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curating science › creating impact

SCIENCE AS A LEVER FOR VIKSIT BHARAT

Annual Report 2024-2025

#MakingScienceWorkforIndia

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Management Review

Pankaj Chandra

Vice Chancellor - Ahmedabad University
Chairperson - Ignite Life Science Foundation

Science and the New Imperatives for India

What is clear is that science is the foundation of our development – from quality food to quality air, from cooler houses to easier travel, from safer water to healthier living – all require us to build knowledge systems that translate to making lives of people in India and around the world better. The kind of world that we leave for generations to come will define the impact that our times and people will have on our civilization.

What started as a way to address a serious concern regarding funding and supporting of science research in India, Ignite Life Science Foundation (Ignite) has now become a valuable model of science benefitting the society in India. The proof of concept has been established now – when people from the larger society who are concerned about quality of living come together, we are able to make changes in the direction of rapid improvement. What Ignite has been able to show is that when the concern being addressed is critical, when the direction of the change that is sought is significant, when the regime of support is consistent, and when the process is rigorous and pragmatic, then the probability of a positive outcome from scientific thinking is likely to be high.

Science in general, and life science in particular, follows the pathway of patience and deep endeavour. We are delighted that our donors and researchers have that belief. Ignite has successfully managed to bring together a community of concerned citizens, industry partners, and scholars to address some of the challenging questions that our society faces at this juncture. One characteristic of life sciences research is that the gestation period for a discovery and its subsequent translation for use by the society is long and uncertain. However, it must be done. Imagine what would have happened if several decades of research on vaccines for various pandemics like SARS and MERS and some others were not being carried out around the world.

Would we have managed to find a vaccine (or even re-purpose one) so quickly when COVID hit the world? Researchers were already working on a vaccine for the next unknown epidemic. That is how we save the world. That is how we find solutions to old and new challenges that are coming our way. The important issue before us is whether we are preparing the ground well for our next generation of researchers to become ready to carry the torch of innovation forward. Ignite has been at the forefront of this movement and is a change agent in that spirit.

The challenge for India is even more dramatic. Other than climate change, there are two other forces playing out at this juncture – India's growing population will slowly start to age and it is expected that 20 percent of our population (up from 7 percent today) will be above 65 years by the year 2063 [1] ; the second, is the geopolitics of scientific research, their use in making significant discoveries, and the availability of their translation to the larger world. The implication of the former is that health, especially on ageing, nutrition, and agriculture are now the most critical areas of enquiry for us Indians. What we do now will have an impact 25-40 years down the road – a time frame when most current young researchers would be retiring and when the current twenty five year old will start to grey.

This requires building continuously a new generation of researchers to focus on these areas of enquiry. The implication of the latter, the geopolitics of science, has even more deeper implications for India. It appears that the appetite of the world to solve other's problems has surely dried out. Most nations are focusing on their own problems and holding discoveries to themselves or are being offered at a cost that most "others" will not be able to afford. India will have to become self-reliant in its own scientific discoveries and more important their translation into products and services. India has the potential of providing such products and services based on our scientific research to developing countries around the world. This is 'that' moment where products developed in Indian laboratories and produced by Indian firms can become a reality provided the entire ecosystem supporting life science and related research can come together with utmost urgency.

Ignite Life Science Foundation has developed very robust scientific and managerial processes that allow it to become the catalyst that is working to bridge these gaps. It is creating partnerships between philanthropists who are ready to play the long inter-generational game and generations of Indian researchers who have the hunger and capabilities to work on improving lives and nature. We invite you to participate with us in this very critical journey towards building a healthy future for all.

[1]https://www.pewresearch.org/short-reads/2023/02/09/key-facts-as-india-surpasses-china-as-the-worlds-most-populous-country/

Ramaswamy Subramanian

Director - Bindley Science Center,
Purdue University &
Chairperson Ignite's Scientific Advisory Board

Science, as we understand it today, was primarily driven by the innate curiosity of individuals, even before they were formally recognized as scientists. As explorers ventured into the vastness of the world, they encountered countless phenomena that remained unexplored, making the pursuit of uncovering the known unknowns the cornerstone of scientific endeavor. Governments recognized the immense potential of science, particularly within the military-industrial complex, and gradually extended their investments to other sectors such as agriculture and human health.

Despite the initial focus on curiosity, academic institutions remained the primary drivers of “knowledge generation and dissemination.” Vannevar Bush aptly encapsulated the role of these institutions, stating that they were entrusted with the responsibility of conserving the accumulated knowledge of the past, imparting it to students, and contributing to the generation of novel knowledge across various disciplines. These institutions provided a relatively free environment for scientists to work, free from the constraints of convention, prejudice, or commercial necessity. At their peak, they fostered a strong sense of solidarity and security among scientists, along with a substantial degree of personal intellectual freedom. These factors were crucial in the development of new knowledge, as much of it inevitably faced opposition due to its potential to challenge prevailing beliefs or practices.

However, the practice of scientific research is predominantly driven by disciplines. Knowledge generation is often separated from its practical applications for the common good or entrepreneurial endeavors. The Bayh-Dole Act of 1980 represented a significant attempt to address this issue and encourage academic institutions to pursue the translation of scientific knowledge into economic activity. The rationale behind this legislation is that if academic institutions own the knowledge, they can create economic enterprises from it, thereby fostering faster growth and development. The benefits of public funding remain paramount in this endeavor, as exemplified by Mariana Muzzacato’s book “The Entrepreneurial State.” Despite the enactment of the Bayh-Dole Act, 45 years on, it remains clear that no university in the United States primarily supports its scientific activities through its own economic activities.

In the Indian context, total research support is less than 1% of GDP, which is below the threshold for creating a significant impact. The problem is complicated by the fact that most of this 1% comes from the public exchequer. The percentage of industry-funded research (not development) and philanthropy-funded research is very small. To complicate matters, government investments have shifted to a significant focus on translational research, while very little is available in Indian basic science to translate. If the focus in India shifts from funding translational research to funding “problem solving” at all levels—basic and translational—significant opportunities still exist. I argue for this approach below:

Although there are still known unknowns, the complexity of human endeavors, along with the technological advancements and progress we have achieved, has also created new challenges. Climate change serves as a prime example. The adoption of food and feed production (agriculture), health practices, environmental transformations, and the concurrent growth of the human population requires addressing a wide range of new challenges—the survival of our species and the preservation of our planet.

The prevailing expectation that science and technology will solve problems has become an unchallenged assumption among the general public. To meet these expectations, we must reconsider our approach to scientific inquiry. While we should not abandon curiosity-driven science, it is equally crucial to explore alternative methodologies.

My preferred approach was refined through a thoughtful process following the Special Academic Cooperative (SpARC) meeting on climate change and its impact on agriculture. While the Green Revolution and scientific advancements have enabled us to sustain the growing population, the unpredictability of climate change has transformed farming into a gamble. During the discussion, I posed a question to the scientists present, who had a wealth of ideas: why couldn’t we engineer or breed plants to adapt to climate change? Despite the absence of a clear solution, the problem was well-defined. This prompts the question: what are the technological bottlenecks that hinder our ability to solve this problem? What knowledge gaps (known unknowns) prevent us from achieving this goal? Once these gaps are clearly defined, a new scientific approach emerges: basic science to fill the knowledge gaps, translational science to develop technologies, and their integration to solve the problem. This focused approach to knowledge generation and technological innovation necessitates the collaboration of multi-disciplinary scientists from the outset. We must move beyond disciplinary boundaries and form teams with varying expertise in a multidisciplinary manner. Additionally, we must engage with stakeholders, such as farmers, policymakers, economists, and others involved in the agricultural sector. This collaborative approach can lead to the development of novel knowledge, technologies, and their potential impact beyond the problem being addressed. This mission-driven approach to knowledge generation and technological innovation is imperative for the future of humanity and our planet.

The pressing question looms large: can our academic institutions vigorously adopt this transformative approach? Must we urgently modify the evaluation metrics for faculty and students, shifting their focus from mere expertise within disciplines to the contributions of knowledge and technology? Can we boldly implement alternative funding models for science? The very future of humanity and our planet is at stake!

Ignite Life Science Foundation and its donors recognize that the way we do science is changing rapidly and are committed to quickly adapting to meet the needs of scientists in solving problems in India.

Shravanti Rampalli

CEO

Ignite Life Science Foundation

Annual Review

As I reflect on Ignite's journey and look ahead to where we are headed, I'm inspired and deeply thoughtful. Having recently taken on the role of CEO, I have spent time engaging with a diverse group of stakeholders—from scientists and policymakers to writers, philanthropists, and thought leaders. These conversations have sharpened my perspective on the broader scientific ecosystem and where Ignite can truly make a difference.

One theme that continues to surface is the fragmented way in which science is often perceived and practiced. Across regions—including the West and many other parts of the world—science is too often approached in silos. The divide between basic science and translational science is repeatedly emphasized, and while these distinctions can be useful, they also risk limiting our collective potential. Personally, I do not view basic and translational science as separate ends of a spectrum. I perceive them as part of a continuum—a circle, where each element feeds into and strengthens the other. High-quality basic science establishes the foundation for meaningful translation.

And the needs and challenges of translation, in turn, generate new questions for fundamental research. This belief will guide how we shape Ignite's future. We are here not only to support excellent science but also to connect the dots—to build a system where discovery and impact coexist, and where innovation is regarded not as a final destination, but as a continuous, evolving journey.

India's investment in research and development (R&D) has increased over the past decade. However, R&D spending has remained stagnant at around 0.7% of GDP. Bureaucratic hurdles—such as limited funding and inefficient use of allocated resources—have negatively impacted the quality of scientific output, including patents and innovations that could drive national growth. Compounding the issue, private sector investment in R&D remains minimal. As a result, India's scientific ecosystem remains relatively small compared to countries like China and those in the West. The overall quality of scientific research and the patents emerging from India often fall short of global standards. To break out of this cycle, it is essential for academia and the private sector to collaborate more closely and build a robust, high-quality R&D environment that supports India's innovation and growth ambitions to meet the national needs. This year's annual report is centered around the theme of 'Leveraging Science for Viksit Bharat' —a vision of a developed India. At Ignite, we firmly believe that science is the driving force behind this transformation. Without scientific advancement, the dream of a Viksit Bharat remains incomplete. Aligned with this national mission, our goal is to catalyze change by enabling the funding and execution of life science research that delivers meaningful societal impact. Over the past four years, we have supported a range of scientific projects and provided equipment to several government research organizations, including IITs, IISERs, and national institutes across India—extending our reach to the northeastern regions as well.

With the philanthropic and CSR funds raised so far, at Ignite we have invested in three key areas: funding high-quality scientific research, building robust scientific communities to promote a research culture in India, and supporting fellowship programs to help students broaden their global scientific networks, thereby creating a scientific pipeline for the future. Our projects focus on addressing critical national challenges in health, environmental sustainability, and the challenge of economic dependence on imports. In the agricultural sector, we are working on advancing nitrogen fixation solutions to reduce reliance on fertilizers (for which imported natural gas is the feed stock, amongst other dependencies). Field trials are currently underway using newly identified bioformulations designed to enhance crop yields. This approach not only eases financial pressure on farmers but also mitigates soil and water contamination. Our initiatives include a significant step forward in the agriscience domain by organizing a Special Academic Research Cooperative (SpARC) meeting in collaboration with ITC Ltd. This major project brought together key stakeholders from the agricultural community to identify "known unknowns" and explore other blue-sky ideas in the field. The event was incubated over many months of careful planning and is the start of a potentially major multi-year programme, fostering a collaborative network focussed on tackling pressing issues in agriculture and enhancing food security in India in the face of climate change. In the area of antimicrobial resistance (AMR), we are funding research on developing vaccines to combat antibiotic-resistant infections, using cutting-edge technologies. Animal studies are underway to evaluate the efficacy of these vaccines against life-threatening microbial infections. For neurodegenerative diseases, our efforts are centred on early detection and treatment. We employ a range of strategies, including studies focused on the Indian population, to address the growing burden posed by an ageing demographic. All of these initiatives are at various stages of development, reflecting our commitment to drive impactful, research-based solutions for national priorities.

As part of our nation-building efforts, we support research scholars in attending international conferences through the Eklavya - Ignite Travel Fellowship, generously supported by Sunil Handa of Eklavya Education Foundation. We believe that such global exposure helps nurture well-rounded scientists who not only excel academically but also contribute to raising the overall standards of scientific research in India. This, in turn, leads to stronger outcomes and a more vibrant scientific ecosystem. While we have received an overwhelming number of applications for the Eklavya-Ignite Travel Fellowship, we have observed that most applicants come from premier research institutions, often based in Tier 1 cities. This has highlighted a significant gap, in that, many deserving scholars from Tier 2 cities and regional universities remain underrepresented. We firmly believe that exceptional scientific talent exists across the country, not just within the top-tier institutions. Just as India has unearthed sporting and musical excellence from its interior regions, we are confident that untapped scientific potential lies in these areas as well. To bridge this gap, we are proud to launch the Ignite National Travel Fellowship Scheme - an initiative designed to connect promising young researchers from Tier 2 cities with the broader Indian scientific community.

Science philanthropy is still evolving in India, making it difficult to secure support for long-term, intangible outcomes. Convincing donors to invest in future-oriented, complex research is a significant challenge. However, we are encouraged by visionary supporters - Kiran Mazumdar - Shaw, Nadir Godrej, Smita Crishna - Godrej, Raju Barwale, Dr. Reddy's Laboratories, Kotak Mahindra Capital Company, and several others, who are helping us build this culture. Scientific progress is slow, uncertain, and resource-intensive, but it is through such processes that transformative innovations emerge. Despite the obstacles, we are systematically tackling these issues with guidance from our Scientific Advisory Board - renowned institution builders with strong networks in India and abroad - who assist us in fostering interdisciplinary collaboration and addressing critical national needs. We believe that organizations like Ignite can play a vital bridging role in addressing these scientific challenges and contributing to the vision of Viksit Bharat. While science philanthropy is new in India, the country has a deep-rooted culture of giving. We view this as a promising opportunity to build a movement that not only enhances lives in India but also contributes to global well-being. These initial steps, though challenging, are both exciting and vital.

Year at a glance

Ignite has supported a total of 36 research projects, comprising 26 ongoing and 10 concluded initiatives. In addition, 3 equipment grants have been awarded to strengthen the research infrastructure. The following section provides an overview of all currently funded projects.

Platform Technologies

A major focus of our funding is to support the replication, development, and accessibility of platform technologies that are crucial for public health and serve as key enablers of cutting-edge scientific research in India. One of our flagship initiatives in this area is the support for mRNA vaccine technology development and validation at IISc Bengaluru, led by Dr. Raghavan Varadarajan and team, a need that gained urgency during the onset of the COVID-19 pandemic. This three-year project has now progressed to the stage where candidate vaccines are undergoing the next phase of animal testing at THSTI, Faridabad under the guidance of Dr. Amit Awasthi and team. The platform is being strengthened and repurposed for use for other infectious disease vaccines. This work envisions the development of an innovative platform for creating vaccines targeting major pathogenic infections. Currently, a vaccine for the Nipah virus is being developed in IISc, Bengaluru in the laboratory of Dr. Raghavan Varadarajan. Over the next few years we will identify and fund other similar enabling and platform technologies where India needs to catch up with other countries.

SR. NO.	PROJECT NAME	INVESTIGATOR	CO-PRIMARY INVESTIGATOR (CO-PI)
01	Towards an mRNA vaccine platform	Prof. Raghavan Varadarajan, IISc, Bengaluru	Dr. Mrinmoy De, IISc, Bengaluru Dr. Siddharth Jhunjhunwala, IISc, Bengaluru Dr. Amit Awasthi, Translational Health Science and Technology Institute, Delhi

Antimicrobial Resistance (AMR)

Antimicrobial resistance (AMR) is a growing global health crisis, threatening the effectiveness of life-saving treatments and routine medical procedures. As bacteria and other pathogens evolve to resist existing drugs, once-treatable infections are becoming harder and sometimes impossible to cure. With projections of AMR-related deaths reaching 10 million per year by 2050, urgent action is needed to develop new therapies, rethink antibiotic use, and strengthen surveillance. Addressing AMR is not only a medical imperative but a societal one, demanding coordinated efforts across sectors and countries. To this end we have funded early stage projects in laboratories across the country that can help us understand and design new solutions that can block this epidemic. We have supported a range of projects aimed at tackling tough-to-treat forms of tuberculosis, including approaches that target dormant bacteria and new strategies that weaken the bacteria by disrupting their metabolism, making treatments more effective.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	SERS - based rapid identification of fungal isolates	Dr. Vivekanandan Perumal, IIT Delhi	Dr. Dalip Singh Mehta, IIT Delhi Dr. Anuradha Chowdhary, V. P Chest Institute, Delhi Dr. Arijit Pal, Kusuma School of Biological Sciences, IIT
02	Developing a candidate mRNA vaccine against the Nipah virus	Prof. Raghavan Varadarajan, IISc, Bengaluru	Dr. Siddharth Jhunjhunwala, IISc, Bengaluru Dr. Mrinmoy De, IISc, Bengaluru Dr. Amit Awasthi, THSTI, Faridabad
03	In vivo potency of the recombinant expressed marine bacteria BAL in the lung infection and diabetic wound healing model	Dr. Mukesh Pasupuleti, CSIR- Central Drug Research Institute, Lucknow	Dr. Ratnasekhar CH, CSIR-Central Institute of Medicinal Aromatic Plants (CSIR-CIMAP)
04	Metabolic intoxication as a novel strategy for adjuvant therapy to eliminate Mycobacterium tuberculosis	Dr. Raju Mukherjee, IISER Tirupati	Dr. Kiran Kumar Pulukuri, IISER Tirupati
05	Targeting type III toxin-antitoxin RNP complex assembly as a potential antibacterial strategy	Dr. Mahavir Singh, IISc, Bengaluru	
06	Towards elimination of Mycobacterial persisters through a prodrug approach	Dr. Amit Singh, IISc, Bengaluru	Dr. Harinath Chakrapani, IISER, Pune

Neurodegeneration

Neurodegenerative diseases like Alzheimer's and Parkinson's are becoming an increasing health concern in India as the population ages. These diseases cause a gradual decline in cognitive and motor functions, severely impacting the quality of life for patients and placing a heavy emotional and economic burden on families and the healthcare system. With currently limited treatment options and no known cures, there is an urgent need to invest in research that unravels the underlying causes of neurodegeneration, identifies early biomarkers, and develops effective therapies. The projects we support cover a variety of important research areas, such as creating easier and less invasive ways to detect Alzheimer's disease in elderly people using advanced technology, studying how the brain responds to smells to identify Alzheimer's markers, and developing new treatments to prevent brain damage.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Prevention of ferroptosis by artificial GPX4: A novel strategy for the treatment of hemorrhagic stroke	Dr. G. Mugesh, IISc, Bengaluru	Dr. Dalip Singh Mehta, IIT Delhi Dr. Anuradha Chowdhary, V. P Chest Institute, Delhi Dr. Arijit Pal, Kusuma School of Biological Sciences, IIT
02	Revealing circuit biomarkers in Alzheimer's disease using olfactory stimulation	Dr. Debanjan Dasgupta, IIT Kanpur	Dr. Ashutosh Modi, IIT Kanpur
03	A dual-platform approach combining Raman spectroscopy and proteomics for minimally-invasive biomarker discovery in Alzheimer's disease: A focus on the elderly population of South India	Dr. Baby Chakrapani P S, Cochin University of Science and Technology	Dr. Yoosaf Karuvath, Cochin University of Science and Technology Dr. Tara Sudhadevi, Cochin University of Science and Technology Dr. Keshava Prasad T S, Yenepoya Deemed to be University, Mangalore
04	Hunting for novel pharmacological targets against Huntington's disease	Dr. Bhavani Shankar Sahu, National Brain Research Centre	
05	A novel strategy for identification of modifiers and drugs to halt age-dependent trans-cellular propagation of pathogenic tau aggregates and associated impairments	Dr. Surajit Sarkar, University of Delhi South Campus	
06	Transforming nanoscale molecular landscape to delay the onset of Alzheimer's disease	Dr. Deepak Nair, IISc, Bengaluru	Dr. Akkattu T. Biju, IISc, Bengaluru

Agricultural Science

Agricultural science is vital to building a sustainable and secure food future by improving crop productivity, enhancing nutritional quality, and reducing the environmental impact of farming. With climate change intensifying pest and disease threats, it is critical to develop more resilient crops. Scientific advances are also helping reduce harmful compounds in food, making it safer and healthier. We are working on advancing nitrogen fixation solutions to reduce reliance on fertilizers and improving how plants absorb and use nitrogen. We support research on genetic enhancements and beneficial bacteria to boost nitrogen fixation, along with projects improving resistance to diseases like blast in pearl millet and bacterial wilt in tomatoes.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Role of Rhodotorula mucilaginosa JGTA-S1 in the release of its endosymbiotic microbes to modulate rice microbiota and improve nitrogen nutrition by bacterial-fungal-plant three-kingdom interaction.	Dr. Anindita Seal, University of Calcutta	
02	Improving rice genetics and its ecosystem through genome engineering and bioagents to reduce dependency on chemical N2 fertilizer	Dr. Kutubuddin Molla, ICAR-NRRI, Cuttack	Dr. M.J. Baig – ICAR-NRRI, Cuttack Dr. Arup Mukherjee, ICAR-NRRI, Cuttack Dr. Totan Adak, ICAR-NRRI, Cuttack Dr. Jitendriya Meher, ICAR-NRRI, Cuttack
03	A proposal on the investigation of evolutionary connection between thermotolerance and dispersal syndrome in a model dipteran insect	Dr. Bodhisatta Nandy, IISER Berhampur	
04	Deciphering marker – trait associations for blast disease resistance in pearl millet	Dr. Pulluru Sanjana Reddy, Indian Institute of Millets Research, Hyderabad	Dr. Avinash Singode, Indian Institute of Millets Research, Hyderabad
05	Engineering bacterial wilt resistance in cultivated tomato genotype using lectins as a tool	Dr. Eswarayya Ramireddy, IISER Tirupati	
06	Increasing nitrogen use efficiency via modulation of Phytoglobins	Dr. Jagadis Gupta Kapuganti, National Institute of Plant Genome Research, New Delhi	

Translational Research

One of the key challenges in Indian science is the lack of a strong ecosystem to support the translation of research findings into real-world applications. While applied research is actively promoted, many discoveries remain unused due to missing links that drive them toward development. To help bridge this gap, we have adopted a focused approach through our Early Translational Research (ETR) grants, which not only provide funding but also mentorship from our industry-experienced Scientific Advisory Board. Supporting translational projects ensures that innovations reach the people who need them most, improving lives and strengthening public systems.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Targeting Morf4l2 alternative splicing to prevent cardiac cachexia	Dr. Shashi Kumar Gupta, CSIR- Central Drug Research Institute, Lucknow	Dr. Kinshuk Raj Srivastava, CSIR- Central Drug Research Institute, Lucknow
02	Discovery and development of a novel Hv1 channel inhibitor to alleviate chronic pain	Dr. Aravind Kshatri, CSIR- Central Drug Research Institute, Lucknow	Dr. Prem Yadav, CSIR- Central Drug Research Institute, Lucknow Dr. Atul Goel, CSIR- Central Drug Research Institute, Lucknow

Biodiversity

Biodiversity is essential for maintaining healthy and resilient ecosystems, especially in the face of environmental change. Rather than focusing solely on dense tree planting or carbon capture, restoration efforts today are increasingly emphasizing the importance of recreating native habitats in all their diversity. The initiative we have funded builds on lessons from an existing Miyawaki mini forest but takes a more ecologically holistic approach. The restoration plan aims to recreate a miniature version of the region's diverse native ecosystems, including open natural habitats, rather than focusing solely on dense, carbon-centric tree planting. This method fosters greater biodiversity, supporting a wider range of plant and animal life and helping to preserve the area's unique ecological balance.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Planning for adaptive ecological restoration and nature-based solutions in peri-urban and rural warehouse sites	Dr. Jagdish Krishnaswamy, Indian Institutes for Human Settlement (IIHS), Bengaluru	

Computational Systems Biology

Computational systems biology is an important field that uses computer-based tools to study complex biological systems and their interactions. By analyzing large amounts of biological data, it helps us understand how different parts of living organisms work together. This holistic approach is essential for advancing knowledge in health, agriculture, and environmental science, making it a valuable area for ongoing research and innovation. In a country like India, where resources must be used efficiently, this approach allows researchers to make data-driven predictions, reduce trial-and-error in experiments, and accelerate discoveries in health, agriculture, and environmental science. By supporting this area, we can foster innovations that are not only scientifically advanced but also practical and impactful for real-world challenges.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Limits of adaptation in an ecological community	Dr. Supreet Saini, IIT Bombay	Dr. K. V. Venkatesh, IIT Bombay
02	Targeting regulators of phenotypic plasticity to inhibit cancer progression	Dr. Riddhiman Dhar, IIT Kharagpur	Dr. Mohit Kumar Jolly, IISc, Bengaluru

RNA Biology

RNA biology is the study of RNA, a fundamental molecule that plays many important roles in living cells, including carrying genetic information and regulating how genes are expressed. Unlike DNA, RNA is involved in a wide range of processes that influence cell behavior and health. Research in RNA biology helps us better understand diseases and develop new medical treatments, such as vaccines and gene therapies. We fund projects that explore new ways to treat diseases, such as developing advanced RNA-based platforms as therapeutics. We also support work on new vaccination strategies to protect against tuberculosis, aiming to improve how well vaccines work and keep people healthy.

SR. NO.	PROJECT NAME	PRIMARY INVESTIGATOR	CO-PI
01	Expanding therapeutic horizons: A self-amplifying mRNA-LNP platform for protein therapeutics	Dr. Srinivasa Reddy Bonam, CSIR-Indian Institute of Chemical Technology	
02	Development and preclinical evaluation of heterologous prime boost vaccination strategies against tuberculosis	Dr. Garima Khare, University of Delhi South Campus	Prof. Raghavan Varadarajan, IISc Bengaluru

Outcome Metrics: Patents/Research Publications/Awards

PATENTS

G. Mugesh

of Indian Institute of Science, Bengaluru filed the patent titled "**Organoselenium compounds, preparation, and implementations thereof**", along with co-inventors **B. N. Sharath Babu and S. Das**, under the application number **PCT/IN2025/050164**.

RESEARCH PUBLICATIONS

Jagadis Gupta Kapuganti

of National Institute of Plant Genome Research, Delhi has published his work on "**Increasing nitrogen use efficiency via modulation of Phytoglobins**" in the **Journal of Plant, Cell & Environment.**

Reference: **Samant, S. B., Swain, J., Yadav, N., Yadav, R., Singh, P., Rai, P. et al**. Overexpression of Phytoglobin1 in rice leads to enhanced nitrogen use efficiency via modulation of nitric oxide. **Plant Cell Environ. 48, 2755–2768 (2025)**.

https://doi.org/10.1111/pce.15289

Anirban Banerjee

of Indian Institute of Technology Bombay has published his work on "**Molecular nanomachine that acts as a bacterial shredder inside host cells**" in **Nature Microbiology.**
Reference: **Ghosh, S., Roy, S., Baid, N. et al. Host AAA-ATPase VCP/p97** lyses ubiquitinated intracellular bacteria as an innate antimicrobial defence. **Nat Microbiol 10, 1099–1114 (2025)**.

https://doi.org/10.1038/s41564-025-01984-y

Awards

Raghavan Varadarajan

of Indian Institute of Science, Bengaluru was awarded the **Tata Transformation Prize** in December 2024 and was the winner in the Healthcare category. The prize is for supporting breakthrough innovative technologies that address India's greatest challenges.

Kutubuddin Molla

of ICAR-National Rice Research Institute has been selected for the prestigious **Indian National Science Academy - INSA Associate Fellows 2025**. The award is given to scientists who show exceptional potential in leadership for research.

Siddhesh Kamat

of IISER, Pune has been awarded the **Infosys Prize 2024** in Life Sciences for his discoveries concerning bioactive lipids and their receptors, and their metabolic and signalling pathways.

iGEM Project PETAL - IISER Thiruvananthapuram

As part of Ignite's bridge funding support to the "**iGEM Project PETAL**," the team led by **Dr. Ravi Maruthachalam** from IISER Thiruvananthapuram achieved notable recognition at the iGEM Grand Jamboree in Paris, securing a Gold Medal, along with awards for Best Fashion and Cosmetic Project and Best Project Promotion Video.

Travel Fellowships

The Travel Fellowships are designed to support researchers and students by providing financial assistance for travel related to academic and scientific activities. Our initial donor was **Sunil Handa of Eklavya Education Foundation**. Students could avail the Eklavya - Ignite Travel Fellowship.

This fellowship helps recipients to attend conferences, workshops, and meetings, enabling them to share their work, learn from others, and build valuable networks. Recently, the **Centre for Cellular and Molecular Platforms (C-CAMP)**, has also been supporting this initiative reflecting a collaborative effort to nurture and promote scientific talent and collaboration across India.

SR. NO.	NAME	AFFILIATION	TOPIC	CONFERENCE NAME
01	Bhavna Pydah	National Centre for Cell Science, Pune	"Neural expression of Toll pathway regulates lipid metabolism in Drosophila"	Toll 2024 Conference, Rotterdam, Netherlands
02	Soumyajit Dutta	IISER Pune	"An amphipathic helix in Mycoplasma FtsZ can bind to membrane in-vitro"	EMBO Workshop-Archaeal and bacterial cell division: Beyond the Z-ring, Alcobaça, Portugal
03	Sandhya Singh	CSIR- Central Drug Research Institute, Lucknow	"Musashi-2 induces cardiac hypertrophy and heart failure by inducing mitochondrial dysfunction through destabilizing Cluh and Smyd1 mRNA"	Frontiers in CardioVascular Biomedicine (FCVB) 2024, Amsterdam, Netherlands
04	Divya Pidishetty	L.V. Prasad Eye Institute, Hyderabad	"Retinal Degeneration and visual function defects in Stargardt disease model of Zebrafish"	The Association for Research in Vision and Ophthalmology, Seattle, USA
05	Rabi Sankar Pal	IISER Berhampur	"Selection for faster development and early reproduction ameliorates the cost of reproduction in males, but not in females"	3rd Joint Congress on Evolutionary Biology (Evolution 2024)
06	Arjun Pal	The University of Burdwan	"Genetic structure of Culicoides peregrinus Kieffer, a potential BTV vector in India"	XXVII International Congress of Entomology, Kyoto, Japan
07	Dr. Jayashree Mazumdar	IISc Bengaluru	"Food sharing and tool use in Nicobar Long-Tailed Macaques: Ecological and social influences"	Eastern African Association for Palaeoanthropology and Palaeontology, Ethiopia
08	Sourabh Biswas	IISER Kolkata	"Adapting to the Concrete Jungle: Scavengers in Human-Dominated Landscapes"	The International Society for Behavioral Ecology (ISBE) Congress 2024, Melbourne, Australia
09	Arkaprava Mandal	IISER Kolkata	"Exploring the benthic foraminiferal community to highlight mangrove restoration strategies across the Sundarbans"	The International Mangrove Conservation and Restoration Conference, Abu Dhabi, UAE
10	Nishi Kumari	IISc Bengaluru	"A chimeric vaccine formulation targeting Influenza and COVID-19"	Keystone Symposia on "Positive Strand RNA Viruses: Interdisciplinary Advances in Virology, Pathogenesis, Immunology, and Technology Development", Ireland
11	Neilah Firzan C.A	BRIC-Rajiv Gandhi Centre for Biotechnology Kerala	"Fabrication of mirror image nanopores at molecular and cellular level"	Single Molecule Protein Sequencing conference 2025, Italy
12	Shivam Sahu	CSIR-CDRI Lucknow	"Structural and computational approaches to understand enzyme catalytic efficiency and identification of novel inhibitor molecules"	CCP4 Study Weekend 2025 entitled "Using software, AI and other methods to advance macromolecular models", Nottingham, UK
13	Prerna Narwal	IISc Bengaluru	"Stress granules buffer immunogenic dsRNA released from mitochondria during translation inhibition"	69th Annual Meeting of the Biophysical Society, Los Angeles, USA
14	Amit Kumar	Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru	"Topoisomerase 1 is required for the development and function of thymus"	Immunology 2025, Honolulu, USA
15	Chakresh Kumar	IISER Kolkata	"Metagenomic insights into the functional microbial diversity of the lower stretch of the River Ganga: mapping antibiotic and metal resistance genes"	AquaEcomics, France

Building Nationwide Scientific Communities through Special Academic Research Cooperative (SpARC) meetings

Generating cutting edge ideas in science requires interdisciplinary brainstorming and participation. In order to promote this in a systematic way, we assemble groups of scientists with overlapping interests to form what we call "**academic research cooperatives**" as a means to connect silos of knowledge and generate new ideas at the interface. **Special Academic Research Cooperative (SpARC)** meetings provide a platform for interaction and innovation by bringing in leading experts and facilitating solutions for the pressing challenges of our nation.

Our completed SpARC meetings:

SR. NO.	NAME OF SPARC	DATE	VENUE	NO. OF PROPOSALS FUNDED
01	Computational Systems Biology	12-13 July 2024	Indian Institute of Technology Madras	2
02	RNA Technology	25-26 October 2024	Indian Institute of Science, Bengaluru	2
03	Ignite-ITC Agriscience	27-29 April 2025	ITC Kohenur, Hyderabad	TBD

Our upcoming SpARC meetings:

SR. NO.	NAME OF SPARC	DATE	VENUE
01	Spice Pharmacology	4-5 July 2025	National Centre for Biological Sciences
02	Push Translational and Drug Discovery Workshop	TBA	TBA
03	Drug Delivery	TBA	TBA

The interdisciplinary perspectives sparked many ideas for collaborations on new ideas. Many of these ideas may not have been nucleated if the conversation between specialists from different fields had not been organized. It builds on Ignite's initiatives in using SpARC as a platform where such interdisciplinary conversations and ideation take place.

(TBD: To be decided / TBA: To be announced)

New Initiatives of Ignite

Equipment Grant

Ignite supported science not only for core projects but also to supported to fund the procurement of necessary equipment for high-quality research. It is necessary that science is accompanied by advanced equipment to prove the hypothesis facilitating the progress of investigation.

Anuradha Talukdar, Cachar Cancer Hospital and Research Centre, Silchar, Assam
Equipment: **Cryostat for use in "Evaluating the diagnostic accuracy of frozen section (FS) analysis compared to routine histopathological examination (HPE) for solid tumors"**

Donor: Name withheld on request

Siddhesh Kamat and Dr.Harinath Chakrapani, IISER Pune Equipment: Multi-mode Plate Reader for **"High-Throughput Screening for Inhibitors of Novel Druggable Enzyme Targets"**

Donor: Indian Oil Corporation and Teekays Foundation

G. Mugesh, IISc, Bengaluru
Equipment: **Multiplate Reader** with absorbance, fluorescence, and luminescence capabilities essential for laboratory experiments that will increase throughput and accelerate experiments.

Donor: Indegene

Ignite National Travel Fellowship

India's research ambitions are constrained by underperforming universities, especially in Tier 2 cities, despite hosting a large and diverse pool of research students. Many of these students lack exposure to research culture due to funding and access limitations. Ignite addresses this gap by offering fellowships to university students to attend national conferences and workshops. This initiative promotes skill development, fosters collaboration, and empowers under-represented students, ultimately strengthening India's academic research ecosystem.

Science In Everyday Life

Cognitive Gastronomy: Where Food Meets Data and Culture

"We are what we eat"—our food influences our health, mood, and identity. In a unique sit-down dinner themed “Cognitive Gastronomy – From the Harappan Civilisation till Tomorrow,” Ignite brought together food, science, and data to make aware how climate, culture, and creativity shape what we eat.

Ignite’s Director Bhairavi M. Shibulal, was instrumental in bringing together this eclectic group of like-minded individuals who believe in building the life science ecosystem in India.

The evening served as a culinary journey through time and geography, raised awareness about how climate change is already transforming our food systems. At the heart of the discussion was the idea that cooking, while an art form, is also a data-rich process with implications for nutrition, health, and sustainability. And what we choose to eat shapes our health. Therefore, a deep understanding of our food and food systems is critical.

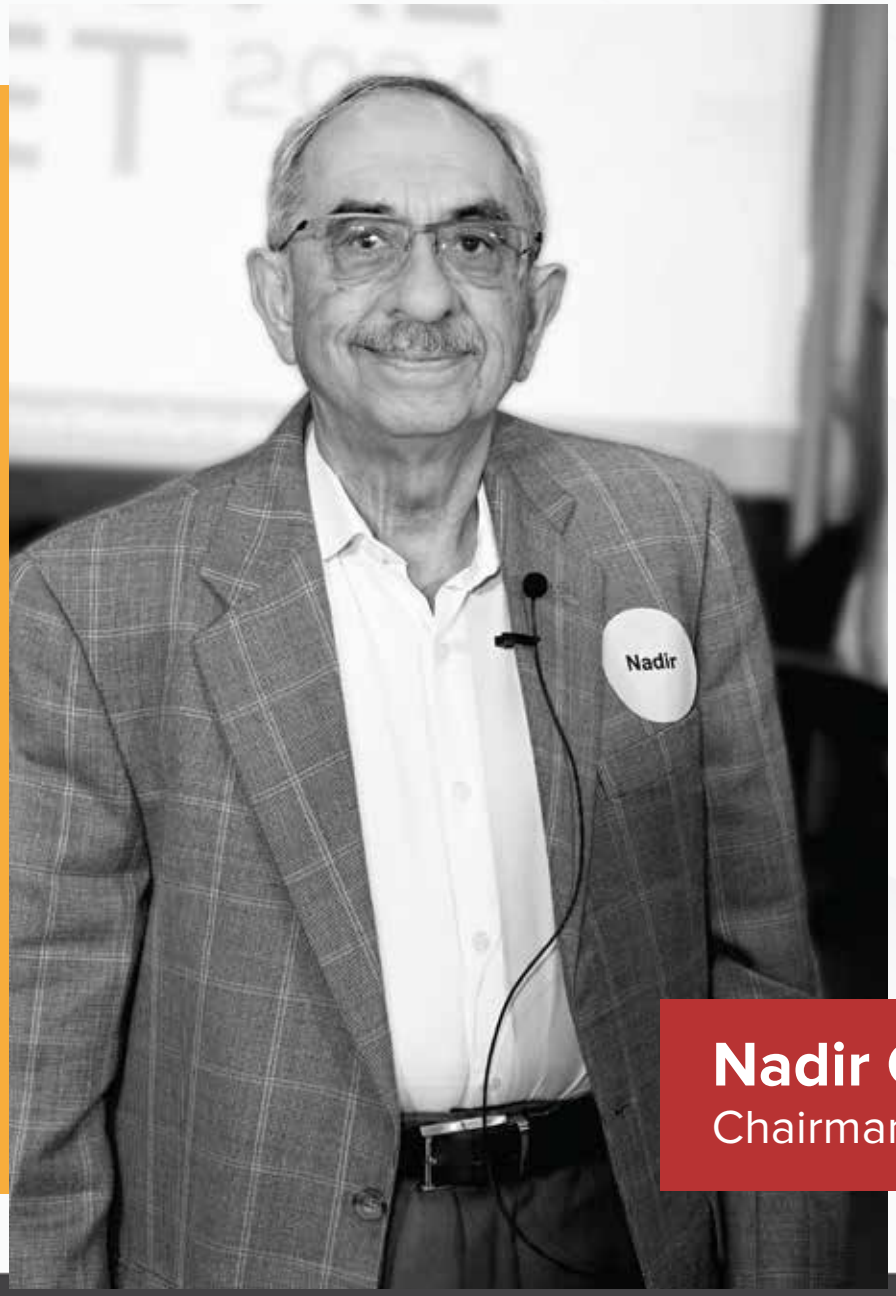
Our hosts were Chef Abhijit Saha and Dr. Ganesh Bagler. Abhijit is a culinary innovator and a sustainable dining advocate, whilst also serving as Chef-Ambassador for the Akshaya Patra Foundation.

Ganesh, is a professor at IIT Delhi, and leads groundbreaking work at the intersection of food and artificial intelligence, establishing key datasets and tools to advance computational gastronomy.

We intend to host similar events in the area of sports and cosmetics.

"The discovery of a new dish confers more happiness on humanity than the discovery of a new star." The Physiology of Taste - Jean Anthelme Brillat-Savarin

Donor Insights



Ignite Building Viksit Bharat: Making Science Work for India.

India is the fastest growing large economy in the world. The Viksit Bharat program envisions India as a developed country by its 100th Anniversary in 2047. Science will play an important role in that vision. India needs to make fundamental breakthroughs in science and it is more beneficial to do this in Universities than in Government Laboratories. Universities have the added benefits of preparing young scientists for the transformation journey.

The purpose of Ignite is to channel philanthropic money for research that helps to solve major problems and adds to our scientific knowledge. The major problems in the world today are climate change, chronic disease and persistent inequality. The first two can be easily addressed by scientific solutions. Poor health, malnutrition, lack of a good education and discrimination prevent people from progressing. While we already have adequate knowledge to formulate social programs, scientific research can contribute to solving these problems.

Ignite is making a significant contribution to advance scientific research and solve major problems. But much more can be done and if all of us work together. We can help India become a scientific power house that successfully enables Viksit Bharat.

Nadir Godrej
Chairman & MD - Godrej Industries

Thematic commentary

Swami Subramaniam

Ignite's Scientific Advisory Board

Can Indian Science Leapfrog The Competition?

At 0.64% of GDP India underspends on R&D versus, for example, 2.58% for China. Since China's GDP is five times that of India, in absolute terms China spends twenty times more than that of what India spends on R&D. Can India afford to spend more? Perhaps, but not substantially more, since India's per capita GDP is 1/6th that of China's, leaving little headroom to increase allocation for R&D given pressing priorities in health, education, defense and infrastructure. India is caught in a low-innovation trap. That is, unless we can increase the productivity of R&D by an order of magnitude.

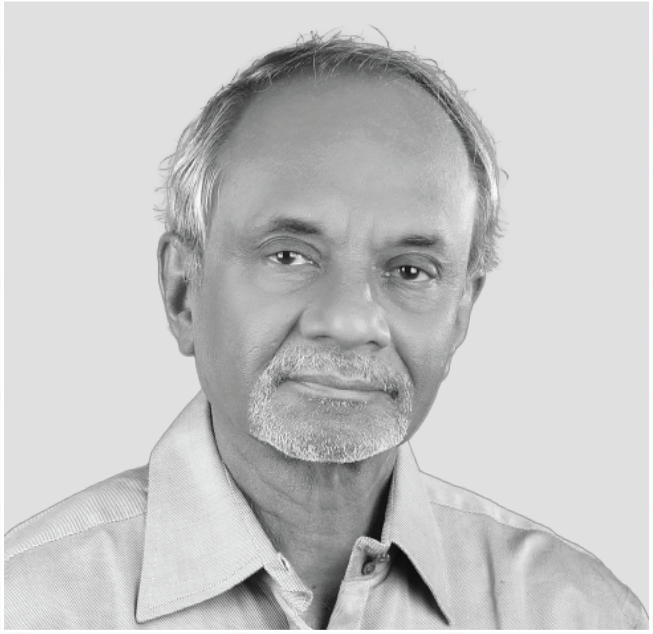
Can India increase R&D productivity? There are several levers India can use to achieve this. First is India's entrepreneurial ecosystem. While India may lack the scale of China's startup ecosystem, India has diversity as an advantage. If this can be strengthened using the business smarts of Indian entrepreneurs it may be possible for Indian companies to pull ahead. India also has geopolitical advantages that have played a role in attracting large numbers of global corporations to offshore their "global capability centres" in India. And then there is the demographic dividend. Our younger population has the potential to feed R&D talent pipelines for decades to come.

While all of the above are supporting structures needed to enable innovation, they are not sufficient. Foundational research in our research institutions has to be supported adequately, since this is the hunting ground where countries either succeed or fail when pitted against each other. Even if we are able to increase funding for foundational research by a significant amount, say by 3X, we will still fall far short of the competition in China, the EU, Japan, Korea and the US. The canvas of opportunities in foundational research is the same for all countries. Countries that invest more and produce more knowledge through foundational research will take away the prize.

This situation leaves a single final option. We can leapfrog the competition if we can improve the quality and efficiency of our research by at least an order of magnitude. Quality and efficiency are not outcomes of larger investments. They are outcomes of superior governance that are focused on the productivity of our research institutions, using every tool available. A simple example that can be generalized to other aspects is the inefficiency and delays in disbursal of funds for research. If a professor at an elite institution is left unfunded for six months it is a colossal waste of the intellect of an entire laboratory that may be composed of 8-13 scientists. This, while competing academics in China or the US are racing ahead to patent their discoveries in the same space. There are many opportunities for improving research productivity, and Indians, whether at ISRO or at our many tech companies, have shown the ability to frugally deliver the highest quality innovation that is competitive with the best anywhere. At Ignite, we are seeding new thinking and new approaches to fund and execute science. We hope some of our experiments will succeed as models for translation into the larger community. For India, success in innovation is an existential need.

Tanjore Balganesh

President - Gangagen Biotechnologies Pvt. Ltd.
Ignite's Scientific Advisory Board



"One Health and AMR": A perspective

In 1945 Alexander Fleming in his Nobel Prize lecture warned that the overuse/abuse of penicillin will very quickly lead to resistance. Surely within a decade resistance to the penicillin was well documented. Resistance to several new antibiotics discovered in the following decades, also emerged rapidly during the 1960s and 1970s. The detailed understanding of this phenomenon led to the discovery of genetic elements that were not only responsible for conferring the resistance, but their transmissible property was also well established. Unfortunately, these findings were treated as a furthering of knowledge rather than being viewed as a stark warning for increasing awareness on the rational use of antibiotics. Today, 'Anti-Microbial Resistance (AMR)' is haunting the very foundations of successful treatments in many therapeutic areas.

The recognition that AMR selection and spread is driven by abuse/overuse of antibiotics was well understood. Yet the response to the challenge has been weak and ineffective. Indeed, the focus on building awareness was only on limiting the use of antibiotics for human use. It was a late realization, only in 2003 following the emergence of SARS, that it was clear that human health must be understood in the context of livestock and wildlife also, thus laying the foundation for an integrated view. The immediate impact of this integrated view was the highlighting of the spread and enrichment of AMR due to the unregulated use of antibiotics in livestock.

The third component being recognized now as the important missing partner in the spread of AMR is the 'environment'. The presence of antibiotic-resistant microbes in the soil of antibiotic virgin territory or antibiotic virgin tribal population was well recognized many decades ago. However, the large-scale use of antibiotics and their presence in the effluent systems/ water bodies of the cities and towns have become selection and breeding grounds for the spread of antibiotic resistance.

Thus, the 'three horses of the apocalypse' that drive and sustain the surge of AMR, need to be viewed together under the "One Health" paradigm. An integrated understanding of their interconnectedness can help build appropriate checks and balances along multiple paths. This can help in designing strategies to effectively contain the spread of AMR.

At Ignite we have been encouraging proposals that detail the understanding of metabolic pathways. which can open novel approaches for discovering novel antimicrobials. The emphasis has been to establish the science behind novel hypotheses that can encourage drug hunting, can vaccines become therapeutics? The Ignite portfolio on AMR also includes novel approaches to the accelerated diagnosis of pathogenic fungi, a much in need tool.

Kottaram Narayanan

Founder-Director - Sthayika Seeds Pvt. Ltd.
Ignite's Scientific Advisory Board

National Science Mission for Sustainable Agriculture and Food Security

Agriculture remains the corner-stone of the Indian economy. It contributes a little over one-seventh to the country's GDP and employs close to half of all the country's work-force. The individual production units may be fragmented and small, but put together, it may well be amongst the largest private enterprises in the country; and considering the work-force involved, perhaps even in the world!

Almost half of India's land area is under the plough, an area second only to the United States, and the varied agro-climatic zones allow for the cultivation of a wide variety of crops over multiple seasons. Over the years since Independence, innovations in crop and animal husbandry have propelled the country from a "ship-to-mouth" existence to a food surplus nation. Today India is a major exporter of agricultural commodities and raw materials. There are, however, many remaining problems and emerging challenges that need immediate attention.

The crop acreages for many crops are among the top among countries, however, the productivity levels have a long way to catch-up. Boosting productivity is inevitable to meet the ever-growing demand, and this has to be achieved in the face of diminishing availability of the primary resources of production, land, water and energy. Climate change has added a new dimension to this challenge. New impediments to productivity are emerging in the form of increased levels and frequency of biotic and abiotic stresses. Climate resilience has to be necessarily factored into any crop and animal improvement programs of the future. Needless to say, all this has to be achieved with minimum cost to the environment, in a nature-friendly way.

The country produces enough staple grains to meet the calorific needs of its population. It even has surpluses to be one of the top exporters of paddy. However, malnutrition is still prevalent and this problem has to be immediately addressed. Diversification of the diet by mainstreaming some of the traditional nutri-cereals is one of the potential solutions. This would entail development of new genotypes which are more productive and innovations in the post-harvest processes to improve the organoleptic properties to suit the modern palette.

The income gap between urban and rural India needs to be bridged through appropriate interventions that augment farm incomes. Industries, allied to primary production, that aim at value addition in the farm, and off the farm have to be promoted, not just to boost the economic contribution, but also to wean away a significant portion of the work-force from low-productive jobs and create opportunities for higher per-capita economic productivity in this sector. This would also ease the torrential migration of rural youth to the cities, putting unsustainable pressure on urban infrastructure, not to mention the widening inequities in regional growth.

Addressing the productivity gaps, satisfying demands in the face of emerging threats due to climate change, eliminating malnutrition, improving farm incomes through value-addition, all need a multipronged solution approach. At Ignite, we believe that science and science-based innovations cutting across the nature and nurture of crops and farm animals are going to be the key to effectively addressing each of these challenges. In keeping with this belief, we have supported several research programs aimed at mitigating the impact of climate change or making the crops more resilient to it. More recently we were able to assemble a group of experts working on multiple domains for a 2-day, brainstorming session on building crop resilience to climate change and come out with proposals for practical, science-based solutions. Given the enormity of the future challenges, and the multidimensional nature of the potential solutions, many more such programs in multiple institutions are needed in the country.

Soumya Swaminathan

Chairperson - M. S. Swaminathan Research Foundation (MSSRF)
Ignite's Scientific Advisory Board

Science: an underused lever of national development

A century of independence that 2047 will represent certainly will call for major national celebration. Appropriately, the vision that beckons us is the aspirational goal of Viksit Bharat. Indeed, it is a dream worth pursuing – and is an attainable one. A key lever for achieving this goal is the deployment of science as a means for accelerating social and economic change. Many targets await our attention - including harnessing the demographic dividend, closing the gender gap, improving health and longevity, ensuring economic security, tackling climate change, and boosting India's global contributions. To reach these objectives, India must foster a culture that values science, supports scientific solutions, and encourages widespread adoption of new technologies beyond just elite institutions.

Achieving all this will require increased investment in science education from the ground up, incentives for impactful research, partnerships with NGOs and the private sector, and greater inclusion of underrepresented groups, especially women. While the government has always been – and will continue to be - the largest investor in scientific education and research, other sectoral players need to emerge in a stronger fashion than they have done hitherto. Private sector firms have to invest much more in basic research which they can then take forward for translation and commercialization. This has been stressed for some years now, and they need to undertake steps with more boldness. The last few decades have seen the emergence of some prominent private universities fostering life sciences and technology courses, and with the initial academic forays by both overseas and Indian investors, there is a promise of many new and young researchers who will fuel future breakthroughs in India. There is also a role for independent, endowment led primary exploration through unique partnerships between research-oriented universities and scientific minds mentored by seasoned veterans of which our country has many, which is what Ignite Life Science Foundation represents.

Expanding government funding for science is essential, as policy and public trust in science shape these investments. The COVID-19 pandemic highlighted the importance of scientific expertise, but misinformation remains a challenge. The government should focus on solving critical problems where market forces fall short, as seen in missions like BioE3 and the National Quantum Mission. The 2025 Union Budget's increased allocation for science and technology and the creation of ANRF are positive steps.

Public investment is especially important in sectors like agriculture, health, and education. Many scientific breakthroughs remain unused due to lack of support for development and scaling. Partnerships with private investors and philanthropists, such as the Tata group, are helping expand science's impact. The government should continue to encourage private investment through incentives and collaborative roadmaps.

Achieving this will require increased investment in science education from the ground up, incentives for impactful research, partnerships with NGOs and the private sector, and greater inclusion of underrepresented groups, especially women.

Perhaps one of the best news that we received recently is that for the first time ever the Science stream in Class 12 had more girls tasting success than the Arts stream, as revealed in an analysis of 66 Education Boards across the country this year. This augurs well for us in our development journey. However, women remain underrepresented in STEM fields, holding only a small fraction of faculty and leadership positions.

Increasing women's participation and leadership in science is vital for better decision-making and fairness. Institutions must implement measures such as mentoring, flexible work options, and support services to retain women, while also addressing the needs of women from diverse backgrounds.

India has already demonstrated scientific leadership in areas like agriculture, space, and healthcare. As the nation looks ahead, it must continue to champion scientific thinking and empower all citizens to contribute to its progress towards becoming a developed country by 2047.

Ignite’s operational strategy

At Ignite Life Science Foundation, our grant selection and funding model is defined by agility, scientific merit, and a commitment to empowering researchers. We deploy a streamlined review process that balances rigour with responsiveness - ensuring that promising proposals are evaluated by domain experts through a robust yet non-bureaucratic framework.

Our funding is released promptly upon approval, with minimal administrative hurdles - allowing scientists to focus on their research rather than paperwork. Beyond financial support, Ignite actively mentors grantees by facilitating access to national and international experts, catalysing collaborations, and helping shape research directions toward societal impact.
To strengthen our internal processes, we continue to enhance operational efficiency and collaborative workflows. One key initiative this year was the introduction of a new grant management system, which streamlines the application and selection process, enabling faster, more transparent, and data-driven decisions.

Donors who invest in Ignite are not just supporting science—they are enabling a catalytic platform that bridges research and real-world solutions. Our impact is visible not only in high-quality publications and innovation pipelines but also in the growing community of scientists and students we empower across India. With each grant, we are nurturing science with bold ideas that thrive, and science that serves society at its best.

Expert Reviewer Panel

At Ignite Life Science Foundation, our Expert Reviewer Panel forms the cornerstone of our commitment to scientific excellence. Comprising distinguished scientists with deep expertise in their respective fields, these reviewers actively participate in our quarterly project review meetings. Their rigorous and constructive feedback ensures that Ignite-funded projects stay aligned with their objectives, overcome challenges effectively, and reach key milestones with greater precision and speed.

Beyond technical evaluation, our expert reviewers serve as mentors, offering critical guidance and encouragement to our early-career researchers. Their sustained engagement not only strengthens the scientific rigour of ongoing research but also nurtures the next generation of scientific leaders. We are deeply grateful for their time, insight, and unwavering support, which play an indispensable role in advancing Ignite's mission of enabling high-impact life science research in India.

Anurag Agrawal
Dean, BioSciences and Health Research, Trivedi School of Biosciences, Ashoka University

Prabhat Arya
Co-founder, CSO and CEO, Smagen Pharma and Nihita Therapeutics

Vineeta Bal
Professor Emeritus

V. Balasubramanian
Founder & COO, Bugworks Research India Pvt. Ltd.

Giriraj Ratan Chandak
Sir JC Bose Fellow at the CSIR-Centre for Cellular and Molecular Biology (CCMB)

Bharat Char
Chief Science Officer, Mahyco Private Limited

Santosh Chauhan
Senior Principal Scientist, CCMB

Sheetal Gandotra
Senior Principal Scientist, Host Pathogen Interactions, CSIR-IGIB, New Delhi

Surendra Ghaskadbi
Former Scientist G & CSIR Emeritus Scientist

Saman Habib
Chief Scientist CSIR-Central Drug Research Institute, Lucknow

Prof. Javed Iqbal
Founder and Chairman Incor Life Sciences Hyderabad

Imroze Khan
Associate Professor of Biology, Ashoka University

Subhash Lakhotia
BHU Distinguished Professor (Lifetime) and SERB Distinguished Fellow

Ravi Manjithaya
Professor and Chair of Molecular Biology & Genetics Unit & Neuroscience Unit at JNCASR

Tina Mukherjee
Associate Investigator at the Institute for Stem Cell Science & Regenerative Medicine (inStem)

Gautam Menon
Dean (Research) and Professor of Physics and Biology, Ashoka University

Ravi Muddashetty
Associate Professor, CBR, IISC

Radha Rangarajan
Director, CSIR- CDRI, Lucknow

Satyajit Rath
Professor Emeritus

E.V.S Prakasa Rao
Honorary Scientist, CSIR-Fourth Paradigm Institute, Bengaluru

Ramesh Sistla
Founder & MD, Think Molecular

M.S Sheshshayee
Professor of Crop Physiology, University of Agricultural Sciences, Bangalore

Suhaib Siddiqi
Scientist

A.K Singh
Former Director and Vice Chancellor, IARI, Pusa, New Delhi

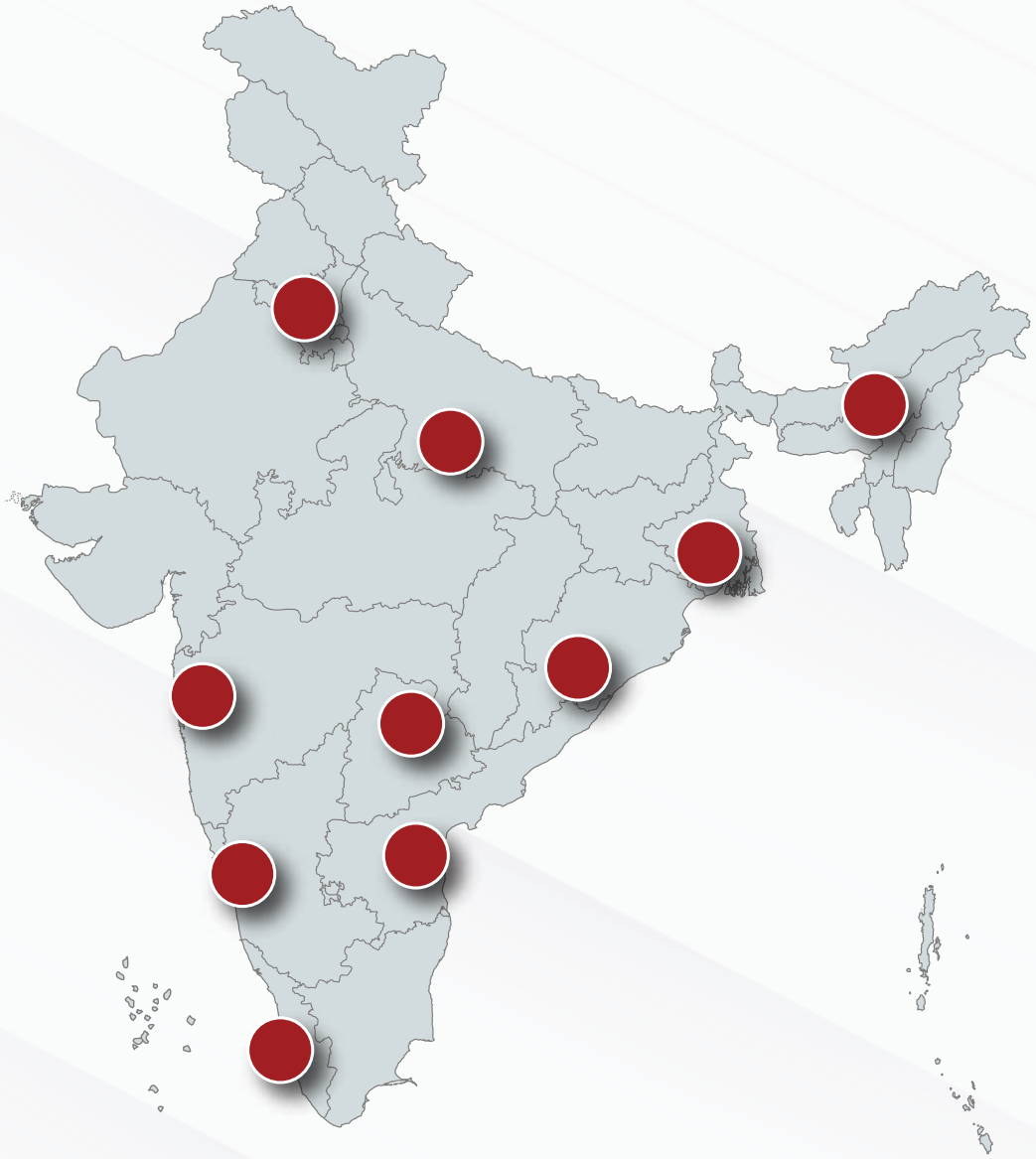
Ramasubbu Sankararamakrishnan
Professor in the Department of Biological Sciences and Bioengineering at IIT-Kanpur

Kalyanasundaram Subramanian
CEO & Co-Founder Differentia Bio

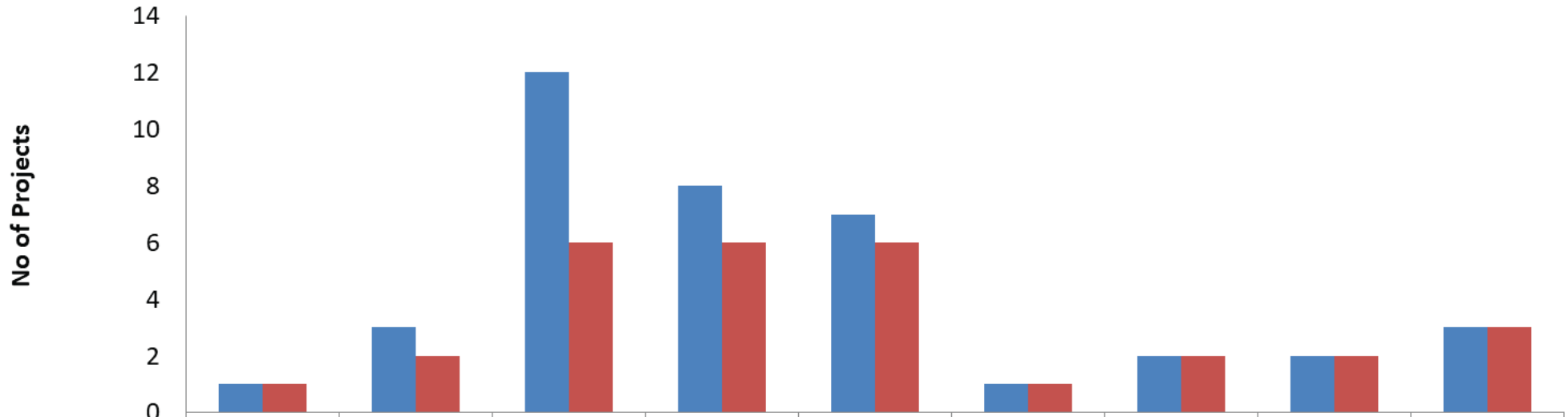
Praveen Kumar Vemula
Professor and Dean of Research at the Institute for Stem Cell Science and Regenerative Medicine (BRIC-inStem)

Colin Jamora
Senior Professor and Head of the Department of Life Sciences, Shiv Nadar Institution of Eminence

Ignite Funded Research Support Across India



Distribution of Projects Across Specific Domains



	Platform Technology	Translational Research	AMR	Neurodegenerative Diseases	Agriscience	Biodiversity	Computational Systems Bio	RNA Tech	Equipment
Total Projects	1	3	12	8	7	1	2	2	3
Ongoing Projects	1	2	6	6	6	1	2	2	3

New focus areas

Healthy Ageing and Living: A Vision for the Future

As lifespans increase globally, the real challenge lies not just in adding years to life, but adding life to those years. At Ignite Life Science Foundation, we envision a future where ageing is not associated with decline, but with vitality, dignity, and continued contribution to society.

As we age, our bodies become increasingly predisposed to chronic diseases, primarily due to the simultaneous decline of multiple biological systems. While current interventions often focus on managing individual diseases, there remains a significant gap in understanding how one chronic condition can influence or trigger another—for instance, how diabetes may lead to cardiovascular disease, or how chronic inflammation can contribute to neurodegenerative disorders like Alzheimer's disease. Many chronic diseases share common biological pathways. Gaining a deeper understanding of how these conditions manifest and interact is critical to slowing their progression. The way forward lies in decoding this complex web of interactions early in the aging process and developing strategies to monitor and promote healthy living—ultimately paving the way for a longer, healthier life.

Science has the power to transform how we age — helping us remain active, mentally sharp, and staying socially connected. Investing in research today lays the groundwork for innovations that will allow millions to age with strength and purpose.

Focusing on healthy ageing and healthy living is vital for two key reasons:

- It reduces the long-term burden on healthcare systems by preventing chronic conditions through early intervention and lifestyle changes.
- It empowers individuals to remain productive and engaged, enriching communities and economies well into their later years.

IgniteLSF is committed to catalysing scientific efforts in this domain - nurturing a culture of proactive health, and supporting solutions that enable a healthier, and a more resilient ageing population.

Community Feedback

FEEDBACK FROM SCIENTISTS

Anindita Seal
University of Calcutta

Being awarded an Ignite grant has been a valuable learning experience. The timely and flexible funding allowed me to focus on science without worrying about other issues. We proposed a unique and experimentally challenging idea, and the project produced rewarding results not limited to the proposed experiments, which were rewarding not only for the project but also contributed to my laboratory's long-term scientific goals. I am grateful to the reviewers for their constructive criticisms and encouragement. The committee has been consistently open to listening to any issues the investigator encounters and providing assistance. However, it may be beneficial to schedule reviews every 4 to 6 months instead of every 3 months. In India, chemicals sometimes arrive after 3-4 weeks, making it challenging to demonstrate significant progress within a 3-month period.

Anirban Banerjee
Indian Institute of Technology, Bombay

Support and direction from the Ignite review board have been exceptional. The rigorous and thought-provoking reviews—though challenging—sharpened our thinking, improved the quality of our work, and kept us consistently focused. The bold ideas we started with lacked preliminary data, but Ignite's trust and flexible funding allowed us to explore uncharted territory and adapt as needed. The flexibility of the funding allowed me to recruit a JRF (which I did not put in the grant) as the volume of the work increased and needed additional hands. Regular reviews every three months, while demanding, ensured meticulous planning and timely execution. This structure was key to completing the project successfully and meeting all objectives. Timely fund disbursal and minimal administrative overheads (like no formal reports) allowed us to focus on the science.

We deeply value the combination of critical feedback, flexibility, and strategic focus. Ignite's approach of funding select areas helped drive deeper impact. I would also welcome the idea of funding people (exceptional scientists) than projects. HHMI has successfully implemented this philosophy. A small pilot experiment can be done to prove the feasibility of this in the Indian context.

Raghavan Varadarajan
IISc, Bengaluru

The funding we received for mRNA vaccine technology and formulation development allowed us to initiate a completely new research area. Funding flexibility allowed us to pursue new directions and methodologies as the research proceeded. The frequent reviews helped keep to timelines and the rapid fund disbursement was a welcome contrast to our experience with other India based funding agencies.

The rapid review and funding release as well as the regular collegial interactions with the reviewers were noteworthy features of the grant. While the reviewers had overall familiarity with the area, one thing that would have helped us progress faster would have been advice from someone who was intimately familiar with specific granular details of this new technology. For example we spent a lot of time on diverse formulation approaches, none of which worked well. However we were able to use the preliminary data we generated to obtain other funding to get the right (expensive!) formulation device, this solved all our formulation issues.

Jagadis Gupta Kapuganti
National Institute of Plant Genome Research, New Delhi

The Ignite funding and review process significantly enhanced the planning, execution, and overall quality of our research. The quarterly review meetings provided valuable, constructive feedback that helped refine our hypotheses, improve methodologies, and broaden the impact of our work.

The flexibility in funding allowed us to pursue innovative directions that would have been difficult under conventional schemes.

Support from both the reviewers and the funding team was timely and consistent ensuring smooth coordination, feedback, and disbursal of funds. The brainstorming on obtained results and feedback for its improvement helped us to rectify shortfalls in experimental planning. Overall it was an enriching experience.

Jagdish Krishnaswamy
Indian Institute for Human Settlements, Bengaluru

The Miyawaki ecological restoration project has benefitted greatly from the sustained engagement and support of the funding team and scientific review committee—from the early proposal stage to the donor-grantee meeting in Mumbai. This guidance gave us the confidence to pursue pioneering research tailored to India's unique ecosystems. The review process helped refine our focus on novel scientific questions around ecological dynamics and plant-animal interactions in small, accessible ecosystems.

As the project progressed, we were able to adapt based on site observations and expand our approach within budgetary limits—introducing innovative components such as eDNA sampling, automated bat detection systems, thermal imaging, and soil moisture monitoring. These additions enriched our understanding of ecological outcomes in Miyawaki plantations. We also appreciated the chance to present ideas for future directions and strongly recommend a mid-project interaction with funders and reviewers to further strengthen this collaborative model.

FEEDBACK FROM TRAVEL FELLOWS

Soumyajit Dutta
IISER, Pune

I was honored to receive the travel award from the Ignite Foundation to participate in an EMBO workshop in Portugal and to present my PhD research work. This opportunity was made possible through the generous support of the Ignite Foundation. The entire team was exceptionally helpful, providing prompt responses to any inquiries I had, which I greatly appreciated.

Additionally, the announcement of the results within a short time was highly beneficial for planning the trip well ahead. The disbursement of funds was also very swift and fast. I am sincerely grateful to the entire team for their support. I would also like to commend the annual meeting event, which provided a valuable opportunity to engage with donors and fellow researchers, facilitating the exchange of ideas and viewpoints. I will be very happy to take part again in such events in future.

Sandhya Singh
CSIR - Central Drug Research Institute, Lucknow

The support from the funding team significantly influenced my research direction by enabling me to attend a world-class scientific conference, FCVB 2024, where I presented my work and connected with leading scientists. This interaction helped me initiate discussions for my postdoctoral studies, creating a vital bridge for my scientific career.

The grant's flexible structure allowed me to explore innovative ideas and gain exposure to new methodologies. The timely and well-organized disbursement process ensured smooth project execution without delays. Importantly, the review process and feedback from the conference enhanced my scientific thinking, helping refine my project goals and presentation. Overall, this funding opened a valuable window into the global research community.

One key suggestion would be to open applications on a trimester basis, allowing more students frequent opportunities to apply for conference travel support.

Sourabh Biswas
IISER, Kolkata

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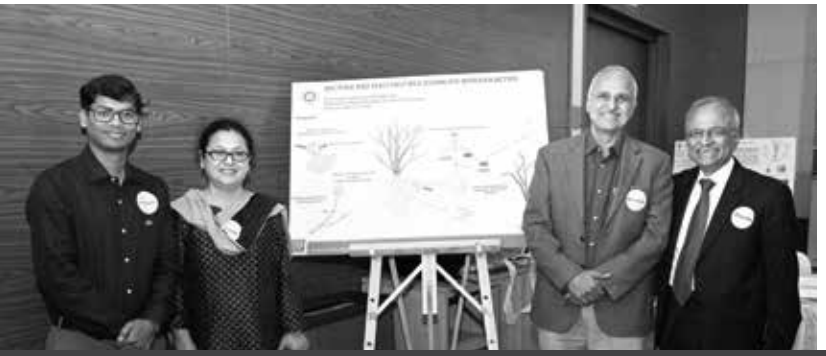


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