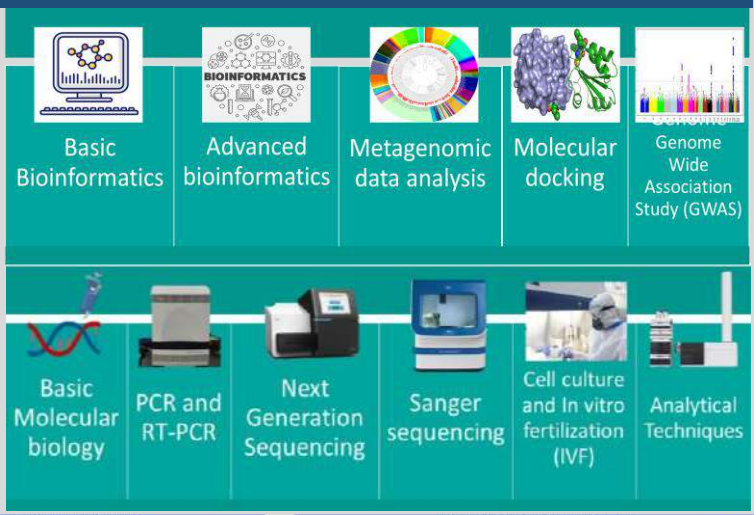
Department of Science & Technology (Government of Gujarat)

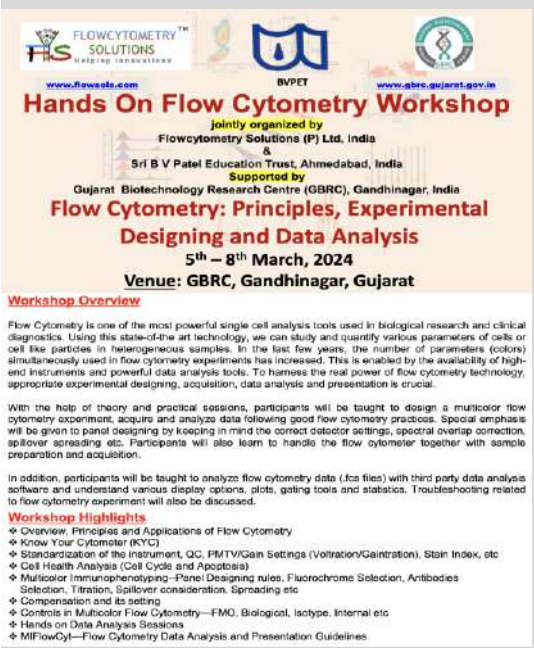
GBRC NEWS

Volume IV, Issue I
March 2024

KAUSHALYA TRAINING PROGRAM FOR SKILL DEVELOPMENT IN BIOTECHNOLOGY 2023-24

***KAUSHALYA (K**nowledge **A**dvancement **U**sing **S**kills **on H**igh-end **A**pplied **L**ifetechnolog**Y for A**spirants)* is an initiative by GBRC to help in developing biotechnological skills of the researchers, academicians and other stakeholders. The program's aim is to provide learners extensive and specialized practical knowledge for the development of their functional skill set in biotechnology and related fields. Total 12 trainings has been planned under the program on the different advance tools and technologies in the subject area of biotechnology.





UPCOMING TRAINING

CONTENTS

GBRC IN NEWS

ITRA inks pact with GBRC for research on ayurveda

Guj contributed 860 genome samples to 10k milestone

10,000 human genomes sequenced in India: Govt

ANONNA DUTT
NEW DELHI, FEBRUARY 27

THE GOVERNMENT'S ambitious Genome India initiative achieved a significant milestone Tuesday as researchers completed sequencing 10,000 healthy genomes from different regions of the country, representing 99 distinct populations. This accomplishment has culminated in the creation of a comprehensive genetic map of India, which holds immense potential for clinicians and researchers alike.

"Sequencing 10,000 genomes and creating an Indian repository is a big achievement. The first whole human genome sequence was announced in 2003. It was completed over 13 years at the cost of $3 billion. The technology has come a long way, allowing us to sequence thousands of genomes in a matter of

CONTINUED ON PAGE 2

પ્રથમ સંશોધન | પશુઓમાં થતાં માસ્ટાઇટિસને નાશ કરવા ડ્રગ વિકસાવી

क्लोन प्रौद्योगिकी में विशिष्ट उच्च उत्पादकता विकसित करने की आवश्यकता : डा . नागेंद्र

Clone quality dairy animals for increasing yield, say scientists

TRIBUNE NEWS SERVICE

KARNAL, MARCH 21

A research advisory committee (RAC) of the Indian Council of Agricultural Research (ICAR) led by chairman Dr Nagendra Sharma visited the ICAR-National Dairy Research Institute (NDRI) on Thursday and reviewed the research activities being carried out at the institute. ICAR-NDRI Director Dr Dheer Singh welcomed the delegation and presented a list of the research activities being undertaken at the institute. He highlighted the

Demand smart sensors for animals

RECENT PUBLICATIONS

HERBICIDE APPLICATION IMPACTED SOIL MICROBIAL COMMUNITY COMPOSITION AND BIOCHEMICAL PROPERTIES IN A FLOODED RICE FIELD

Authors: Laliteshwari Bhardwaj, Dinesh Kumar, Udai Singh, Chaitanya Joshi, Suresh Kumar Dubey

Journal: Science of the Total Environment

Impact factor: 9.8

In this research, the effect of two herbicides, pendimethalin and pretilachlor, on soil biochemical properties and microbial community composition was studied in a transplanted paddy field. Results reveal a gradual decline in herbicide residue up to 60 days after application. Changes in soil microbiological and biochemical properties (microbial biomass, enzymes, respiration, etc.) showed an inconsistent pattern across the treatments. Quantitative polymerase chain reaction analysis showed the archaeal, bacterial and fungal populations to be of higher order in control soil compared to the treated one. Amplicon sequencing (16S rRNA and ITS genes) exhibited that besides the unclassified genera, ammonia-oxidizing *Crenarchaeota* and the group represented by *Candidatus Nitrososphaera* were dominant in both the control and treated samples. Other archaeal genera viz. *Methanosarcina* and *Bathyarchaeia* showed a slight decrease in relative abundance of control (0.5 %) compared to the treated soil (0.7 %). Irrespective of treatments, the majority of bacterial genera comprised unclassified and uncultured species, accounting for >64–75 % in the control group and over 78.29 % in the treated samples. Members of *Vicinamibacteraceae*, *Bacillus* and *Bryobacter* were dominant in control samples. Dominant fungal genera belonging to unclassified groups comprised *Curvularia, Aspergillus*, and *Emericellopsis* in the control group, whereas *Paraphysoderma* and *Emericellopsis* in the herbicide-treated groups. Inconsistent response of soil properties and microbial community composition is evident from the present study, suggesting that the recommended dose of herbicides might not result in any significant change in microbial community composition. The findings of this investigation will help in the formulation of a framework for risk assessment and maintaining sustainable rice cultivation in herbicide- amended soils.

IN SILICO ANALYSIS UNRAVELS THE PROMISING ANTICARIOGENIC EFFICACY OF FATTY ACIDS AGAINST DENTAL CARIES CAUSING *STREPTOCOCCUS MUTANS*

Authors: Ravichellam Sangavi, Sankar Muthumanickam, Nambiraman Malligarjunan, Ravi Jothi, Pandi Boomi, Seenichamy Arivudainambi, Muthusamy Raman, Chaitanya Joshi, Shunmugiah Karutha Pandian, Shanmugaraj Gowrishankar

Journal: Journal of Biomolecular Structure and Dynamics

Impact factor: 4.4

Streptococcus mutans establishes dental caries either through sucrose-dependent (via glycosyltransferases) or through sucrose-independent (via surface adhesins Antigen I/II) mechanism. Sortase A (srtA) attaches virulence-associated adhesins to host tissues. Because of their importance in the formation of caries, targeting these proteins is decisive in the development of new anticariogenic drugs. High-throughput virtual screening with LIPID MAPS -a fatty acid database was performed and subjected to molecular dynamics simulation (MDs). The Binding Free Energy of complexes was predicted using MM/PBSA. Further, the drug-likeness and pharmacokinetic properties of ligands were also analyzed. Out of 46,200 FAs scrutinized virtually against the three protein targets top 5 FAs for each protein were identified as the best hit based on interaction energies viz., hydrogen bond numbers and hydrophobic interaction. Further, two common FAs (LMFA01050418 and LMFA01040045) that showed high binding affinity against Ag I/II and srtA were selected for MDs analysis. A 100ns MDs unveiled a stable conformation. Results of Rg signified that FAs does not induce significant structural & conformational changes. SASA indicated that the complexes maintain higher thermodynamic stability during MDs.

RECENT PUBLICATIONS

UNRAVELLING GENOMIC ORIGINS OF LUMPY SKIN DISEASE VIRUS IN RECENT OUTBREAKS

Authors: Priya Yadav, Ankeet Kumar, Sujith Nath, Geetha Shashidhar, Madhvi Joshi, Apurva Puvar, Sonal Sharma, Janvi Raval, Rameshchandra Pandit, Priyank Chavada, Sudheep Nagaraj, Yogesharadhya Revanaiah, Deepak Patil, S. Raval, Jigar Raval, Amit Kanani, Falguni Thakar, Naveen Kumar, Gundallhalli Bayyappa Manjunatha Reddy, Chaitanya Joshi, Baldev Raj Gulati, Utpal Tatu

Journal: BMC Genomics

Impact factor: 4.4

In this study the authors used Whole Genome Sequence (WGS) approach to investigate the origin of the outbreak and understand the genomic landscape of the Lumpy skin disease virus (LSDV) virus. The study showed that the LSDV strain of 2022 outbreak exhibited many genetic variations, compared to the reference Neethling strain sequence and the previous field strains from India. A total of 1819 variations were found in 22 genome sequences, which includes 399 extragenic mutations, 153 insertion frameshift mutations, 234 deletion frameshift mutations, 271 Single nucleotide polymorphisms (SNPs) and 762 silent SNPs. 38 genes have more than 2 variations per gene and these genes belong to viral-core protein, viral binding proteins, replication and RNA polymerase proteins. In this study the importance of several SNPs in various genes which may play an essential role in pathogenesis of LSDV have been highlighted. Phylogenetic analysis performed on all whole genome sequences of LSDV showed two types of variants in India. One group of the variant with fewer mutations was found to lie closer to the LSDV 2019 strain from Ranchi while the other group clustered with previous Russian outbreaks from 2015. Our study highlights the importance of genomic characterization of viral outbreaks to not only monitor the frequency of mutations but also address its role in pathogenesis of LSDV as the outbreak continues.

EVALUATION OF VIABILITY, HATCHING, AND APOPTOSIS OF SLOW FROZEN AND VITRIFIED *IN VITRO* PRODUCED BUFFALO EMBRYOS

Authors: J Prajapati, R Patel, A Sharma, D Jhala, V Suthar, M Joshi, D Patil, C Joshi

Journal: Reproduction, Fertility and Development

Impact factor: 1.9

In this study, the authors attempted to identify enterotypes from the microbiomes of 300 indigenous Kadaknath or 300 commercial Cobb400 chicken. The study was performed with objectives to (1) measure the cleavage rate of cumulus–oocyte complexes (COCs) recovered from ovaries procured from slaughterhouses; (2) to study the effect of slow freezing and verification on the re-expansion rate and hatching rate of in vitro-produced buffalo embryos; and (3) evaluate the apoptosis rate of frozen–thawed, and vitrified-warmed embryos. After 72 h of IVC, 63.1% (1015/1640) cleavage rate was observed, and on Day 6 after IVC, 20% (295/1640) blastocyst rate was observed. The re-expansion rates of frozen–thawed (n = 47) and vitrified-warmed BLs (n = 50) were observed at various hrs. The re-expansion rate at 2 h for frozen–thawed BLs was 74% (35/47), which was significantly lower than that of vitrified-warmed BLs (41/50 = 82%). Further, the total re-expansion rate of frozen–thawed BLs was 91.5% (43/47), which was significantly lower than for the vitrified-warmed BLs (48/50 = 96%). A significantly higher hatching rate was observed for BLs in the vitrified-warmed group (76%; 38/50) as compared to BLs in the frozen–thawed group (68.1%; 32/47). Results of the study indicate that BLs exposed to vitrification-warming had greater re-expansion and hatching rates and less DNA fragmentation as compared to BLs subjected to slow freezing indicating that vitrification is a more effective method than slow-freezing for cryopreservation of in vitro-produced buffalo embryos. Tests of differential abundance were used to identify significantly discriminant genera between enterotypes. Different groups are dominated by different microorganism. Network analysis showed that all three enterotypes consist of different proportions of competing Firmicutes-dominant and Bacteroides-dominant guilds. Random Forest Modelling using farm characteristics was able to predict enterotype, suggesting that enterotypes are influenced by farming practices and that modification of farming practices could be used to reduce Campylobacter burden.

RECENT PUBLICATIONS

A STUDY INTO THE DIVERSITY OF CORAL-ASSOCIATED BACTERIA USING CULTURE-DEPENDENT AND CULTURE-INDEPENDENT APPROACHES IN CORAL *DIPSASTRAEA FAVUS* FROM THE GULF OF KUTCH

Authors: Zarna Patel, Himanshu Joshi, Apurvasinh Puvar, Ramesh Pandit, Chaitanya Joshi, Madhvi Joshi, Devayani Tipre

Journal: Marine Pollution Bulletin

Impact factor: 5.8

Corals harbor ~25 % of the marine diversity referring to biodiversity hotspots in marine ecosystems. Global efforts to find ways to restore the coral reef ecosystem from various threats can be complemented by studying coral-associated bacteria. Coral-associated bacteria are vital components of overall coral wellbeing. We explored the bacterial diversity associated with coral *Dipsastraea favus* collected from the Gulf of Kutch, India, using both culture-dependent and metagenomic approaches. In both approaches, phylum Proteobacteria, Firmicutes, and Actinobacteria predominated, comprising the genera *Vibrio*, *Bacillus*, *Shewanella*, *Pseudoalteromonas*, *Exiguobacterium* and *Streptomyces*. Moreover, the majority of culturable isolates showed multiple antibiotic resistance index ≥0.2. In this study, specific bacterial diversity associated with coral sp. *D. favus* and its possible role in managing coral health was established. Almost 43 strains from the samples were successfully cultured, creating a base for exploring these microbes for their potential use in coral conservation methods.

UNTARGETED METABOLOMICS OF BUFFALO URINE REVEALS HYDRACYRLIC ACID, 3-BROMO-1-PROPANOL AND BENZYL SERINE AS POTENTIAL ESTRUS BIOMARKERS

Authors: Pooja Doshi, Chetana Bhalaiya, Vishal Suthar, Vikas Patidar, Chaitanya Joshi, Amrutlal Patel, Ishan Raval

Journal: Journal of Proteomics

Impact factor: 3.54

Buffalo is a silent heat animal and so it becomes difficult for farmers to determine the receptivity of the animal based purely on the animal behaviour. Successful artificial insemination greatly depends on the receptivity of the animal. Hence the present study aimed to identify the changes in the metabolome of the buffalo. GC–MS based mass spectrometric analysis was deployed for the determination of estrous by differential expression of metabolites. It was found that hydracrylic acid, 3-bromo-1-propanol and benzyl serine were significantly upregulated in the estrous phase of buffalo (p.value ≤0.05, FC ≥ 2). The pathway enrichment analysis also supported the same as pathways related to amino acid metabolism and fatty acid metabolism were up regulated along with the Warburg effect which is linked to the rapid cell proliferation which might help prepare animals to meet the energy requirement during the estrous. Further analysis of the metabolic biomarkers using ROC analysis also supported these three metabolites as probable biomarkers as they were identified with AUC values of 0.7 or greater. The present study focuses on the untargeted metabolomics studies of buffalo urine with special reference to the estrous phase of reproductive cycle. The estrous signals are more prominent in cattle, where animals show clear estrous signals, such as mounting and discharge along with vocal signals. Buffalo is a silent heat animal and it becomes difficult for farmers to detect the estrous based on the physical and behavioral signals. Hence the present study focuses on GC–MS based untargeted metabolomics to identify differentially expressed urine metabolites. In this study, hydracrylic acid, 3-bromo-1-propanol and benzyl serine were found to be significantly upregulated in the estrous phase of buffalo (p-value ≤0.05, FC ≥ 2). Receiver operating characteristics (ROC) analysis also supported these three metabolites as probable biomarkers as they had AUC values of 0.7 or greater. Hence, this study will be of prime importance for the people working in the area of animal metabolomics.

RECENT PUBLICATIONS

CLONING AND CHARACTERIZATION OF FMN DEPENDENT AZOREDUCTASES FROM TEXTILE INDUSTRY EFFLUENT IDENTIFIED THROUGH METAGENOMIC SEQUENCING

Authors: Roshani Mishra, Akhilesh Modi, Ramesh Pandit, Jyoti Sadhwani, Chaitanya Joshi, Amrutlal Patel
Journal: Journal of the Air & Waste Management Association
Impact factor: 2.7

Azo dyes, when released untreated in the environment, cause detrimental effects on flora and fauna. Azoreductases are enzymes capable of cleaving commercially used azo dyes, sometimes in less toxic by-products which can be further degraded via synergistic microbial co-metabolism. In this study, azoreductases encoded by FMN1 and FMN2 genes were screened from metagenome shotgun sequences generated from the samples of textile dye industries' effluents, cloned, expressed, and evaluated for its azo dye decolorization efficacy. At pH 7 and 45°C temperature, both recombinant enzymes, FMN1 and FMN2 were able to decolorize methyl red at 20 and 100ppm concentrations, respectively. FMN2 was found to be more efficient in decolorization/degradation of methyl red than FMN1. This study offers valuable insights into possible application of azoreductases to reduce the environmental damage caused by azo dyes, with the hope of contributing to sustainable and eco-friendly practices for the environment management. This enzymatic approach offers a promising solution for the bioremediation of textile industrial effluents. However, the study acknowledges the need for further process optimization to enhance the efficacy of these enzymes in large-scale applications.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

INVITED TALKS DELIVERED BY GBRC TEAM

- Dr. Apurvasinh Puvar, Scientist-B delivered a talk on "Introduction to Linux-based bioinformatics tools for NGS data analysis" on in ICAR sponsored hands-on training on "DNA Sequencing using Ion Torrent NGS Platform and Data Analysis" at the Central NGS Facility of CIFE, Mumbai on 31st January, 2024.
- Dr. Darshan Dharajiya, Scientist-B delivered a lecture on "Transgenic Plants: Methods and Applications" at the GSBTM-sponsored UG BT-CBC Crash Workshop - 2024 organized by Ganpat University - Mehsana Urban Institute of Sciences, Mehsana on 28th January, 2024.
- Dr. Amrutlal K Patel, Scientist D & Joint Director delivered a lecture on "The Hidden Danger of Canine Distemper Virus in Lions; Symptoms, Diagnosis and Prevention Strategies" at The International Symposium on Animal Viruses, Vaccines and Immunity (AVVI 2024) held at Siksha 'O' Anusandhan (Deemed to be University) (SOADU), Shyampur, Bhubaneswar on 11th February, 2024.
- Dr. Madhvi Joshi, Scientist D & Joint Director invited as eminent speaker in National Conference on Environmental Microbiology and Regulatory Aspects organized by Atmiya University & Shri M. N. Virani Science College, Rajkot on 23rd – 24th February, 2024.
- Dr. Haidar Abbas, Scientist-B visited Smt. S. S. Nootan Science & Commerce College, Visnagar on 13th February, 2024, where he engaged with students and faculty members from various departments, delivering a talk on the orientation of the Shared Lab facility at GBRC. During the session, students actively interacted with Dr. Haidar Abbas, discussing the workflow of shared lab facilities, including the process of creating accounts on the portal and exploring the different facilities available at GBRC.
- Prof. Chaitanya Joshi, Director delivered a talk on the work conducted by GBRC in rumen microbiome using metagenomics and meta-transcriptomics approach in a brainstorming session on "Unraveling the Rumen Microbiome for Sustainable Ruminant Production: Past, Present, and Future" at ICAR- National Research Centre on Camel, Bikaner on 12th March, 2024.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

INVITED TALKS DELIVERED BY GBRC TEAM

- Dr. Amrutlal Patel, Scientist D & Joint Director delivered a lecture on “Genome Editing by CRISPR-Cas9” at the Post Graduate Department of Biosciences, Sardar Patel University, Anand on 7th March, 2024.
- Dr. Ishan Raval, Scientist B delivered a lecture on “Introduction to various tools for molecular docking” at the GSBTM-sponsored National workshop on Hands-on training on Advanced Molecular Biology, Bioinformatics and Nanotechnology (AMBIENT) held at Parul University, Vadodara on 23rd March, 2024.

Prof. Chaitanya Joshi, Director delivered a talk at ICAR- National Research Centre on Camel, Bikaner

MOU’s

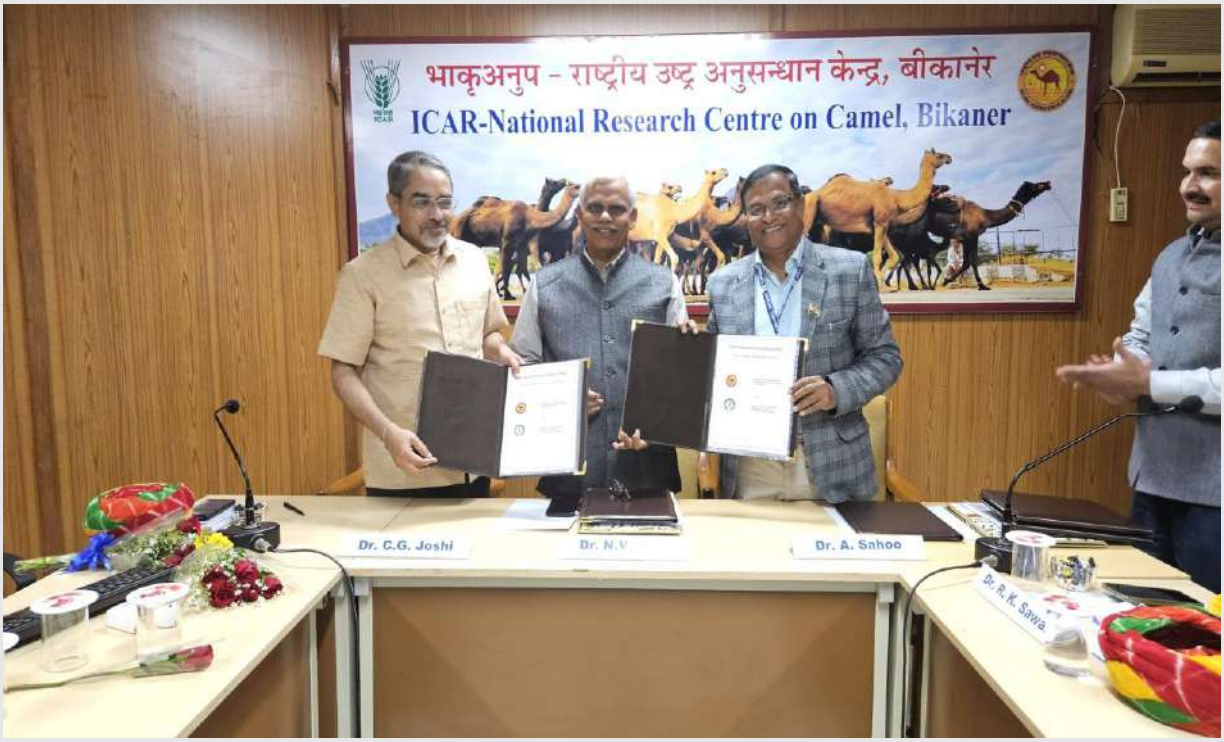
Gujarat Biotechnology Research Centre signed a MoU with Silver Oak University on 3rd January, 2024, solidifying their commitment to collaboration in the areas of research, education, and awareness. MoU includes joint research proposals, student supervision for higher degrees, expanding infrastructure, and flexible modes of interaction.

Gujarat Biotechnology Research Centre assigned MoU with Biotech Consortium India Limited., New Delhi on 18th January, 2024. BCIL and GBRC agree to take all necessary steps required for effective transfer of Intellectual Properties (Ips)/Technologies developed at GBRC and capacity building of the scientists and research staff.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

MOU's

Gujarat Biotechnology Research Centre signed an MoU with ICAR- National Research Centre on Camel (NRCC), Bikaner and Maharashtra Animal & Fishery Sciences University (MAFSU) on 12th March, 2024. This collaboration aims to enhance mutual research activities.



Gujarat Biotechnology Research Centre and GCS Medical College, Hospital & Research Centre, Ahmedabad signed an MoU on 15th March, 2024. MoU is intended to foster collaboration in research and education.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

VIBRANT GUJARAT

The 10th edition of the Vibrant Gujarat Global Summit took place at the Mahatma Mandir Convention and Exhibition Center in Gandhinagar from January 10th to 12th, 2024. The summit served as a pivotal platform for investment and business collaboration, aligning with India's national aspirations to propel Gujarat towards self-reliance and resilience. Convened by the Government of Gujarat under the esteemed guidance of Prime Minister Narendra Modi and Chief Minister Bhupendra Patel, the event attracted a distinguished gathering of international dignitaries, investors, entrepreneurs, and industry leaders. As part of the summit activities, GBRC staff had participated as liaison officers in various seminars.

WORKSHOP ON ENVIRONMENTAL SURVEILLANCE FOR ONE HEALTH

Gujarat Biotechnology Research Centre (GBRC) hosted a workshop on "Environmental Surveillance for One Health" at IIT Gandhinagar in Collaboration with Principal Scientific Adviser to Government of India and National One Health Mission on 16th January, 2024. Dignitaries from diverse institutions joined to discuss and strategize the enhancement of surveillance for a unified approach towards the One Health Mission.

PRE CONFERENCE WORKSHOP AT ISHG2024

Three days Hands-on Training Program on "Identification and Interpretation of Germline and Somatic Variant Data using GATK" under 48th Annual Meeting and International Conference of the Indian Society of Human Genetics 2024 (ISHG2024) was organized at IIT Gandhinagar from 18th to 20th January, 2024. Total 29 participants from all over India participated in the hands-on training workshop. Three faculties (Dr. Ricky Magner, Ms. Megan Shand and Mr. Michael Gatzen) were invited from MIT Broad Institute for the program.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

ONE HEALTH POULTRY HUB: HUB MEETING

UKRI-GCRF One Health Poultry Hub: Final Hub Meeting held at New Delhi on 7th- 9th February, 2024. The One Health Poultry Hub held its final meeting, where researchers emphasized the significance of a One Health approach, integrating animal, human, and environmental health with the objective to inform policy and interventions to enhance health for people, animals, and the environment. Prof. Chaitanya Joshi served as a moderator in sessions related to host-pathogen dynamics. His activities could include leading discussions, guiding breakout groups, and ensuring active participation from attendees. Dr. Madhvi Joshi played role of a facilitator in sessions focusing on Foodborne Zoonotic Risk from Poultry – How Significant is This? She involved in summarizing key points, capturing insights from discussions, and contributing to the development of future priorities in these critical areas. GBRC fellows participated in both oral and poster presentations. GBRC fellows have presented their work.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

GENOME INDIA FLAGSHIP PROGRAMME

Union Minister of State for Science & Technology, Dr. Jitendra Singh, emphasized the importance of India's Bio-Economy and Space Economy in driving future growth during his address in New Delhi on 27th February, 2024. He highlighted India's substantial economic growth rate and announced the GenomeIndia Flagship Programme, which aims to sequence 10,000 genomes to advance genetic-based remedies and strengthen India's healthcare system. The project aims to create a reference genome for the Indian population, leveraging the diverse genetic variations present in India. The GenomeIndia Project, a collaboration among 20 national institutes, for initiatives like the creation of a biobank and data archiving. GBRC is one of the lead partner institute .

SCIENCE CARNIVAL 2024

The Gujarat Council of Science City (GCSC) held a five-day Science Carnival 2024 from 28th February - 3rd March, 2024. The theme of the carnival was "Indigenous Technologies for Viksit Bharat" (Indigenous Technologies for Developed India). The event aimed to promote and showcase homegrown technologies by featuring a scientific exhibition with participation from around 68 scientific institutions and organizations. This exhibition was open to students, teachers, and the general public. The Science Carnival took place across various locations within the Gujarat Science City complex, offering a diverse and engaging experience for visitors. The Gujarat Biotechnology Research Centre (GBRC) participated in the Science Carnival 2024 through a stall exhibition held at the Gujarat Science City, Ahmedabad, from 28th February - 3rd March, 2024.

OUTREACH, COLLABORATION, AND KNOWLEDGE DISSEMINATION

GLOWACON (The Global Consortium for Wastewater and Environmental Surveillance for Public Health)

The Health Emergency Response Authority (HERA), in collaboration with the European Commission's Joint Research Centre (JRC), launched GLOWACON, a global initiative for an early warning system on public health threats. The inaugural event, held in Brussels on 19th -20th March, 2024, attracted over 300 participants, including representatives from the World Health Organization (WHO), the Bill and Melinda Gates Foundation, and national health ministries. Discussions centered on integrating wastewater surveillance into public health systems. GLOWACON aims to be a platform fostering collaboration, innovation, and funding in this area. This global effort is seen as a critical step towards improved pandemic preparedness. Notably, Dr. Madhvi Joshi, Scientist D & Joint Director, virtually presented a concept paper on research and development for wastewater and environmental surveillance during GLOWACON's launch on 20th March, 2024.

GUJARAT VIGYAN SAMMELAN (GVS 2024)

The Science Fair - VIGYAN GURJARI took place at Shree Amrutlal Veerpal Parekh Technical Institute (AVPTI), Rajkot from 22nd - 24th March, 2024, featured impressive science projects from all grade levels, showcasing the work of bright young scientists. The event, under the patronage of Prof. Nilambari R. Dave, Dr. Chaitanya Joshi, and Dr. Paresh Kotak, involved an advisory committee comprising distinguished individuals and an exhibition committee responsible for the setup. The local organizing committee included professors, doctors, and professionals, ensuring a well-organized and engaging scientific exhibition. The Gujarat Biotechnology Research Centre (GBRC) participated in the Gujarat Vigyan Sammelan 2024 through a stall exhibition held at AVPTI, Rajkot from 22nd - 24th March, 2024.

CONFERENCES

INDIAN SOCIETY OF HUMAN GENETICS (ISHG 2024)

The 48th Annual Meeting and International Conference of the Indian Society of Human Genetics (ISHG 2024) was held during 21st-24th January, 2024 at Ahmedabad Management Association Complex, Ahmedabad. The Indian Society of Human Genetics (ISHG) 2024 conference was organized in collaboration with the Foundation for Research in Genetics and Endocrinology (FRIGE)-Institute of Human Genetics, Ahmedabad, under the aegis of the Indian Society of Human Genetics along with GBRC. Scientists and fellows from GBRC volunteered in the conference for various workshops, plenary sessions, concurrent sessions, poster presentation and DST stall exhibition.

PRABODH

GBRC is conducting "PRABODH" (Promoting Research Awareness in Biotechnology for Development of Human Resource) to accelerate the research work and to develop research-oriented thought processes in staff.

JANUARY-2024

INVITED GUESTS

Prof. John Burn,

Institute of Genetic Medicine,

International Center for Life,

Newcastle University, England

Topic: How should we deliver genomic testing-remote or at the point of need

PRESENTATIONS FROM GBRC MEMBERS

Article: Selection of a de novo gene that can promote survival of Escherichia coli by modulating protein homeostasis pathways.

Journal Name: Nature Ecology and Evolution

Impact Factor: 19.1

Dr. Vamsi Satyavolu
Technical Assistant

FEBRUARY-2024

INVITED GUESTS

Dr. Shahaj Uddin Ahmed,

Scientist-F, Department of Biotechnology,

India

Topic: DBT- Promoting Biotechnology for Building an Innovative Nation

PRESENTATIONS FROM GBRC MEMBERS

Article: Gut microbiota-derived metabolites mediate the neuroprotective effect of melatonin in cognitive impairment induced by sleep deprivation

Journal Name: Microbiome BMC journal

Impact Factor: 16.837

Ms. Shreya Johnson
Junior Research Fellow

INVITED GUESTS

Dr. Shiv Prasad Kimothi,

Member, Agricultural Scientists Recruitment Board (ASRB)

Topic: Current Scenario of Agricultural Sector Development in the Country and the Roadmap for Future

PRESENTATIONS FROM GBRC MEMBERS

Article: Bispecific dendritic-T cell engager potentiates anti-tumor immunity

Journal Name: Cell

Impact Factor: 66.85

Dr. Anubhav Tamrakar
Research Associate

GBRC NEW BUILDING GROUND BREAKING CEREMONY

The ground breaking ceremony of the main building of GBRC was conducted in the august presence of Ms. Mona K. Khandhar, IAS, Principal Secretary, DST, GoG and heads of various institutions on 7th March, 2024.

ARRIVAL & DEPARTURE

GBRC would like to extend a hearty welcome of the new members to family

Dr. Priyanka Joshi
Dr. Vartika Srivastava
Mrs. Brindangnanam Pownraj
Mr. Akshay Dangari
Mr. Suhas Karle
Dr. Shrikant Khandare
Mr. Maharshi Patel
Ms. Nandni Vasa
Ms. Nikita Patil
Mr. Harshal Purohit
Mr. Priyank Joshi
Mr. Raviraj Barot
Ms. Tanvi Bhatt
Ms. Vrunda Bhavsar
Ms. Aerika Patel
Mr. Harshil Patel
Mr. Dhruvkumar Patel
Ms. Pratixa Sevra

GBRC wishes best for the future of the bright minds who had left

Dr. Vemula Harshini
Ms. Zeba Jiwakhan
Ms. Jyoti Sadhwani
Mr. Hardik Patni
Mr. Raghav Worah
Mr. Mitul Mali
Ms. Priyal Visavadiya
Mr. Manish Gupta
Ms. Twinkle Patel
Ms. Sudipta Mahapatra

STAFF WELFARE CLUB ACTIVITIES

The main objective of the Staff Welfare Club is to establish, promote, subsidize, encourage, provide, maintain, organize, undertake, manage, equip, develop, recondition, operate, conduct and to run for in the music, dance, sports, social welfare, carry out scientific and technical, other than political activities.

JANUARY-2024

BEST MONTHLY PRESENTATION AWARD

Ms. Priyanka Nagal
JRF

AWARD FOR BEST QUESTION IN PRABODH

Ms. Dixsha Jamkhandi
JRF

AWARD FOR BEST QUESTION IN PRABODH

Dr. Khyati Bhardwaj
RA

EMPLOYEE OF THE MONTH AWARD

Ms. Priyanka Panwar
JRF

BEST CUBICLE AWARD

Fermentation Laboratory

FEBRUARY-2024

BEST MONTHLY PRESENTATION AWARD

Dr. Pankaj Parab
RA

AWARD FOR BEST QUESTION IN PRABODH

Ms. Meha Bhatt
SRF

EMPLOYEE OF THE MONTH AWARD

Mr. Tejas Shah
RA

BEST CUBICLE AWARD

Bioinformatics Laboratory

STAFF WELFARE CLUB ACTIVITIES

MARCH-2024

BEST MONTHLY PRESENTATION AWARD

Dr. Anupam Kumari
RA

AWARD FOR BEST QUESTION IN PRABODH

Ms. Purva Gohil
SRF

EMPLOYEE OF THE MONTH AWARD

Ms. Chetana Bhalaiya
TA

BEST CUBICLE AWARD

Electrophoresis Laboratory

MONTHLY EVALUATION ACTIVITY

GBRC has internal evaluation system of the project progress where all the fellows present their work for the month and their performances are also evaluated in front of external expert.

JANUARY-2024

Dr. Shruti Chetterjee
Assistant Professor,
Nirma University,
Ahmedabad

FEBRUARY-2024

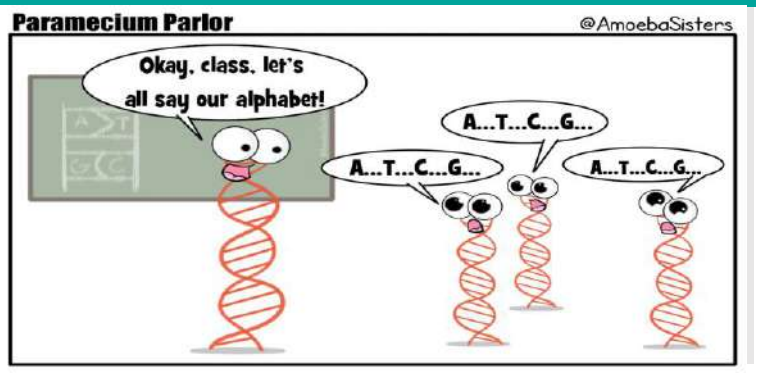
Dr. Mukesh Dhanka,
Assistant Professor,
Indian Institute of Technology,
Gandhinagar

MARCH-2024

Dr. Budhi Sagar Tiwari
Professor, Institute of Advanced Research & University for Innovation,
Gandhinagar

LIGHTER NOTES

'I like to recreate their natural environment'



VISIT BY DIGNITARIES

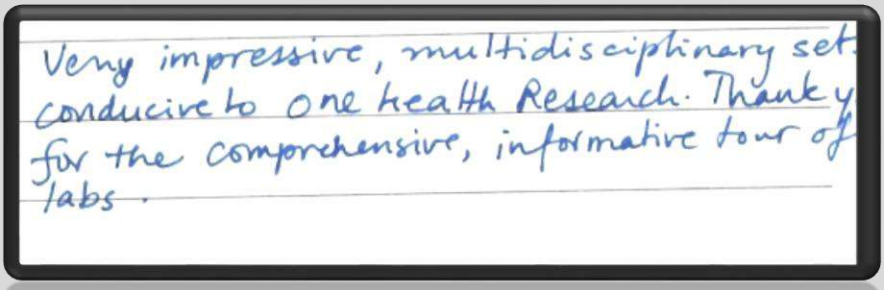
Dr. Jamil Talukder, Director (R&D), R&D LifeSciences, LLC, visited GBRC

Mr. Vivek Raguraman, First Secretary (Economic) of Singapore High Commission India, New Delhi, Ms. Veronike Ban, Ministry of Trade & Industry, Singapore and Mr. Wong Wei Kang, Enterprise Singapore at GBRC

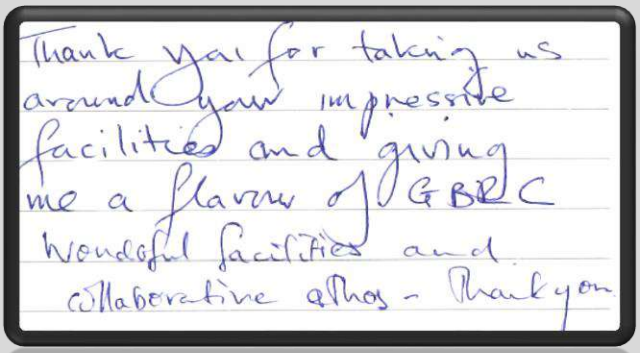
Dr. Ricky Magner, Ms. Megan Shand and Mr. Michael Gatzen from Broad Institute of MIT and Harvard visited GBRC

VISIT BY DIGNITARIES

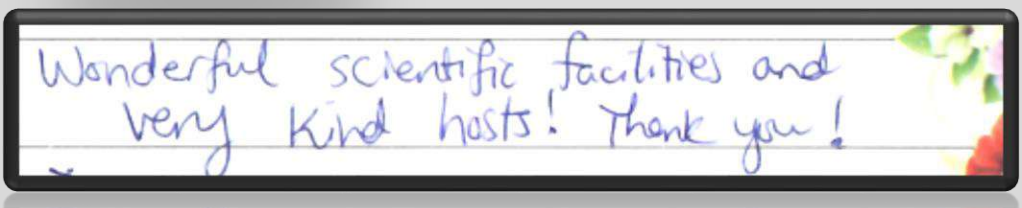
Dr. Varsha Potdar, Scientist E, Dr. Satish Gaikwad, Scientist and Bioinformatics team from ICMR-NIV, Pune visited GBRC



Dr. Supriya Kumar,
Senior Program Officer,
Bill & Melinda Gates Foundation, Seattle



Prof. David Leach,
Professor,
University of Edinburgh



Dr. Ricky Magner,
Computational Scientist,
Broad Institute,
Massachusetts, US

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members from the Department of Biotechnology, School of Energy Technology, Pandit Deendayal Energy University, Gandhinagar

Students and faculty members from the Faculty of Pharmacy, Parul University, Vadodara

Students and faculty members from College of Horticulture and Forestry, Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Solan

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members from Department of Applied and Interdisciplinary Sciences, Indukaka Ipcowala Center for Interdisciplinary Studies in Science and technology, Sardar Patel University, Gujarat

Students and faculty members the ASPEE Shakilam Biotechnology Institute, Navsari Agricultural University, Navsari

Students and faculty members from School of Medico-Legal Studies, National Forensic Sciences University, Gandhinagar

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members from Department of Maktabah Jafariyah College of Science, Sidhpur

Students and faculty members from Swarrnim Science College, Swarrnim Startup & Innovation University, Gandhinagar

Students and faculty members from BRD School of Biosciences, Sardar Patel University, VVN

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members Gogate Jogalekar College, University of Mumbai, Mumbai

Students and faculty members Department of Science, Gyanmanjari Innovative University - GMIU, Bhavnagar

Students and faculty members from the Natubhai V. Patel College of Pure & Applied Sciences, CVM University, VVN

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members Department of Life Sciences, Parul Institute of Applied Sciences, Parul University, Vadodara

Students and faculty members Department of Science, Gyanmanjari Innovative University - GMIU, Bhavnagar

Students and faculty members from the members from the Institute of Biotechnology, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-Jammu), Jammu and Kashmir

VISIT BY COLLEGE/ ACADEMIC INSTITUTES

Students and faculty members from the Department of Biosciences, Veer Narmad South Gujarat University, Surat

Students and faculty members member from Food Technology and Nanotechnology, National Forensic Sciences University, Gandhinagar

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For Shared Lab Facility : https://gbrc.org.in/

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Joint-Director – GBRC

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GUJARAT BIOTECHNOLOGY RESEARCH CENTRE

DEPARTMENT OF SCIENCE & TECHNOLOGY

GOVERNMENT OF GUJARAT

ANNOUNCES

Shared LAB

Online System

- NGS Illumina NovaSeq 6000
- NGS Illumina MiSeq
- NGS Ion S5 & S5 Plus
- NGS IonChef
- BD Flow Cytometer & Cell sorter
- Capillary ABI 3500 Sequencer
- PCR + Gel Doc
- Nanodrop, Qubit
- Lyophilizer
- HPLC
- GC-MS (Clarus 680/Clarus SQ8C)
- LC-MS
- Digital PCR
- Real time PCR machine
- HPC Server & Param Shavak Server for Bioinformatics (with CLC Genomics)

GBRC shared lab online booking system:

https://gbrc.org.in