cancer)

Mode of Submission:

Proposals may be submitted online in the DBT R&D format through DBT- eProMIS (<http://dbtepromis.nic.in/Login.aspx>) under Category of Area-'Drug Development', clearly stating 'Proposal against Call for Proposal'. Subsequently, two hard copies should also be sent to: Dr. Vinita N. Chaudhary, Scientist 'E', Department of Biotechnology, Block- 2, Room No.705, 7th floor, CGO Complex, Lodhi Road, New Delhi - 110003.

For any queries please contact:

Dr. Vinita Chaudhary, Joint Director, DBT:vinita.chaudhary@nic.in Dr. Aparna Sharma, Manager-Technical, BIRAC tech01.birac@nic.in

Timeline: Call for Proposal opens: 01.01.2020 Call for Proposal closes: 29.02.2020



Government of India

Ministry of Science & Technology

Department of Biotechnology

Government of India

Ministry of AYUSH

National Medicinal Plants Board



Joint Call for R&D Proposals on Biotech interventions in medicinal plants

Department of Biotechnology (DBT), Ministry of Science & Technology, Govt. of India and National Medicinal Plants Board (NMPB), Ministry of AYUSH, Govt. of India have entered into a Memorandum of Understanding (MoU) for mutual collaboration to explore the possibility of cooperation, convergence and synergy and to have a platform for exchange of information between both the organizations and to have a biotechnological intervention in AYUSH sector. The priority medicinal plant species identified include *Embeliaribes*, *Saracaasoca*, *Sidacordifolia*, *Boswellia serrata*, *Commiphorawightii*, *Urariapicta*, *Desmodiumgangeticum*, *Nordostachysjatamansi*, *Bacopa monnieri* and *Withaniasomnifera* for support for carrying out R&D activities on various aspects of medicinal plants. With an aim of making sustainable availability and use of medicinal plants, both the organizations propose to support R&D proposals in the following thrust areas:

1. Finding substitutes and sustainable alternative plant parts for Rare, Endangered and Threatened (RET) medicinal plant species.
2. Development of bio-actives and marker compounds for authentication of raw medicinal plant materials.
3. Elite identification, development of propagation techniques and conservation.
4. Varietal development and establishment of quality standards in respect of norms related to toxicity and heavy metal content to increase acceptability of botanicals in the international market.
5. Non-destructive methods and sustainable harvesting for priority species such as *Commiphorawightii*.
6. Value addition and technology development through biotechnology tools for priority species such as *Bacopa monnieri* and *Withaniasomnifera*.
7. Ecological Niche modeling on RET medicinal plants species.

Eligibility: Applications may be submitted by public and private universities, colleges, institutes, non-profit organizations (recognized by DSIR as a Scientific and Industrial Research Organization (SIRO)), with demonstrated expertise, track record and infrastructure.

Norms of Assistance: The funding of selected R&D proposals will be made by DBT and NMPB following their own existing norms.

How to apply: Applications should full proposals on or before the deadline through DBT eProMIS portal (<https://dbtepromis.nic.in>) and submit two hard copies to Dr. Manoj K. Modi, Scientist 'E', Department of Biotechnology, Block III (5th Floor), CGO Complex, Lodhi Road, New Delhi – 110003 and email the softcopy to manoj.modi@nic.in. The link to submit the proposal can be accessed by registering and logging in as PI in DBT eProMIS portal.

The deadline for submission of full proposal is 31st January, 2020.

For any query, contact Dr. Manoj K. Modi, Scientist 'E', DBT; email: manoj.modi@nic.in.

* * * * *

National Institute of Cancer Prevention & Research (Formerly Institute of Cytology and Preventive Oncology) Molecular Biology Group

Indian Council of Medical Research, Department of Health Research (MOHFW),
I-7, Sector-39, NOIDA (UP) – 201301, Near Noida City Centre Metro Station,
(NICPR website: nicpr.res.in, ICMR website: icmr.nic.in)

Course Title: DHR funded 1st workshop on **Basic Molecular Biology Techniques relevant to Cancer Research – Hands on Training**

Course Contents:

A. Polymerase Chain Reaction (PCR)

- Allele Specific PCR
- Nested/Hemi-nested PCR
- PCR-RFLP
- Real Time PCR
- Methylation Specific PCR

B. Human Papillomavirus (HPV) Detection

- PCR method
- Hybrid Capture II (HC II)

C. Immunohistochemistry (IHC)

D. Immunoblotting

E. Tissue Culture related techniques

Course Fee: No course fee

Duration: 4 Days, 28th to 31st January, 2020

Venue: NICPR (ICMR), NOIDA

Eligibility: Registered Ph.D Students (min.1 year research experience)/ Post-Doctoral/MBBS/MD/BDS/MDS/AYUSH Graduate (any branch)

The number of participants for the course is limited to 20 and Govt. Institute will be preferred. Send the request by giving brief bio-data (specifying email address and mobile contact number). The candidates may please note that we do not have the facility of boarding/lodging and participants should make their own arrangements for the same. **Last date of receipt of application is January 10, 2020.**

Apply: Please send their application through Email to: mausumi.bharadwaj@gmail.com

Course Director:

Dr.Mausumi Bharadwaj, Ph.D, FNAsc.
Scientist G & Principal Investigator
ICMR-National Institute of Cancer Prevention & Research
I-7, Sector 39, Noida - 201301
Phone : 0120-2446910 (O), 9811860996
E.mail: mausumi.bharadwaj@gov.in;
mausumi.bharadwaj@gmail.com

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E.mail : directoripo@icmr.gov.in

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Calls Open:

21st November

Submission Deadline:

29th February 2020

For queries please contact:

**Dr. Vinita Chaudhary,
Scientist 'E', DBT**

(vinita.chaudhary@nic.in)

Subscription

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The Monthly magazine of Biotechnology



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