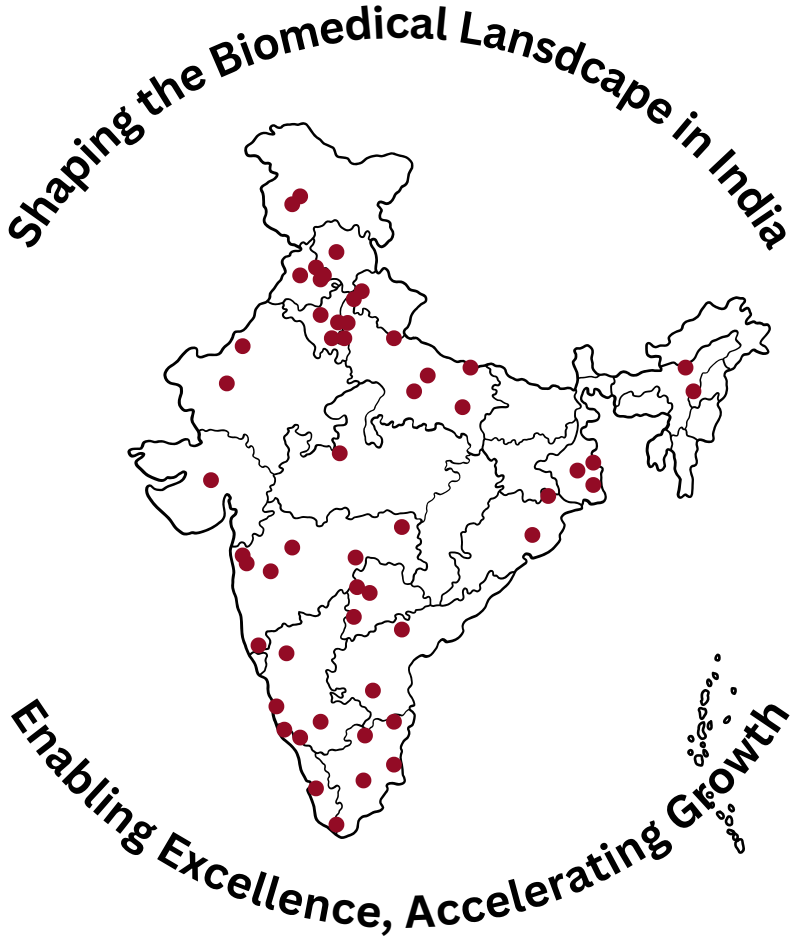
IndiaAlliance
DBT wellcome

2024–25

ANNUAL REPORT



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NOTE FROM SECRETARY, DEPARTMENT OF BIOTECHNOLOGY, GOI

Rajesh Gokhale

Secretary, DBT, Govt. of India

The Department of Biotechnology (DBT) stands at the forefront of India's efforts to drive innovation-led research and entrepreneurship, serving as a catalyst for sustainable growth in the bioeconomy. DBT has consistently championed scientific progress by nurturing a highly skilled research workforce and fostering an ecosystem that values curiosity-driven discovery while addressing critical national and global challenges through strategic, science-based solutions.

With an unwavering commitment to scientific excellence, innovation, and capacity building, DBT ensures the highest standards of research rigour and ethical integrity. Its work continues to deliver meaningful societal impact, transforming knowledge into tangible outcomes.

DBT's vision is rooted in the creation of a vibrant, inclusive, and ethically grounded research environment—one that sparks discovery, enables collaboration, and builds enduring capacity. This vision is clearly reflected in the achievements highlighted in this annual report, showcasing the scope and diversity of research across more than 200 DBT-WT India Alliance-funded programmes. The contributions of individual Fellows, the strength of expanding collaborative networks, and robust institutional partnerships have together resulted in world-class scientific output, significant training opportunities for early-career researchers and students, and recognition on both national and international platforms.

The enduring partnership with the Wellcome Trust, UK, exemplifies the impact of sustained, purpose-driven collaboration. It has not only accelerated biomedical research in India but also demonstrated the transformative potential of global partnerships grounded in shared values.

Together, we continue to look ahead—guided by a common belief in the power of science to improve lives and shape a healthier, more equitable future.

NOTE FROM CEO, WELLCOME, UK

John-Arne Røttingen

CEO, Wellcome, UK

Wellcome is committed to supporting science that addresses urgent global health challenges. We believe that impactful science thrives through collaboration, and our partnership with the Department of Biotechnology, India in supporting the India Alliance, exemplifies this.

Over the past year, the India Alliance has made remarkable progress in advancing biomedical research and nurturing scientific talent across India.

These efforts contribute to shaping a research ecosystem grounded in excellence, equity, and innovation across disciplines and regions. With over 200 programmes supported across 75–80 institutions - including research institutes, universities, hospitals, private foundations, and NGOs - the India Alliance exemplifies a commitment to inclusivity and the shared belief between Wellcome and the Department of Biotechnology in the transformative power of science. Fellows have produced more than 350 publications, with many featured in leading international journals.

This national and global reach highlights the depth, diversity, and impact of the research supported by the India Alliance. India Alliance Fellows and Teams advance scientific knowledge and building robust research training environments.

This year more than 1,500 PhD and master's students receiving training in India Alliance supported laboratories. Thirteen Fellows have transitioned to independent positions, an indicator of the programme's role in nurturing leadership and scientific independence.

I have enjoyed learning more about India Alliance awardees through the 'Stories of Science" series and thematic articles. Thanks also to the inspiring women scientists featured through the Special Series 'Breaking Barriers: Women in Science Leading the Way'. Your work as research leaders, mentors, and role models will inspire new generations of women in science. My congratulations to you all.

Seeing Fellows transition to independent positions, alongside others being recognised with the inaugural Rashtriya Puraskar awards and the prestigious Infosys Prize in Life Sciences underscore the calibre of talent India Alliance is supporting.

Looking ahead, India Alliance is poised to enter its next phase with renewed purpose. We remain committed to fostering a robust, inclusive, and globally connected research ecosystem. To our Fellows, partners, and stakeholders - thank you for your trust and collaboration and for continuing to shape the future of science in India and beyond.

NOTE FROM DBT/WT INDIA ALLIANCE

Apurva Sarin

CEO, DBT/WT India Alliance

The Arc of Possibility: Resilience and Focus through a Measured Pause

The pause in competitions in the past year called for focus and patience, while also offering unexpected opportunities for reflection and renewal. India Alliance chose to recalibrate with care, ensuring that our foundational commitments were not only maintained but strengthened. Core responsibilities were carried out with diligence and clarity, with significant attention given to refining internal processes to improve responsiveness and the quality of engagement. These efforts have laid a stronger foundation from which we can re-engage more dynamically when conditions allow.

None of this would have been possible without the commitment of the team at India Alliance. Their steadfastness ensured that our support to the research community remained uninterrupted, and that our shared vision was upheld with integrity and care.

As always, the momentum within our vibrant research community has not waned. Over 200 active programmes continued to push the boundaries of knowledge across disciplines. Our Grantees have remained on the path of creativity and leadership, not only through publications, prestigious awards, and recognition from peers, but also through he quieter, equally essential work of training students, mentoring early-career researchers, energising interns and engaging meaningfully with the public in diverse forums. We hope you'll enjoy reading about some of these in this Annual Report. Whether through cutting-edge research, outreach, or interdisciplinary collaboration, India Alliance awardees continue to help shape a research culture grounded in curiosity, care, and responsibility.

We deeply value the ongoing engagement of our funders, governance and advisory groups, and acknowledge in particular the steadfast support of officers at the Major International Programmes, WT and the Global Innovation Directorate, DBT. Their responsiveness and engagement are highly appreciated. We extend our sincere thanks to the India Alliance selection committees. Their continued backing has been vital for both building the contours of this programme and sustaining momentum.

For many in the research community who are passionate about launching and advancing careers in India, this has been a year of waiting. It is also a moment to reaffirm our shared responsibility to nurture continuity and create opportunity. We look forward to continue working together, rooted in the belief that science is a collective endeavour, shaped by many hands and steady purpose.

REPORT FROM GRANTS, DBT/WT INDIA ALLIANCE

Dipanwita Sengupta

Grants Manager, DBT/WT India Alliance

The Grants team at India Alliance (IA) has handled 249 Fellowships, 31 TSG CRC, 26 IRMI and 40 CRTP grantees during 2024-25. This included recently activated awards as well as grants that were in their second to last year. The team has remained continuously engaged with the grantees to ensure that the best possible solution is arrived at with any post-award request. The team handled 61 requests for extension of grant period and 6 requests for transfer of Host Institution.

The year started with receiving a large number of Annual Progress Reports, coordinating detailed reviews, and organizing the IA Annual Conclave 2024. This Conclave was an excellent platform that allowed Mid Term Review of all grants with written feedback provided based on the reviews, as also providing a networking opportunity to all attendees.

With no competitions to run in this year, the team utilized the time to review and streamline end to end processes. We went through an audit organized by our funder that helped further refine our practices to adapt to the best global standards. We have streamlined the formats for requests-for-extensions, annual progress reports, end-of-grant reports and channelized efforts to improve programme documents and application forms. These should eventually support the applicants and the reviewers in the future.

Experience from the last 15 years of IA activities and the stored grants data has supported the external reviews commissioned by our funders and informed reports that are supplied periodically. We have also prepared ourselves for adapting to changes in the Grants Management System.

2024-25 saw closure of a large number of grants, many being from the Phase I of India Alliance. As we bid goodbye to past Fellows - who continue to be part of the IA network even though their grants have come to a close - we ensured that Final Reports were collected, to document the outcome of the Grants that were running in the past 5-6 years.

REPORT FROM FINANCE, DBT/WT INDIA ALLIANCE

Nataraj Bollam

Finance Manager, DBT/WT India Alliance

Overview & Fund Utilisation

In the Financial Year 2024–25, India Alliance continued to support 313 Fellows, and Grantees across different programmes. Operational expenses were contained at 4% of total expenditure, well within the approved limit and aligned with long-term sustainability goals. The finance team oversaw the closure of 85 projects, 32 project extensions, and 4 Host Institution transfers.

Compliance, Governance & Audit

India Alliance fully complied with all statutory requirements, including the Income Tax Act, FCRA, Provident Fund, Professional Tax, and other applicable regulations. Financial statements for FY 2023–24 were completed as per requirements in were prepared in three parts: Receipts and Payments Account (cash basis); Income and Expenditure Account (accrual basis); Balance Sheet (year-end position).

Independent auditors, Somanchi & Co., provided an unqualified audit opinion, confirming fairness, accuracy, and statutory compliance of the financials.

In FY 2024–25, the external audit conducted by Wellcome Trust through KPMG, along with internal, statutory, and ISO audits, were successfully completed. Governance protocols were diligently followed in fund disbursements and financial reporting.

Key Activities & Acknowledgements

The Finance and Audit Committee (FAC) met regularly to review financial reports prepared on an accrual basis for both UK and India operations and addressed key financial matters. The finance team provided timely updates to support stakeholder decision-making. Expenditures related to fellowship and grant payments, the Annual Conclave, and other key events were efficiently processed.

We sincerely thank our funding partners, stakeholders, and regulatory authorities for their continued trust and support in upholding the financial integrity and sustainability of India Alliance activities

IA AT A GLANCE

India Alliance continues to build on its enduring commitment to strengthening the research ecosystem in India. Over the past year, it has provided broad-based support, advancing the work of researchers, enhancing institutional capacity, and enabling impactful scientific collaborations across disciplines and geographies.

DBT/WT India Alliance at a Glance

The DBT/Wellcome Trust India Alliance (India Alliance) is a Cabinet approved, co-funded partnership between the Department of Biotechnology, Govt of India and the Wellcome Trust, UK, established in 2009 for the implementation of the Biomedical Research Career Programme.

India Alliance supports high-quality biomedical research across career stages, disciplines, and institutions. Through fellowships, collaborative grants, and strategic initiatives, it aims to advance science, strengthen research capacity, and build a vibrant, inclusive ecosystem for health research in India.

280
Grants & Fellowships

390
Publications

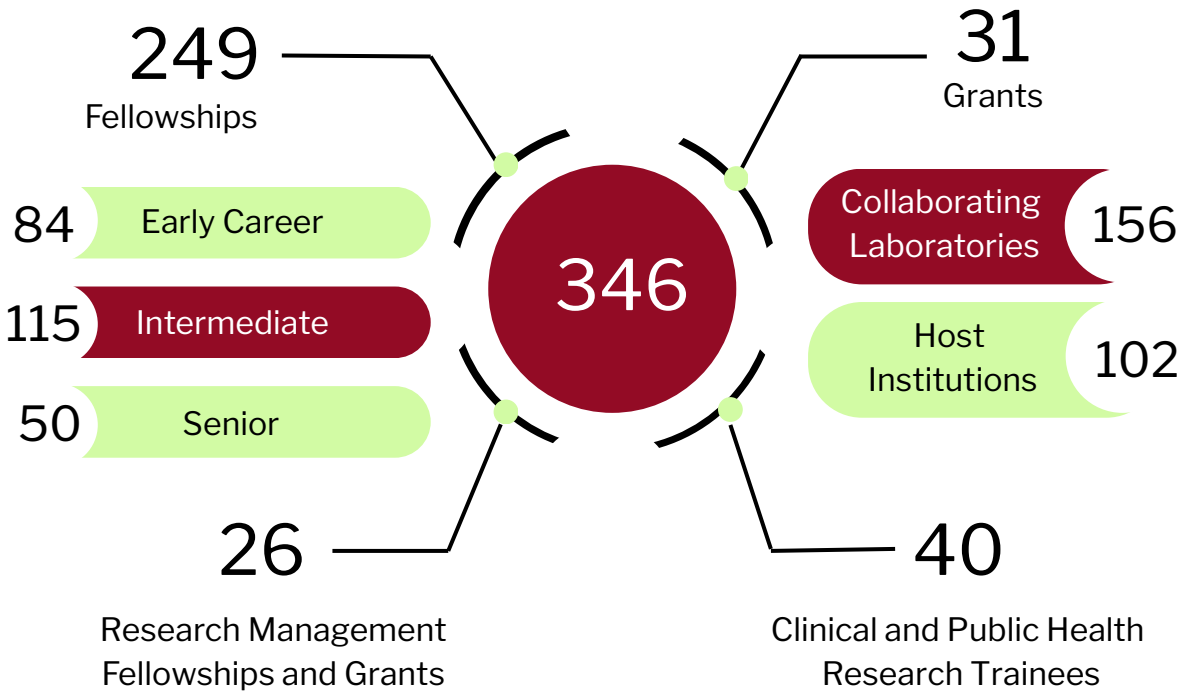
06
Patents Filed

25+
Awards & Recognitions

1596
Students and Postdocs trained

55+
Public engagement through media coverage and websites

Active Fellowships & Grants: 2024-2025



IA's Impact Beyond Grants

Beyond the support offered through various fellowships and grants, India Alliance funding has played a significant role in shaping the research journeys of over 1500 doctoral students and Postdocs in IA-supported labs, just in the past year alone. In addition, more than 1000 undergraduate interns from across the country have had, in many cases, their very first hands-on experience with research in these labs. We hope that these early glimpses into the world of science spark curiosity and inspire many of them to pursue careers in research. In addition to their research activities, IA grantees have actively engaged with the wider community, interacting with school students and the general public, as well as contributing to policy development across the country. These efforts reflect a deep commitment to public engagement and knowledge sharing, highlighting their role not just as researchers, but as catalysts for societal impact and informed policy dialogue. By sharing their work and experiences beyond the lab and field, our grantees help foster dialogue across communities and nurture a broader appreciation for science in everyday life.

PUBLICATIONS

Reflecting the rigour, relevance, and growing impact of India Alliance–supported research, Grantees published over 467 original research articles and reviews in the past year, with several available as Open Access. Here, we present a selection of these.

PUBLICATIONS HIGHLIGHTS

Kamlesh Pawar
5'-tRNA$_{HisGUG}$ fragment: A preferred endogenous TLR7 ligand with reverse sequence activation insights

Lipi Thukral
Multiscale simulations reveal architecture of NOTCH protein and ligand specific features

Anupama Sathyamurthy
The superior colliculus directs goal-oriented forelimb movements

Barma Charan Mondal
Transient caspase-mediated activation of caspase-activated DNase causes DNA damage required for phagocytic macrophage differentiation

Mohammed Saleem
Real-time visualization reveals Mycobacterium tuberculosis ESAT-6 disrupts phagosome-like compartment via fibril-mediated vesiculation

Soumyashree Das
Development of pial collaterals by extension of pre-existing artery tips

Anjana Bandriyanan
Live tracking of replisomes reveals nutrient-dependent regulation of replication elongation rates in Caulobacter crescentus

Diya Binoy Joseph
Epithelial and mesenchymal compartments of the developing bladder and urethra display spatially distinct gene expression patterns

Arnab Barik
A septo-hypothalamic-medullary circuit directs stress-induced analgesia

Nishad Mantag
Proteostasis modulates gene dosage evolution in antibiotic-resistant bacteria

Purusharth I Rajyaguru
Genotoxic stress triggers Scd6-dependent regulation of translation to modulate the DNA damage response

Veena Ammanathan
Salmonella Typhimurium effector SseI regulates host peroxisomal dynamics to acquire lysosomal cholesterol

Dimple Notani
RNA fine-tunes estrogen receptor-alpha binding on low-affinity DNA motifs for transcriptional regulation

Bhavana Tiwari
p53-mediated regulation of LINE1 retrotransposon-derived R-loops

Sandeep Eswarappa
Homini-specific regulation of the cell cycle by stop codon readthrough of *FEM1B*

Ganesan Venkatasubramanian
Mismatch Negativity in Schizophrenia, Unaffected First-degree Relatives, and Healthy Controls

Jayanta Bhattacharya
Distinct region-specific neutralization profiles of contemporary HIV-1 clade C against best-in-class broadly neutralizing antibodies

Ramray Bhat
Rheological transition driven by matrix makes cancer spheroids resilient under confinement

PUBLICATIONS HIGHLIGHTS

Gayatri Pananghat
Di-HAMP domains of a cytoplasmic chemoreceptor modulate nucleoid array formation and downstream signaling

Sandhya Ganesan
Coxiella burnetii as a model system for understanding host immune response against obligate intracellular, vacuolar pathogens

Arun Shukla
Molecular basis of promiscuous chemokine binding and structural mimicry at the C-X-C chemokine receptor, CXCR2

Ashok Sekhar
A finely balanced order–disorder equilibrium sculpts the folding–binding landscape of an antibiotic sequestering protein

Aravind Penmatsa
Cryo -EM structures of pannexin 1 and 3 reveal differences among pannexin isoforms

Imroze Khan
Pathogen growth and virulence dynamics drive the host evolution against coinfections

Puskar Sharma
PfPPM2 signalling regulates asexual division and sexual conversion of human malaria parasite *Plasmodium falciparum*

Sunil Laxman
Active control of mitochondrial network morphology by metabolism-driven redox state

Debabrata Biswas
Post-translational modification-dependent oligomerization switch in regulation of global transcription and DNA damage repair during genotoxic stress

Shilpak Chatterjee
CD38-mediated metabolic reprogramming promotes the stability and suppressive function of regulatory T cells in tumor

Thomas Pucadyil
Acute diacylglycerol production activates critical membrane-shaping proteins leading to mitochondrial tubulation and fission

Devaki Nambiar
Sex differences in disease burden, utilization, and expenditure on primary health care services in Kerala, India

Anirban Banerjee
Host AAA-ATPase VCP/p97 lyses ubiquitinated intracellular bacteria as an innate antimicrobial defence

Rahul K. Gajbhiye
Endometriosis and adenomyosis research priorities in India and Sri Lanka: a call for regional collaboration

Rachna Chaba
Di-HAMP domains of a cytoplasmic chemoreceptor modulate nucleoid array formation and downstream signaling

Elezebeth Mathews
Forecasting the effects of smoking prevalence scenarios on years of life lost and life expectancy from 2022 to 2050: a systematic analysis for the Global Burden of Disease Study 2021

RECOGNITIONS

India Alliance Grantees continue to earn recognition from their peers for their research achievements. Here, we highlight notable national and international honours received over the past year.

EMBO Global Investigator Network 2024

Dr. Bhavana Muralidharan, Associate Professor at the BRIC-Institute for Stem Cell Science and Regenerative Medicine, Bengaluru, is a DBT/WT IA Intermediate Fellow. In 2024 Dr. Muralidharan's work on the *'Regulation of cerebral cortical development by chromatin modifiers in health and disease'* was recognised by the prestigious EMBO Global Investigator Network Award.

Associate Professor **Dr. Rajender Motiani**, IA Intermediate Fellow from the Regional Centre for Biotechnology, Faridabad, was recognised by the EMBO Global Investigator Network Award for his research on *identifying the role of ER and Mitochondrial Ca2+ signaling in pigmentation.*

Rashtriya Vigyan Puraskar - Vigyan Yuva, 2024

Prof. Radhakrishnan Mahalakshmi, IA Senior fellow from IISER Bhopal, was recognized with this year's Rashtriya Vigyan Yuva award for her research on the *assembly, organization, function, and regulation of the mitochondrial outer membrane (OMM) protein import machinery and its inter-regulation by a metabolite transporter.*

Dr. Aravind Penmatsa, IA Senior Fellow, from the Indian Institute of Science, Bengaluru, was recognised with the Rashtriya Vigyan Yuva award for his work on the *structural dynamics and functional regulation of ion-coupled neurotransmitter transporters involved in inhibitory neurotransmission*.

Infosys Prize Life Science

Dr. Siddhesh Kamat, Associate Professor at IISER Pune, is a former IA Intermediate Fellow who won this year's Infosys Prize in the Life Science category for his work *on bioactive lipids and their receptors, their metabolic and signaling pathways*.

STORIES OF SCIENCE

This section presents a selection of stories based on research supported by India Alliance, reflecting the diversity and scope of work across different scientific themes. Continuing IA's strong online presence, over the past year, we published 12 thematic series on our communication platforms, featuring the work of nearly 50 awardees. These articles covered a wide range of topics, from fundamental research to clinical and public health studies. Through this effort, we aimed to highlight the contributions of our researchers and make their work more visible and accessible to broader audiences.

Understanding Diabetes: A Multidimensional Challenge

Diabetes is a complex, chronic disease that affects multiple organ systems and contributes to significant morbidity and mortality worldwide. In India, where the diabetes burden continues to grow rapidly, research that bridges molecular biology, clinical science, and community health is critical to developing sustainable, effective responses.

The DBT/Wellcome Trust India Alliance supports a diverse community of researchers whose work is reshaping our understanding of diabetes and its many complications.

At the molecular level, researchers are uncovering early biological signals that could help predict disease risk. Dr. Gokulakrishnan Kuppan, Intermediate Fellow and Associate Professor at NIMHANS, is advancing efforts for early gestational diabetes mellitus (GDM). His research focuses on identifying epigenetic markers, specifically DNA methylation patterns, in the early stages of pregnancy to detect GDM. This could help both mothers and children from long term consequences.

We studied pregnant women from an Indian research group (the STRiDE study) and analyzed DNA from their blood samples taken early in pregnancy. We discovered five specific DNA changes (called CpGs) that were very good at predicting which women would go on to develop GDM. When we combined these DNA markers with standard clinical risk factors, our prediction model became even more accurate. - Dr. Gokulakrishnan Kuppan

Building on the theme of maternal health, **Dr. Aatish Mahajan**, Early Career Fellow and Research Scientist at the LV Prasad Eye Institute, is exploring how maternal diabetes influences the development of the infant retina. His research links placental function, maternal nutrition, and retinal gene expression to understand the risk of retinopathy in premature infants.

While these studies focus on early-life and intergenerational risk, other researchers are decoding the cellular mechanisms that drive type 2 diabetes in adults.

Dr. Durba Pal, Intermediate Fellow at IIT Rupnagar, is investigating how immune cells in fat tissue, particularly inflammatory macrophages, contribute to insulin resistance. Her use of high-resolution imaging reveals how immune remodelling within adipose tissue fuels metabolic dysfunction, providing new therapeutic targets.

Taking this cellular investigation a step further, **Dr. Sai Prasad Pydi**, Intermediate Fellow at IIT Kanpur, is mapping G-protein coupled receptor (GPCR) signalling pathways in obesity-linked diabetes. His team studies how these immune and metabolic pathways behave differently across tissues like liver, fat, and muscle. By selectively manipulating these signals, his work explores how immune-metabolic interactions might be fine-tuned for targeted therapies.

My research interest in macrophage Gs and Gi protein signaling in obesity and type 2 diabetes is driven by the substantial burden these conditions impose, particularly in India. A deeper understanding of these pathways could inform the development of novel pharmacological strategies aimed at attenuating inflammation and improving metabolic regulation. - Dr. Sai Prasad Pydi

However, diabetes does not only disrupt metabolic processes, it also leads to clinical complications that often go undetected. **Dr. Sanat Phatak**, Clinical and Public Health Early Career Fellow at KEM Hospital, focuses on fibrosis and musculoskeletal issues in diabetic patients. His innovative approach uses finger mobility as a non-invasive marker to detect fibrosis, offering a simple and scalable diagnostic tool, especially useful in resource-limited settings.

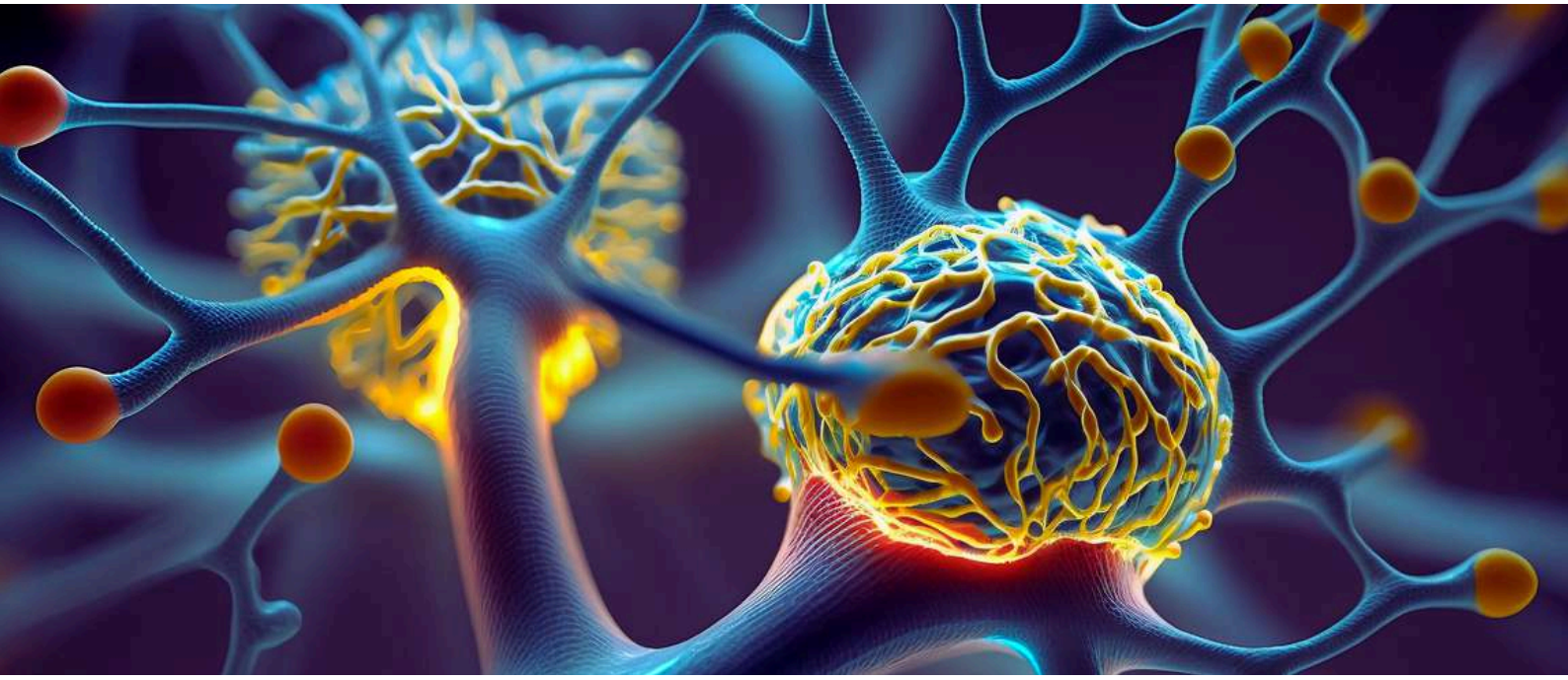
The challenge of managing diabetic complications is also central to the work of **Dr. Sadhan Das**, Intermediate Fellow at IISER Mohali. He investigates why diabetic wounds heal poorly, identifying that the loss of specific long non-coding RNAs in immune cells impairs tissue repair. While treatment remains essential, prevention is equally critical.

In Kasaragod, Kerala, **Dr. Elezebeth Mathews**, Clinical and Public Health Early Career Fellow at the Central University of Kerala, is leading a community-based intervention aimed at women with a unique form of prediabetes. Her culturally tailored lifestyle programme shows the potential of community participation and behaviour change to delay or prevent the onset of diabetes, particularly among high-risk groups often overlooked by standard care.

Women are often reported to have barriers at personal, family and community levels due to the sociocultural and patriarchal milieu that is predominant in the Indian society. Knowledge transfer, peer support and active community based engagement is understood to be effective in empowering women to make healthier choices. We employed a hybrid system with group-based interventions to leverage peer support and individuals based sessions to set and revisit goals. A android- based mobile application was used for knowledge transfer through recorded videos and daily calorie intake calculator assistant for dietary calorie restriction. - Dr. Elezebeth Mathews

Understanding other complexities of diabetes research, **Dr. Sasikala Mitnala**, CRC Grantee and Director of the Translational Research Centre at the Asian Healthcare Foundation, is investigating type 3c diabetes, a lesser-known form linked to pancreatic disease. Her focus on beta-cell dysfunction in the Indian population addresses a major diagnostic gap and supports the development of precision medicine approaches tailored to individual biological risk profiles.

Taken together, these studies point to a growing body of research that is helping to unpack the many layers of diabetes, from molecular signals to lived experience. Rooted in India's needs and shaped by different areas of expertise, this research is slowly building the knowledge needed to improve care in ways that are timely, focused, and more inclusive.



Mental Health in Focus: Bridging Biology, Care, and Culture

Mental health is an important part of a person's overall well-being.

It cannot just be characterised by the absence of an illness, as it also includes emotional, social, and psychological wellness. According to the World Health Organization, mental health conditions lead to a loss of 2,443 years of healthy life for every 10,000 people in India, highlighting the scale and urgency of the situation.

Several India Alliance Fellows and Grantees are working in this field, aiming to tackle mental health challenges by improving mental healthcare, understanding and treating brain disorders, developing innovative technologies, and exploring the underlying mechanisms of brain function.

This article highlights the work of a few India Alliance awardees whose collective efforts reflect a growing understanding that mental health solutions must be as varied and layered like the problems they aim to address.

At National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru, a psychiatrist and India Alliance Fellow, **Dr Biju Viswanath,** is investigating the genetic and biological basis of treatment responses in bipolar disorder (BD). His work seeks to understand why some patients respond to lithium, an effective treatment for BD, whereas others do not. Identifying the molecular predictors for the treatment will improve the ability to identify lithium responders and non-responders at an early stage, and thus guide patient management.

Some people also incorrectly assume that mental illness is the product of a weak mind, which has to be avoided. All mental illnesses are brain disorders and occur due to changes in the brain. This can happen to any human being like any other physical illness. Mental illness can happen to all - from Nobel Prize winners to mathematicians to those with known intellectual disability syndromes. Nobody is immune. - Dr. Biju Viswanath

In many underserved communities, there is a lack of follow-up care after self-harm due to various reasons, including lower mental health literacy levels among health and social care professionals, a lack of systematic follow-up, and resistance to accepting mental health interventions due to stigma. India Alliance Clinical and Public Health Research Centre Grantee and psychiatrist, **Dr Murali Krishna** at the Institute of Public Health, Bengaluru, is working to address this through community-level interventions. His team has developed a digital, scalable training package for non-specialist health workers, enabling them to provide support to individuals at risk after hospital discharge. They are also building digital self-harm registers to ensure timely tracking and continuity of care.

One big challenge is lower awareness of mental health needs and stigma to recognise and access help for mental health problems. We are engaging local communities through traditional arts as a medium to break these barriers and develop support systems that will better engage those who are at risk of suicide so that they can receive timely help from mental health specialists. - Dr. Murali Krishna

Innovations in care delivery are also emerging for complex psychiatric conditions. For patients with treatment-resistant schizophrenia (nearly one-third of those affected), conventional medication provides limited relief. To address this, India Alliance grantee and NIMHANS professor **Dr Ganesan Venkatasubramanian** is exploring cost-effective, home-based solutions using neuromodulation. His team is using brain imaging and transcranial Direct Current Stimulation (tDCS) to understand and treat schizophrenia more effectively. They have also developed a portable, affordable tDCS device for home use, coupled with caregiver training and remote monitoring systems. This approach helps reduce the burden of repeated hospital visits and ensures long-term care in more patient-friendly settings.

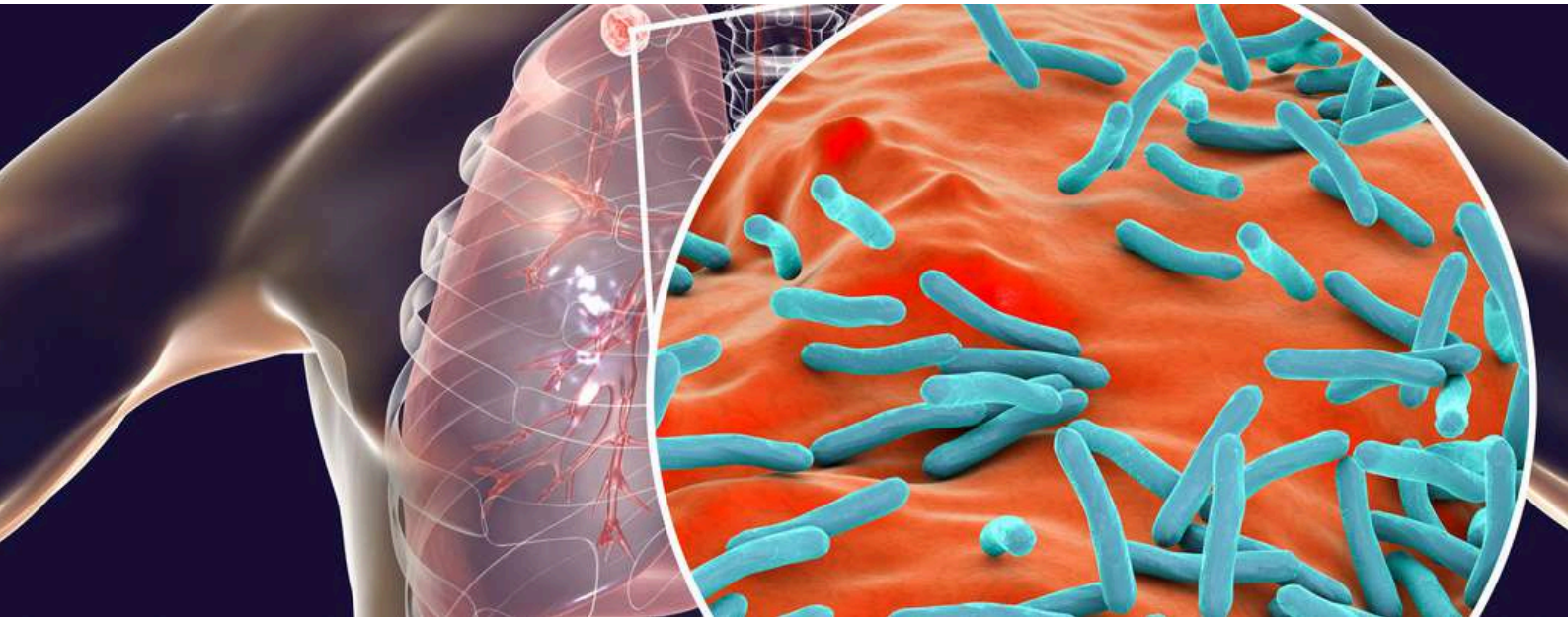
Reaching out to communities and educating them about recent breakthroughs in understanding psychiatric disorders can help them view these conditions as brain circuit dysfunctions, similar to how we see diabetes as a dysfunction in blood sugar regulation. - Dr. Ganesan Venkatasubramanian

Extending mental health research to the youngest members of society, **Dr Gauri Divan**, co-investigator of the COINCIDE project is funded through an India Alliance Team Science Grant. This TSG team is developing a framework to understand the effects of nutritional, psychosocial, and environmental exposures on young children to help frame context-specific interventions that respond to the unique challenges faced by different communities.

Misconceptions about mental health often stem from low awareness and high levels of stigma which result in families, caregivers, and teachers misinterpreting or rationalising a child's symptoms. For example, they might normalise certain behaviours—saying things like, "Boys talk late" or "Girls are just dreamy." These statements can mask potential red flags.

You might hear, "All children go through periods of anxiety about school," but this could be separation anxiety or school refusal, indicating a deeper problem.
- Dr. Gauri Divan

Collectively, these researchers are redefining how India approaches mental health through science, community partnerships, and culturally sensitive innovations. Through these efforts, IA is contributing to the advancement of brain and mental health research that may eventually lead to improvements in the lives of individuals in India.



Rethinking Tuberculosis Through Science and Systems

Tuberculosis (TB) is a major public health challenge in India and across the world.

Recognised as the deadliest infectious disease by the World Health Organization, TB is a complex disease that is difficult to eliminate due to growing drug resistance and the ability of the bacterium to persist inside the human body.

Despite these challenges, India has made significant progress in tackling TB. According to the WHO's Global TB Report, the number of TB cases in the country has dropped by approximately 17.7% because of the efforts through the National Tuberculosis Elimination Programme (NTEP).

Aligned to the national effort, India Alliance Fellows and Grantees are contributing through research that addresses TB from multiple angles. Their work is helping overcome key roadblocks in the path toward TB elimination.

One of the biggest reasons TB remains a tough disease to beat is its ability to evade from the body's immune defences by employing various mechanisms. At the International Centre for Genetic Engineering and Biotechnology, Delhi, **Dr. Dhiraj** Kumar, DBT/WT India Alliance Senior Fellow, has been investigating one such mechanism. His group showed that *Mycobacterium tuberculosis* (Mtb) disrupts RNA splicing that weakens the immune system of the host. Additionally, at the CSIR-Institute of Microbial Technology, **Dr. Ashwani Kumar** is studying another escape strategy of the bacteria. He discovered that Mtb forms protective biofilms, that help the bacteria shield themselves from drugs and immune attacks.

Meanwhile, **Ramandeep Singh**, DBT/WT India Alliance Senior Fellow at THSTI, Faridabad, is looking at how Mtb survives during stressful conditions. His focus is on toxin-antitoxin systems, built-in stress-response tools that help the bacteria enter a "standby" mode when conditions are harsh. By mapping out how these systems work, his work could help prevent the bacteria from initiation and reactivation of disease.

The DBT/WT India Alliance Early Career Fellow, **Kamakshi Sureka Paul** at JIS Institute of Advanced Studies & Research, Kolkata is

exploring how Mtb communicates within itself to survive. She's studying cyclic di-AMP signalling to identify inhibitors that can block this essential bacterial signalling pathway and reduce the bacterium's ability to cause disease.

At IIT Bombay, **Shobhna Kapoor**, DBT/WT India Alliance Intermediate Fellow is investigating how Mtb manipulates the host's cell membranes using its own lipid molecules. Her lab is identifying the host proteins that bind to these lipids, with the goal of developing therapies that disrupt these harmful interactions.

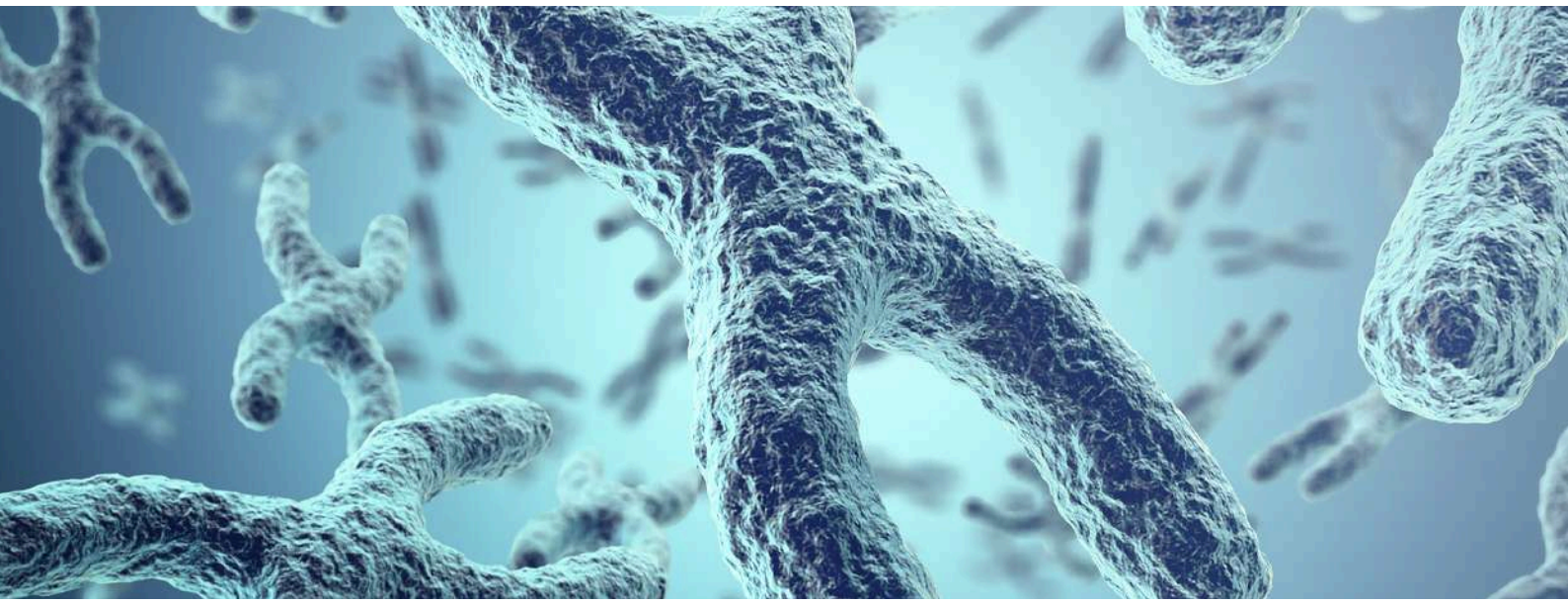
However, TB does not act the same way in every part of the body. At the LV Prasad Eye Institute in Hyderabad, **Dr. Soumyava Basu**, DBT/WT India Alliance Intermediate Fellow is working on a form of TB that affects the eye. His team uses advanced tools like single-cell RNA sequencing and flow cytometry to study immune responses in the eye, aiming to create more tailored treatments and better understand TB-related autoimmunity.

Some researchers are even rethinking the way we study TB in the lab. **Dr. Rachit Agarwal**, DBT/WT India Alliance Intermediate Fellow at the Indian Institute of Science, Bengaluru, has developed a 3D culture system that mimics necrotic TB granulomas using immune cells and scaffold-like structures. This model allows researchers to observe TB progression and drug responses in real time, offering a powerful platform for testing personalised therapies.

Beyond biology, researchers are also addressing human and systemic challenges in TB care. At St. John's National Academy of Health Sciences in Bengaluru, **Dr. Rashmi Rodrigues**, DBT/WT India Alliance Intermediate Fellow has tested a mobile app-based video DOT (vDOT) system that improves treatment adherence. Her randomised controlled trial combined video-based medication monitoring with monthly counselling and shows strong potential for scalable, tech-enabled solutions in TB management.

Furthermore, at the George Institute for Global Health in Delhi, Dr. Susmita Chatterjee, DBT/WT India Alliance Intermediate fellow, is studying the economic burden of TB across four Indian states. Her research reveals that many patients face high healthcare costs, spending over 20 percent of their household income, even when government services are provided at no cost. Identifying these financial stress points is crucial for designing policies that protect vulnerable families.

From uncovering the survival strategies of the bacterium, to developing improved laboratory models, enabling technology-driven treatment support, and exploring the economic factors influencing care, India Alliance-supported researchers are adopting truly multidisciplinary approaches to understanding tuberculosis.



Catalysing Change: India Alliance-supported Research Advances in Gene Therapy

Gene therapy is reshaping modern medicine by addressing diseases at their genetic roots. It now offers the potential for long-term cures, especially for inherited and rare disorders that currently lack effective treatments.

Since the launch of the cross-disciplinary collaborative grants programme in 2019, The DBT/Wellcome Trust India Alliance has been supporting a range of research efforts in this field. These include improving methods of gene delivery, designing mutation-independent gene therapy, and deploying gene-editing tools for treating blood cell disorders. Such research is contributing to a growing body of foundational knowledge that will inform future therapeutic approaches.

In this article, we highlight the research spearheaded by our Team Science Grantees, each of them uniquely positioned to improve our understanding of how genetic interventions can be applied to tackle a range of inherited diseases.

Among the various disorders where gene-based interventions show promise, muscular diseases such as Duchenne Muscular Dystrophy (DMD) are a key focus. It is a genetic disease that causes progressive muscular degeneration due to mutations in the gene that encodes dystrophin, a key structural protein in the muscle. Gene therapy for DMD involves editing this gene and effectively delivering it via vectors.

Dr. Jayandharan Giridhara Rao at the Indian Institute of Technology (IIT) Kanpur is developing improved Adeno-associated virus (AAV) vectors for more effective treatment of DMD. Current AAV-based therapies require high doses and have shown limited clinical outcomes. To overcome these limitations, Dr. Rao's lab is engineering vectors with enhanced efficiency to deliver dystrophin at optimal dosages. The team aims to establish the efficacy of these enhanced AAV-based vectors in murine models of DMD, followed by clinical trials.

Our research focuses on understanding AAV biology and its interaction with host cells to improve gene therapy outcomes. We have studied post-translational modifications (PTMs) on AAV capsids and their role in recombinant AAV

production and infectivity. This work led to novel vectors with strong preclinical efficacy in murine models of hemophilia and retinal degeneration.

Building on this experience, we are addressing the challenge of developing gene therapy for DMD, which requires effective vector transduction throughout the body. - Dr. Jayandharan Giridhara Rao

Importantly, innovations in AAV vector technology are not limited to muscular disorders. These advances are now being explored for other inherited conditions, such as genetic eye diseases. At the Narayana Nethralaya Foundation, **Dr. Arkasubhra Ghosh** is working to develop gene therapeutic solutions for for inherited retinal dystrophies (IRDs), a group of disorders caused by mutations in over 120 genes, often leading to vision loss and blindness.

Dr. Ghosh's team addresses IRDs using AAV-based gene therapy. However, developing gene therapy against ~300 genes involved in IRD is challenging, and therefore Dr. Ghosh is developing a mutation-independent gene therapy (MInT) approach that prevents retinal cell death pathways, halting retinal degeneration and maintaining residual vision.
His team has successfully established rescue of retinal degeneration in IRD mouse models using MInT. They have also developed scalable vector production methods that significantly reduce gene therapy costs.

Over the past several years, we have studied the genetics of several ocular diseases, observing that, unlike model animals, humans exhibit vast diversity in both the genes mutated and the types of mutations within a given gene. This genetic variability leads to a wide range of phenotypes that cause IRDs. As a result, developing therapies that target individual genes and mutations is an almost impossible task with the current state of technology. Therefore, a conceptually distinct approach was necessary.
- Dr Arkasubhra Ghosh

Like Dr. Ghosh's work on retinal dystrophies, identifying unique strategies to apply gene therapy for treating inherited disorders is the major focus of **Dr. Mohankumar K. Murugesan**'s research at the Centre for Stem Cell Research (CSCR).

β-hemoglobinopathies are estimated to affect over 300,000 people around the world each year. SCD and β-thalassemia are the most common monogenic disorders affecting the HBB gene loci with mutations that result in defective β-globin protein or inefficient production of β-globin. We utilise advanced genome editing platforms based on the CRISPR/Cas system, such as base editors and prime editors, to correct or introduce mutations in hematopoietic cells to develop preclinical strategies to treat these disorders through gene therapy. - Dr. Mohankumar K. Murugesan

He is leading efforts to develop genome-editing therapies for β-hemoglobinopathies, conditions caused by mutations in the *HBB* gene, which affects the production or function of β-globin, a key component of haemoglobin. These disorders, including sickle cell disease and thalassemia, affect hundreds of thousands worldwide.

A key part of this approach involves increasing levels of fetal haemoglobin (HbF), which naturally protects infants from these conditions during the first few months of life. Normally, HbF is replaced by adult haemoglobin after birth, a process regulated by the *BCL11A* gene. Dr. Murugesan's team is using precise gene-editing tools to mimic natural *BCL11A* mutations that allow continued HbF production. By safely boosting HbF in patients, they hope to offer an effective, low-risk treatment option for those with limited alternatives.

Together, these efforts represent a growing pipeline of robust translational research in gene-based therapies. By consistently supporting such efforts, IA ensures that India is at the forefront of delivering affordable and effective genetic treatments to the world.

Improving Maternal and Child Health through Evidence-based Research

Maternal and child health is central to building healthier communities. Despite its importance research on evidence-based interventions remains limited, particularly in low-resource settings. From ensuring timely maternal immunisation to addressing early childhood development, comprehensive and inclusive healthcare for women and children is critical.

DBT/Wellcome Trust India Alliance (IA) has been facilitating research at the intersection of these themes, bridging the existing gaps in this field to inform policies, placing women and children at the heart of public health research supported.

This article showcases the work of researchers supported by IA fellowships in the Clinical and Public Health (CPH) stream and grants, reflecting the complexity of this field and the need for locally relevant, long-term solutions.

Globally, research on women's health focuses on addressing maternal concerns, and this lack of data restricts our ability to develop effective policies. Addressing this gap, **Dr. Sapna Desai**, a Team Science grantee at the Population Council Institute, New Delhi, leads the SAHELI project, which aims to understand social and biological predictors of early hysterectomy and its long-term impact on women's well-being.

Expanding this lens to mental health, **Dr. Gokulakrishnan Kuppan**, CPH Intermediate Fellow, is exploring biomarkers for pregnancy-related depression. This effort by Dr. Kuppan and team at the National Institute of Mental Health and Neurosciences, Bengaluru, may aid early detection and timely interventions. Taking a complementary approach, **Dr. Rahul Shidhaye**, a CPH Intermediate Fellow, MIT-ADT, Pune, is investigating yoga-based interventions to address the same issue, combining mental health care with traditional wellness practices.

Maternal immunity also plays a key role in protecting both mothers and children from various diseases. **Dr. Tila Khan**, Clinical & Public Health (CPH) Early Career Fellow, IIT Kharagpur, aims to improve maternal immunisation against influenza .

Similarly, **Dr. Rajlakshmi Viswanathan**, a CPH Intermediate Fellow, ICMR-National Institute of Virology, studies how declining maternal immunity towards whopping cough impacts infection risks among newborns.

Stronger maternal health systems lay the groundwork for quality care in the early years of life. At BRIC-THSTI, Faridabad, **Dr. Bapu Koundinya Desiraju**, former CPH Early Career Fellow, has developed a deep-learning model to predict preterm birth by analysing ultrasound images. This innovation could improve preparedness and ensure better care for high-risk pregnancies.

Another aspect of early childhood care is early identification of developmental delays in newborns. **Dr. Vidya Ramkumar**, a CPH Intermediate Fellow at Sri Ramachandra Institute of Higher Education and Research, Chennai has developed the SRESHT screener, an mHealth tool to remotely screen for childhood disabilities. Integrating newer technologies, with community-based strategies is also a focus for **Dr. Archana Patel**, Clinical and Public Health Centre Grantee at Lata Medical Research Foundation, Nagpur. Her work combines mobile health tools along with parenting programmes to promote better nutrition and development in children from vulnerable communities in India.

Similarly, integrated care is being explored by researchers at the Society for Applied Studies in New Delhi, to improve infant care through integrated and low-cost interventions. **Dr. Ranadeep Chowdhury**, CPH Intermediate Fellow, leads the WINGS trial, which examines how a package of health, nutrition, and psychosocial support influences infant growth. **Dr. Ravi Upadhyay**, and **Dr Bireshwar Sinha**, both Early Career Fellows, are investigating the long-term impact of Kangaroo Mother Care (KMC) in different contexts.

Equitable early childhood care remains a particular challenge in marginalised communities, especially in rural and tribal regions. **Dr. Prashanth N. Srinivas**, CPH Research Centre Grantee, at the Institute of Public Health Bengaluru, explores this challenge by leading the CHIGURU Birth Cohort Study in Karnataka, which examines the impact of tobacco and alcohol use on child growth. On a related note, the programmes led by **Dr. Aditi Roy**, CPH Early Career Fellow, Centre for Chronic Disease Control (CCDC), New Delhi, **Dr. Beena Koshy**, CPH Intermediate Fellow, Christian Medical College, Vellore, and **Dr. Anubhuti Bansal**, CPH Early Career Fellow, CSIR–Institute of Genomics and Integrative Biology, New Delhi are similarly uncovering how early-life conditions shape long-term health.

Together, these studies reflect a growing, interdisciplinary effort to understand and improve maternal and child health in India. By linking biological, social, and environmental factors, and understanding the needs of diverse populations, India Alliance-supported work is generating evidence that can inform practical, context-sensitive healthcare solutions.

Towards Better Nutrition by Building Knowledge and Bridging Needs

Nutrition is one of the most powerful yet complex levers of public health, which is shaped by culture, access, and awareness. With its diverse cultural, geographic, and socio-economic landscape, India presents a mosaic of eating habits and traditional knowledge systems, making nutrition research both challenging and essential.

Amongst the programmes supported by the DBT WT India Alliance, two seemingly different research efforts are shedding new light on this vital research area. One, a deep dive into the traditional diets and evolving nutrition landscape of tribal communities; the other, an investigation into how our body absorbs vitamin B12.

Such studies, aim to understand and improve nutrition through evidence, empathy, and equity. In this article, we highlight these two research projects.

The tribal communities of India hold rich cultural and ecological knowledge, but when it comes to health and nutrition, their stories are often underrepresented, leaving a gap in our understanding of a pressing yet overlooked concern: What drives the food systems of our tribal communities? This is the central theme of **Dr. Suparna Ghosh-Jerath's** research at the George Institute of Global Health in Delhi. An IA Intermediate Fellowship in Clinical and Public Health in 2016 supported Dr. Suparna Ghosh-Jerath's work on documenting dietary shifts and the causes of undernourishment among tribal communities in Jharkhand. Her studies revealed a shift from locally grown food grains to calorie-dense market foods, along with monotonous diets provided by supplementary feeding programs, contributed to the community's nutritional decline.

I could see a clear-cut paradox that they were poorly nourished, yet they had so much knowledge about these [vitamins, mineral-rich foods in the environment] - Suparna Ghosh-Jerath

Despite access to biodiversity-rich areas, these communities suffer from underlying malnutrition, highlighting long-standing nutritional disparities.

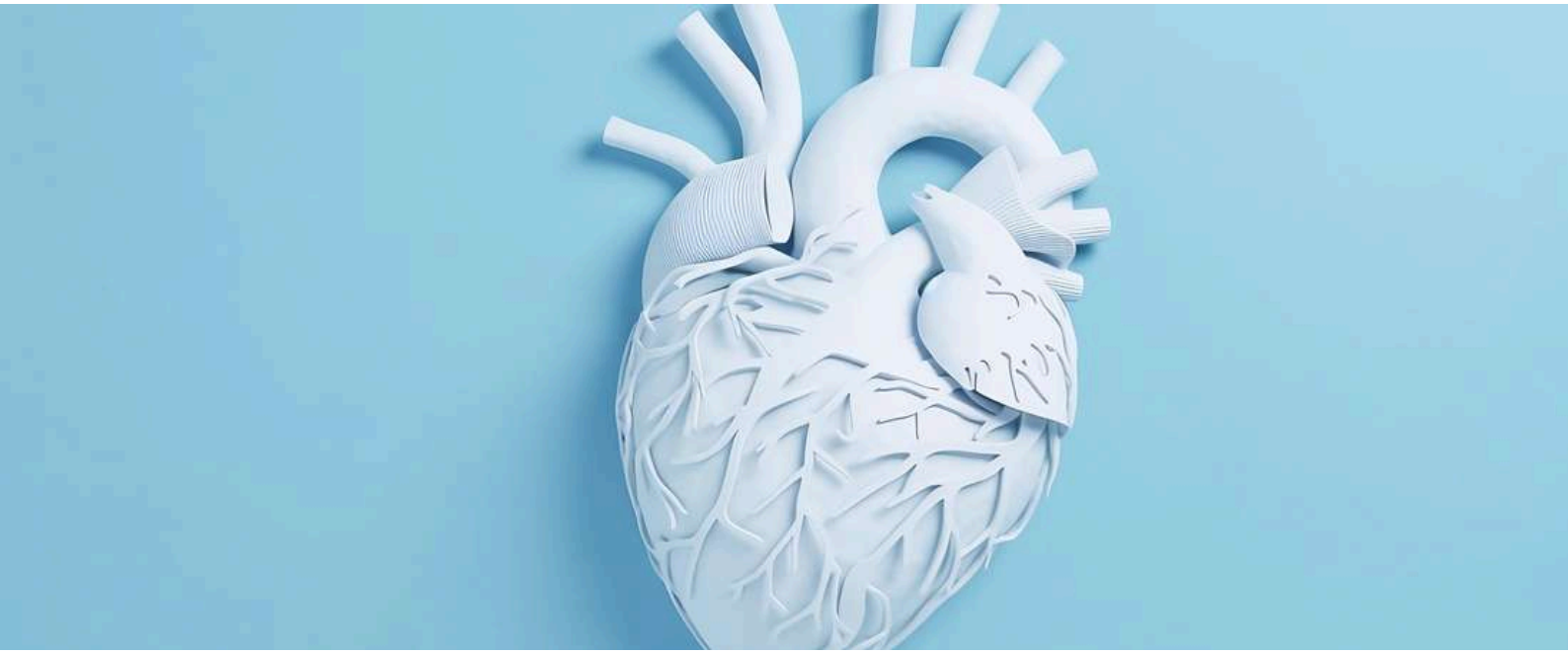
With a Team Science grant in 2021, Dr. Ghosh-Jerath now leads a collaborative, multidisciplinary team that seeks to bridge this gap between knowledge and practice. Through the project CARISMMA (ChAracterizing, Reviving, Supporting, Monitoring, and Managing Sustainable Food Systems), Dr. Ghosh-Jerath wants to co-create sustainable food systems with the tribal communities to strategise solutions that can address malnutrition while conserving the communities' traditional practices. This project, with an expanded footprint, studies tribal communities across Madhya Pradesh, Meghalaya, Odisha, and Jharkhand, aiming to develop data-driven, context-specific solutions to inform national nutrition policies.

Regardless of cultural contexts or lifestyle habits, certain aspects of nutrition remain universal, such as micronutrient deficiencies, particularly vitamin B12 deficiency. As most of the diets in India are predominantly plant- and cereal-based, this can lead to widespread vitamin B_{12} deficiency in the population. India Alliance Clinical and Public Health Research Centre grantee, **Professor Anura Kurpad** from St. John's Medical College (SJMC), Bengaluru, works to understand how maternal diet shapes breast milk and early child growth, focusing on vitamin B12, often low in vegetarian Indian diets. The approaches combine deep phenotyping and advanced analytics to study nutrient absorption, and translates findings into public health insights using national survey data.

With collaborators in Sitaram Bhartia Institute of Science and Research, New Delhi and SJMC, Dr Kurpad has developed a novel method to track B_{12} absorption in real-time using a carbon 13 - labelled -vitamin B_{12} molecule (^{13}C-B_{12}) that is safe to use in humans. This study revealed that vitamin B_{12} can be absorbed in the colon! Implying a potential role of colonic bacteria in maintaining daily vitamin B_{12} levels in the body, the finding has significant clinical and public health implications.

The findings from this study follow this theme and can help doctors and public health officials understand how much B_{12} is needed in our diet and whether adding B_{12} to foods is necessary - Anura Kurpad

Together, these two research efforts highlight the importance of connecting cultural context with scientific insight in addressing nutrition challenges. From revitalising traditional food systems in tribal communities to uncovering how our bodies absorb vitamin B12, this research is helping shape more informed and inclusive nutrition policies. Supported by India Alliance, these studies are paving the way for evidence-based solutions that are both locally relevant and nationally impactful.



Diverse Frontiers in Heart Research: From Cell Biology to Community Health

Cardiovascular diseases (CVDs) remain one of the leading causes of death in India, driven by a complex interplay of behavioural, environmental, and socio-economic risk factors. From high blood pressure and diabetes to air pollution and chronic stress, these influences affect individuals and populations in varied ways.

Here, we highlight six research initiatives supported by the India Alliance (IA) that explore the fundamental biology of the heart and related health conditions through diverse perspectives and approaches.

Dr. Ashok Sekhar, IA Intermediate Fellow at the Indian Institute of Science, Bengaluru, studies the body's circadian clock and its influence on cardiac health. His team focuses on the protein PER2, a key regulator of the circadian rhythm. They discovered how the stability of PER2 is regulated through a balance of clustering (which protects it) and phosphorylation (which can destabilise it), shedding mechanistic light on how circadian disruptions may contribute to heart disease, a growing concern in modern lifestyles.

Dr. Minhaj Sirajuddin, IA Senior Fellow at inStem, Bengaluru, explores how the structure of cardiac muscle fibres, from microscopic sarcomeres to full myofibres, supports the heart's ability to contract and pump blood. His team produced a 3D reconstruction of muscle fibre architecture, revealing the intricate organisation that supports efficient cardiac function. Disruption in this architecture is linked to diseases like cardiomyopathies.

At IISER Mohali, **Dr. Sadhan Das**, IA Intermediate Fellow, focuses on how epigenetic mechanisms, including long non-coding RNAs (lncRNAs), affect cardiovascular health in people with diabetes. His work highlights how macrophages, immune cells essential to wound healing, are dysregulated in diabetes, leading to chronic inflammation. These findings have potential applications in managing diabetic heart complications and improving recovery.

Dr. Chinmoy Patra, IA Intermediate Fellow at the Agharkar Research Institute in Pune, studies the

remarkable ability of zebrafish to regenerate heart tissue after injury. His team identified a key protein, CCN2, that promotes cardiomyocyte proliferation and modulates immune responses during healing. Because CCN2 is also found in humans, this research holds promise for developing therapies that may enhance heart repair in people after a myocardial infarction.

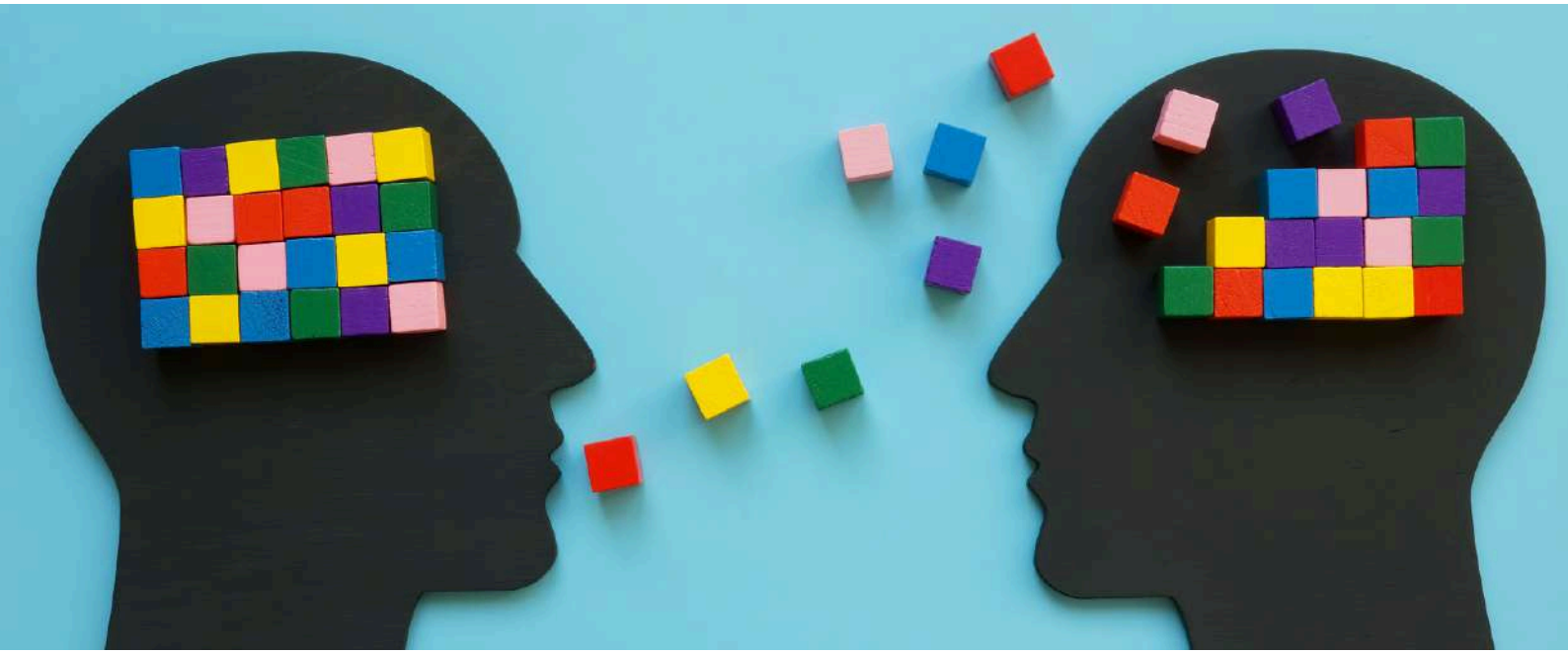
At the organ level, **Dr. Soumyashree Das**, IA Intermediate Fellow and her team at NCBS, Bengaluru, are investigating how the heart forms new arteries after injury, a vital process for recovery post-heart attack. Their work on neonatal mice revealed a process called "Artery Reassembly," which depends on VEGFR2, a protein essential for blood vessel growth. The team hopes to apply this understanding to adult hearts, potentially enabling natural regeneration of collateral arteries.

Expanding from biology to systems-level health strategy, the REALISE project, led by **Dr. Pragati Hebbar**, IA Intermediate Fellow at the Institute of Public Health (IPH), Bengaluru, aims to strengthen the implementation of India's National Communicable Diseases (NP-NCD). While the NP-NCD programme provides a national framework for addressing cancer, diabetes, cardiovascular disease, and stroke, its impact varies widely across regions. The team is establishing a REALISE Lab to build capacity among public health researchers and officials, develop a community-based intervention for one key NCD risk factor, and analyse the barriers and enablers in policy implementation at the state and district levels.

Together, these six projects represent a multifaceted approach to advancing our understanding of heart health. Ranging from decoding the role of circadian proteins and visualizing muscle fibre architecture to studying heart regeneration/repair and evaluating national health programs, these efforts illustrate the diverse strategies being employed to address the growing burden of cardiovascular disease. By bridging basic science with public health systems research, they generate insights that not only deepen scientific knowledge but also hold meaningful potential to inform policy, guide clinical practice, and shape community-level interventions

MENTORSHIP

This section highlights how mentorship contributes to the development of scientific careers and a stronger research ecosystem. Featuring stories from India Alliance Fellows and Grantees shared as part of the celebration of International Day of Women and Girls in Science on 11 February 2025, the stories illustrate how timely guidance, collaboration and long-term support can help researchers overcome challenges, pursue ambitious ideas and eventually become mentors themselves.



Mentorship: A Foundation for Scientific Growth

A thriving research culture is not built solely on individual brilliance. It is shaped by a system of support, encouragement, and guidance, much of which comes through meaningful mentorship. Mentors help young researchers find their footing, navigate challenges, and envision pathways that may otherwise remain obscure. They serve not just as advisors, but as enablers of potential, passing down the values, practices, and curiosity that sustain scientific progress.

At DBT/WT India Alliance (IA), we recognise that mentorship is not an optional add-on to research training, it is foundational. From early career fellowships to advanced support for senior scientists, our funding mechanisms are designed to foster long-term, collaborative relationships between mentors and mentees. Whether through lab-based training, interdisciplinary collaborations, or grant-writing guidance, India Alliance-funded researchers routinely cite strong mentorship as a pivotal aspect of their journey.

This support has had a wide ripple effect. Through the labs and research programmes supported by our fellowships and grants, over 2,000 students and trainees have received hands-on scientific training and mentorship, contributing to the growth of a robust and skilled research workforce in India.

One of the ways we have seen this ethos come to life is through our ongoing series on the International Day of Women and Girls in Science, where we featured several IA Intermediate Fellows. These stories from the Indian academic world showcased the varied and rich fabric of mentorship practices, each with its unique lesson, yet rooted in shared values. This series featured stories of how field-based collaborations fostered interdisciplinary research that integrated social science methods into public health practices, and how partnerships with mentors and community workers helped design practical, technology-driven healthcare solutions.

While some stories described mentors who empowered their students to establish independent labs or pursue risky, innovative research, some others highlighted the often-overlooked mentorship that flows from students back to their advisors through fresh ideas and fearless experimentation.

And in a story that encapsulates the full arc of IA supported mentorship, Dr. Bhavana Muralidharan, a developmental neurobiologist at inStem, Bengaluru, reflects on how early mentorship shaped her career. As a postdoc with Prof. Shubha Tole, a Wellcome Trust Fellow, Dr. Muralidharan was introduced to the IA Fellowships and imbibed a deep commitment to scientific rigour and mentorship. With support from an Early Career Fellowship and later an Intermediate Fellowship, she established her independent lab. Today, she mentors Dr. Kruttika Phalnikar, an Early Career Fellow whose work on brain organoids is advancing our understanding of bipolar disorder. Dr. Muralidharan's story illustrates how sustained support and mentoring can multiply impact across generations, building a stronger scientific ecosystem.

These stories serve as a reminder that mentorship is not a peripheral aspect of research, it is central to how science grows and evolves. It shapes the questions researchers ask, the risks they take, and the confidence with which they move forward.

As India's scientific landscape becomes increasingly dynamic, investing in a strong culture of mentorship will be key to sustaining excellence. At India Alliance, we remain committed to fostering an environment where thoughtful guidance and collaborative learning are valued as much as innovation itself.

Strategic Advisory Council

Ajit Lalvani (Chairperson)	Imperial College London, London, UK
Paul Schreier	CEO, Simplyhealth, UK
Shah Ebrahim	London School of Hygiene and Tropical Medicine, London, UK
Kris Gopalakrishnan	Chairman, Axilor Ventures
Apurva Sarin	CEO, DBT/Wellcome Trust India Alliance, India

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Rosanna Walker	Commercial Finance Manager, Wellcome Trust, UK
Shahaj Uddin Ahmed	Scientist F, Global Innovations (International Partnerships), DBT, New Delhi, India
Pravin Gupta	Company Secretary, India Alliance, India

GOVERNANCE AT IA

Officers at DBT

Shahaj Uddin Ahmed	Scientist F, Global Innovations (International Partnerships), DBT, New Delhi, India
Jyoti Malik Logani	Scientist F, Global Innovations (International Partnerships), DBT, New Delhi, India
Sanjay Mishra	Senior Advisor, DBT (till March 2024), New Delhi, India
Manish Rana	Scientist F, DBT (till November 2024), New Delhi, India

Officers at Wellcome

Julia Kemp	Associate Director, Equitable Research Ecosystems, Wellcome Trust, UK
Stephen Gray	Ecosystems Lead, South and Southeast Asia, Wellcome Trust, UK

PEOPLE OF IA

At the heart of India Alliance is a dedicated team whose unwavering commitment drives the seamless delivery of its mission. Their steadfast efforts ensures uninterrupted support to the research community and nurtures the shared vision with integrity, care, and purpose.

India Alliance Staff (2024-2025)

Grants

From top row left: Reelina Basu (GA), Upasana Ganguly (GA), Jaya Kumari (GA), Dipanwita Sengupta (Grants Manager), Rupa Priscilla Ch (GA), Divya Prabhakaran (GA), Tania Das (GA), Poornima Yedavalli (GA); **Seated from left**: Soumya Kanti Ghosh (GA), Devyani Samantarrai (GA), Pratyusha Sambangi (GA), Arif Hussain (GA)

Isha Goel (GA till December 2024); GA: Grants Advisor

Finance

From left: Sai Kiran Methuku (Sr. Accounts Executive), Ravi Kumar Bade (Accounts Officer), Chandana P (Sr. Executive Assistant), Nataraj Bollam (Finance Manager), Narsing Rao Kurelli (Sr. Accounts Executive)

Ramu Burra (Sr. Accounts Executive till May 2025)

Operations & IT

From left: Satish Kumar Ramatenki (Executive-Admin), Gogikar Krishna (Executive Operations), Saritha Vincent (Manager-HR & Operations), M Ravi Kumar (Office Attendant), Kanathala Saikumar (IT Administrator)

Mohd. Abdul Rahman (Sr. Office Executive till May 2024), Ravi Chandra Vasa (Manager IT till September 2024)

Communications & Engagement

Neha Kumari (Communications Executive since December 2024)

Yashika Kapoor (Manager SCoPE till April 2025)

FINANCIALS

SOMANCHI & CO.
CHARTERED ACCOUNTANTS

5-9-13, 307, Taramandal Complex, Saifabad, Hyderabad – 500 004 Tel: 23241362, Mobile: 9885118448, 9885061625, 9701717090
E-mail somanchico@hotmail.com |somanchico@gmail.com

INDEPENDENT AUDITOR'S REPORT

To The Trustees of
DBT/WELLCOME TRUST INDIA ALLIANCE

Report on the Audit of Financial Statements

Opinion

We have audited the accompanying financial statements of DBT/WELLCOME TRUST INDIA ALLIANCE, registered as public charitable trust in India which comprises the Balance Sheet as at 31st March 2025, the Statement of Income & Expenditure and the Receipts & Payments accounts for the year then ended on that date and Notes to the financial statements, including a summary of the significant accounting policies and explanatory information annexed hereto.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements, give a true and fair view in conformity with the accounting principles generally accepted in India.

a) In the case of the Balance Sheet, of the state of affairs of the trust as at March 31, 2025;
b) In the case of the Statement of income & Expenditure, of the Excess of income over Expenditure the year ended on that date; and
c) In the case of the Receipt and Payment Account for the year ended on that date; and

Basis of Opinion

We conducted our audit in accordance with the Standards on Auditing generally accepted in India. We are independent of the Trust in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible with respect to the preparation of these financial statements that give true and fair view of the financial position, financial performance and cash flows of the Trust in accordance with the accounting principles generally accepted in India, including the accounting Standards. This responsibility also includes the maintenance of adequate accounting records for safeguarding of the assets of the Trust and for preventing and detecting the frauds and other irregularities, selection and application of appropriate accounting policies, making judgements

and estimates that are reasonable prudent; and design implementation and maintenance of internal financial controls that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement whether due to fraud or error.

In preparing the financial Statements, the Management is responsible for assessing the Trust's ability to continue as a going concern, disclosing as applicable matters related to going concern and using the going concern basis of accounting.

The Management is also responsible for overseeing the Trust's financial reporting process.

Auditor's Responsibility

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence economic decisions of users taken on the basis of these standalone financial Statements.

As Part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the standalone Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of the Management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Trust's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the Financial Statements or, if such disclosures are inadequate, to modify our opinion. ·Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Trust to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial Statements including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance, regarding among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

We report that,

1. We have sought and obtained all the information which to the best of our knowledge and belief were necessary for the purpose of audit,
2. In our opinion, proper books of accounts as required by law have been kept by the Trust so far appears from our examination of those books.
3. The Balance Sheet, the Statement of Income & Expenditure and the Receipts & Payments Accounts dealt with by this Report are in agreement with the books of accounts.

For SOMANCHI & CO.
Chartered Accountants
Firm Reg. No. 050102S

Chandrasekhar M
Partner
Membership No. 252885

Date: 20-09-2025
Place: Hyderabad

DBT/Wellcome Trust India Alliance

Balance Sheet as on 31st March 2025

Particulars	Sch	31-03-2025	31-03-2024
Source of Funds			
Unrestricted Funds Reserve Funds	1	37,61,14,905	29,30,28,888
Non Current Liabilities			
Other term Liabilities	2	5,50,60,987	7,21,49,149
Other Long-term provisions	3	28,67,057	26,13,371
Current Liabilities			
Short Term Provisions	4	16,11,217	14,37,681
Other Current Liabilities	5	61,00,18,310	61,41,39,526
		1,04,56,72,476	**98,33,68,615**
Application of Funds			
Non Current Assets			
Planned Property & Equipment			
Gross Block		2,87,26,730	3,03,46,357
Less: Accumulated Depreciation		2,42,02,174	2,48,84,633
Net Block	6	45,24,556	54,61,724
Intangible Asset under development	6	20,12,237	20,12,237
Current Asset			
Cash & Cash Equivalents	7	37,21,09,136	58,70,36,329
Other Current Assets	8	66,70,26,547	38,88,58,325
		1,04,56,72,476	**98,33,68,615**

Notes forming parts of Financial Statements
Schedules referred above forms integral part of accounts.

As per our report attached

SOMANCHI & CO.

Chartered Accountants

Firm Registration No:050102S

Chandrasekhar M
Membership No:252885
UDIN No.25252885BMJAWN7105
Place: Hyderabad
Date: 20-09-2025

For and on behalf of

DBT/Wellcome Trust India Alliance

Dr. Apurva Sarin
CEO

Place: Hyderabad
Date: 19-09-2025

B. Nataraj
FM

Place: Hyderabad
Date: 19-09-2025

PROGRAMME SCHEDULE

IndiaAlliance
DBT wellcome

ANNUAL CONCLAVE 2025

Taj Deccan, Banjara Hills, Hyderabad, India
16-18th July 2025

DAY 1: 16TH JULY 2025

12:00	Registration **Venue for Talks**: Kohinoor Hall	Outside Main Venue **Poster Sessions:** SYN Hall
12:30 - 13:45	Lunch	
Session 1 13:45 - 14:25	Posters: **Lightning Talks** Coordinators: Grants Team IA	
Session 2 14:30 - 15:30 **Chairperson:** **Arshad Desai** SIF Committee, Department of Cell & Developmental Biology, School of Biological Sciences, Department of Cellular and Molecular Medicine, School of Medicine, UC San Diego, USA	**Lipi Thukral | Intermediate Fellow** Institute of Genomics & Integrative Biology, New Delhi *From virtual molecules to real mechanisms: Simulation guided insights of autophagy pathway* **Sunil Laxman | Senior Fellow** Institute of Stem Cell Biology, Bengaluru *Understanding resource allocation strategies in cells from a metabolic organization perspective* **Thomas Pucadyil | Lead PI Team Science Grant** Indian Institute of Science Education & Research, Pune *EH-domain containing ATPases as master regulators of protein trafficking*	
Session 3 15:30 - 18:30	**POSTERS** (Coordinators: Grants Team IA) Tea/Coffee Break (16:30 - 17:00)	
Special Session: Perspective 18:30 - 19:15	**Jimmy Volmink** Chief Equity, Diversity and Inclusion Officer, Wellcome Trust **Rajesh S Gokhale** Secretary, Department of Biotechnology, India	
19:30	Networking Dinner (Patio - Kohinoor Hall)	

DAY 2: 17TH JULY 2025

9:10	Announcements
9:15 - 9:25	**Apurva Sarin** CEO | DBT/WT India Alliance
Session 4 9:30-10:30 **Chairperson: Irwin Nazareth** TSG & CRC Committee. Dept. of Primary Care & Population Health, UCL, UK	**Hemant Bhargav | Early Career Fellow** National Institute of Mental Health & Neuroscience, Bengaluru, *Opioid Use Disorder and Role of Yoga as an Adjunct in Management (OUDARYAM): Findings from a Pilot Trial and Progress on the Main Study* **Kartik Sunagar | Intermediate Fellow** Indian Institute of Science, Bengaluru *Evolutionary Ecology of Snake Venoms and India's Next-Generation Antivenom* **Mohan Kumar Murugesan | Lead PI, Team Science Grant** Centre for Stem Cell Research, Vellore, InStem Bengaluru *Editing with Purpose: Transforming Pathogenic into Therapeutic Mutations for Sickle Cell Disease and Beta-Thalassemia*
10:30 - 11:00	Break
Session 5 11:00 - 11:50 **Chairperson: Dipanwita Sengupta** Manager, Grants and Fellowships, IA	**Almut Kelber** Human Frontiers Science Program, Strasbourg **Shirshendu Mukherji** Wadhwani Innovation Network, Wadhwani Foundation **Morag Foreman** Wellcome Trust, UK **Shahaj Uddin Ahmed** Global Innovations Directorate, Department of Biotechnology, India

DAY 2: 17TH JULY 2025

11:55 - 12:15

Chairperson:
Madhuri Dutta
GIGH-India

Katrina Lawson
Perspective on Research Management
Member, IRMI Committee, Grants & Communications Manager, The Oxford University Clinical Research Unit

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12:25 — Group Photo

12:30 - 14:00 — Lunch (Patio, Kohinoor Hall)

Session 6

14:00 - 16:30

POSTERS

(Coordinators: Grants Team IA)

Tea/Coffee Break (16:30 - 17:00)

Session 7

17:00 - 18:00

Chairperson:
Shankar Subramaniam
TSG & CRC Committee, Department of Computer Science and Engineering, Department of Bioengineering, Department of Cellular and Molecular Medicine, UC San Diego, USA

Aravind Penmatsa | Senior Fellow
Indian Institute of Science, Bengaluru
Mechanisms of substrate and inhibitor recognition in GABA transporters at the neural synapse

Anupama Sathyamurthy | Intermediate Fellow
Indian Institute of Science, Bengaluru
Reaching for the stars, not the spout: The role of the superior colliculus in skilled forelimb control.

Suparna Ghosh-Jerath | Lead PI, Clinical & Public Health Research
The George Institute of Global Health, New Delhi
Evidence-supported data-driven sustainable food systems solutions to address malnutrition in tribal communities of India

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19:00 — Networking Dinner (Poolside)

DAY 3: 18TH JULY 2025

9:25	Announcements

Session 8

9:30 - 10:30

Chairperson:
Gautam Menon
EFC Committee, Departments of Physics and Biology, Ashoka University, Sonipat, India

Richa Rikhy | Senior Fellow
Indian Institute of Science Education & Research, Pune
Role of mitochondrial fission in gastrulation in embryogenesis

Diya B Joseph | Early Career Fellow
Institute of Stem Cell Biology, Bengaluru
Uncovering the urethra's multi-faceted arsenal for immune defense

Venkatesan Chakrapani | Lead PI, Team Science Grant
Humsafar Trust, Mumbai
Advancing LGBTQ+ Health Equity: The CARET Consortium's Integrated Approach

10:30 - 11:00 Break

Session 9

11:00 - 12:20

Chairperson:
Robert Read
CPH Committee Chair of Infectious Diseases, University of Southampton, UK

Kamlesh Pawar | Early Career Fellow
Shiv Nadar University, Haryana
Small RNAs, big impact: Decoding tRNA-derived fragments in macrophage response

Abhishek Mazumder | Intermediate Fellow
Indian Institute of Cell Biology, Kolkata
Unravelling the Dynamics of Molecular Machines in Live Cells using single particle tracking-FRET

Rachna Chaba | Senior Fellow
Indian Institute of Science Education & Research, Mohali
Interconnection between fatty acid metabolism and stress response in bacteria

Pushkar Sharma | Lead PI, Team Science Grant
National Institute of Immunology, New Delhi
Regulation of division and differentiation of malaria parasite by protein phosphorylation

12:30 - 14:00 Lunch (Patio, Kohinoor Hall))

Meeting Closes

July 17, 2025 *14:00-16:00*	*Katrina Lawson and Madhuri Dutta - meeting with IRMI Fellows + TSG-CRC project managers*	*Kohinoor Hall*
July 17, 2025 *18:15-19:15*	*Interaction with Early Career Fellows*	*Trinity Hall*

Notes

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