RESEARCH HORIZONS

THE OFFICIAL NEWSLETTER OF THE UNIVERSITY GRANTS OFFICE

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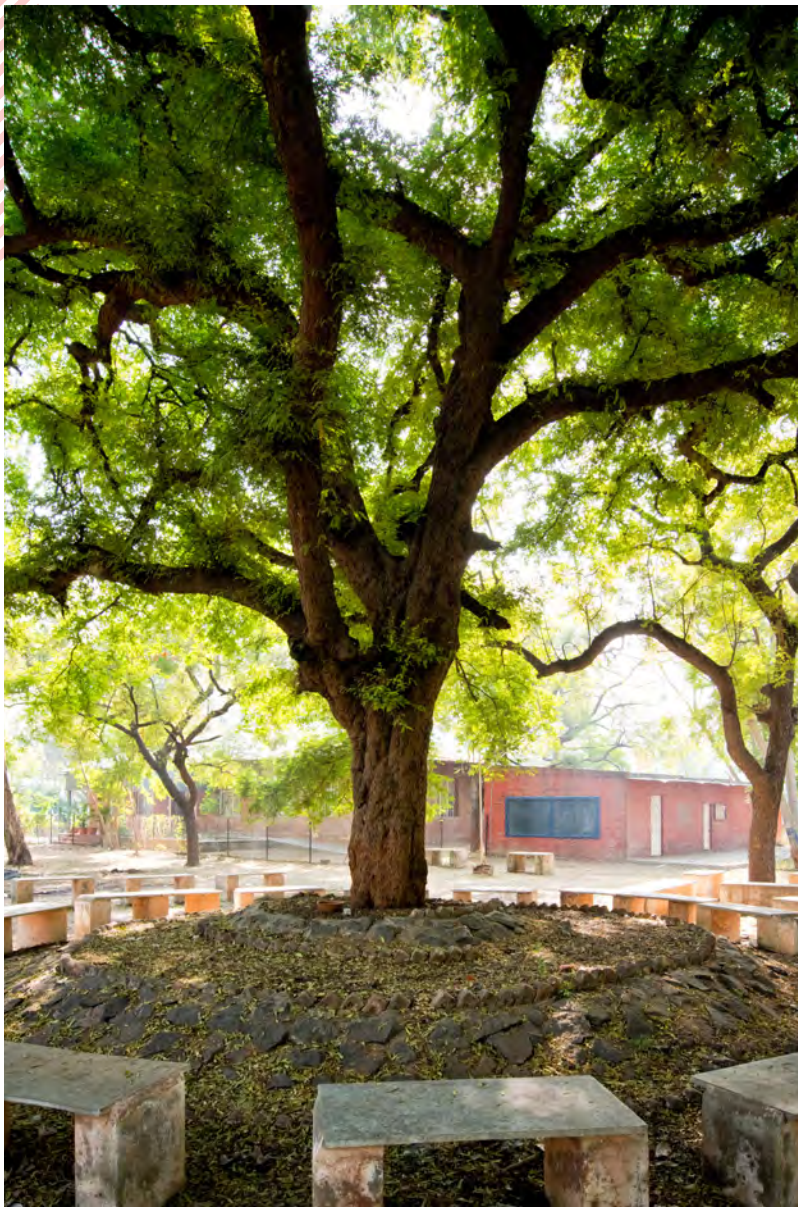


CONTENT

Ahmedabad University

In conversation with Balaji Prakash

Balaji Prakash is Professor and Associate Dean at the School of Arts and Sciences. He is a structural biologist with a sustained interest in interdisciplinary research. We spoke to him about the challenges of facilitating research across disciplines. Excerpts from the conversation.

Please could you tell us about your key research interests?

I am a structural biologist and am fascinated by what enzymes – the tiny machines in our body– can do. They are phenomenal machines, catalyzing difficult reactions using simple means, across biological systems. Although there has been a long history of research into enzymes, there is still so much to learn even today about these proteins. I can continue working forever on enzymes and I am sure there will still be fascinating stories enzymes can tell us!

I was originally trained in Physics at the University of Hyderabad and then moved to the Indian Institute of Science (IISc), where I developed a passion for structural biology. Biology was an entirely different world for me and hence this transition took some time. Crystallography was an upcoming field at the time and only a handful of protein structures were available. At IISc, I gradually began to understand why protein structures were so important. I grew to appreciate the complexity in biological systems and that the challenges in Biology were different from that of other scientific disciplines.

I then went on to carry out Post-doctoral research with Professor Alfred Wittinghoffer at the Max Planck Institute (MPI) for Molecular Physiology in Dortmund. Our work was focused on GTP-binding proteins such as Ras, which were implicated in cancer. At the time, there were several groups at the institute working on the problem, each from a unique perspective. There were groups focusing on classical biology, structural biology, cell biology and others. This combination of approaches gave us the collective ability to put together and understand the problem in a very comprehensive manner. We published several key papers during this time and my experiences at the MPI further deepened my understanding of biology, particularly using interdisciplinary approaches. Life at MPI also told me how to celebrate science!!

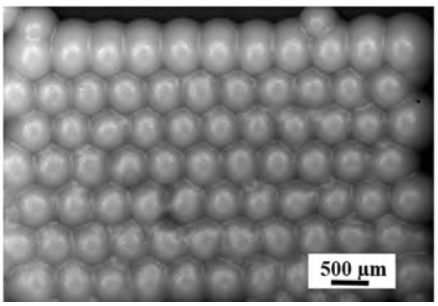
You were one of the founding faculty at the Biology unit at IIT Kanpur. Please could you share the challenges of developing life sciences research at an engineering institution.

After my research at MPI, I returned to India. I was briefly at the Jawaharlal Nehru University and then joined IIT Kanpur. IIT Kanpur was in the process of starting a new Department in biology – but different from Biotechnology. I was among the first group of faculty members to join this Department, which is now referred to as the Department of Biological Science and Bioengineering (BSBE).

There were several challenges inherent in the creation of a biology unit at an educational institution focused predominantly on Engineering disciplines. However, there was support at the highest level and an appreciation of the value of biological research. We received generous and enabling funding from Mr Arun Shourie, then Rajya Sabha M.P. from Uttar Pradesh, for setting up the new Department. All of us put in a lot of effort into developing the infrastructure, academic programs and resources in a manner that would be suitable for life sciences research. While the project teams at IIT Kanpur were familiar with and prepared for fields such as computer sciences, several key changes, particularly in their thinking – had to be introduced to simply appreciate that life sciences research and the challenges were quite different!! Just to give an example, we were working with biological samples at Kanpur, where the temperatures could touch 45 degrees Celsius. It was not exactly obvious that all laboratory spaces had to be temperature controlled to ensure experiments could be done optimally – which was a first at the time. Likewise, we had to ensure power backup for the freezers which were used for storage of biological samples and sufficient numbers of 15 Amp power sockets for the large number of equipment items used for biological research – something that sounds so trivial and routine now. On the other hand, being in an academic institution gave us a thriving ambience to develop very new and interdisciplinary teaching programs. Our BTech and MTech programs were highly successful as they allowed entry to non-biologists to find their niche in the biological world – unconventional for those times. These produced some of the best minds for biology and in turn told us first-hand how valuable interdisciplinarity was to biology.

As young faculty members, our time was divided between developing our own research programs, new academic programs and such institution-building activities. Our experiences evolved through this period and helped us see the bigger picture. While it was all-consuming at the time, in retrospect I regard this period as a unique learning opportunity which allowed me to grow leaps and bounds.

And what would the impact of such a department be? I would like to share a highlight here. As a faculty member at BSBE, I was collaborating extensively with colleagues from several departments, such as Chemical Engineering and Materials Science. My colleague Deepak Gupta and I collaborated on lithography, which is a very expensive process that generally uses gold etching. We developed the use of microbes to print lithography patterns as a lower-cost alternative and have a US patent for this. Such innovations are difficult in a conventional setup and would not have been possible without our engineering students and combined approaches.



Lithography via microbes:fabrication of micro-lenses using the method of printing antimicrobial agents

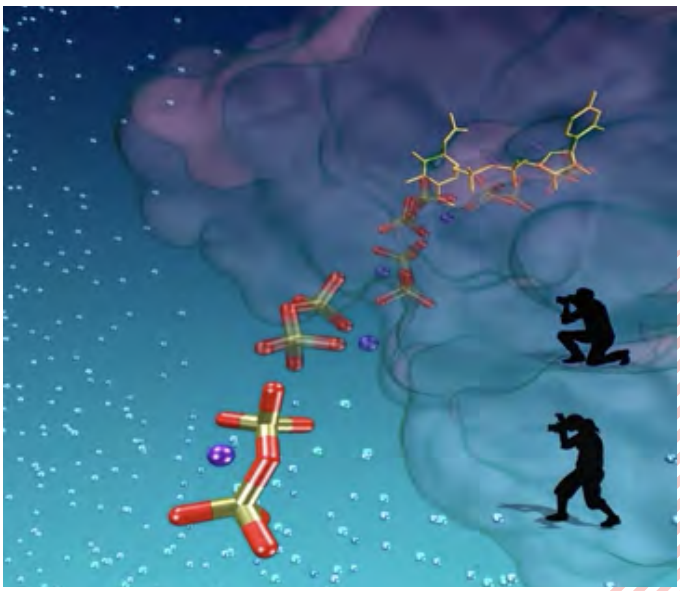
You are a recipient of the prestigious International Senior Research Fellowship from the Wellcome Trust and several other prestigious awards. Please could you share your views on the importance of flexible and enabling research funding?

I moved to IIT Kanpur a year after the formation of BSBE. At that point, I was aware that the Wellcome Trust in London had started a fellowship program to support international researchers in biomedical research. Our analysis of GTP hydrolysis mechanisms led us to postulate that there could be several potential ways for hydrolysis to be catalyzed by GTPases. I approached the Wellcome Trust and was very fortunate to be awarded an International Senior Research Fellowship to develop this body of work. The trust placed in the awardees and the flexibility in managing the funding support were unprecedented and this had a huge impact on our research.

IHow do you plan to promote interdisciplinary research between science faculty and the other Schools?

What I have understood during my journey is that as leaders, we need to empower passionate and creative people at all levels- researchers, teachers, students and others. Success will depend on how they are trained and motivated to be creative rather than to do run of the mill research. It is crucial to strike the right chord with the students at the very early stages and trigger that passion for research early on. I would like to give our researchers as much time as possible. We need to hire more faculty, to ensure even distribution of workloads and for our faculty have enough time to think about new ideas. We need spaces that promote thought, endeavour and collaborations in science.

I would like to stand there by the side of my colleagues, assess what the problems are and enable interdisciplinary ideas. Early career researchers are so busy establishing successful programs and proving themselves to the scientific world. Additionally, it would be wonderful if we could give our faculty at least a modest 10% window of opportunity that allows them to be different from the rest of their peers, for them to be able to work with each other across disciplinary boundaries, take risks and learn from failures. There are so many potential problems at the interface of the several disciplines in sciences - and even with management and Arts - if only we are willing to open the window to see the world out there. Similarly, could we shape our academic programs to anticipate and prepare our students with interdisciplinary thinking and skills that they might require in future? These are some of the small experiments I would like to try at Ahmedabad University, to facilitate interdisciplinary research, while strengthening disciplinarity at the same time.



Capturing snapshots of an Enzyme's reaction!!
The enzyme in question here is GlmU that is an essential enzyme required for making the cell wall of several bacteria. It just completed a reaction and is releasing its product - a pyrophosphate - as we captured the reaction using X-ray crystallography. This work was published in Structure (2018).

In conversation with Ratna Ghosal

Ratna Ghosal is an Assistant Professor at the School of Arts and Sciences. We spoke to her about her research programme and the joys and challenges of being an ecologist. Excerpts from the conversation.

Please could you tell us about your key research interest?

I am an ecologist and my specific research interests span wildlife biology, wildlife endocrinology, animal behaviour and conservation biology. The overarching theme of our group is to use an integrated approach combining traditional ecological tools with advanced molecular techniques, to understand environmental needs of a target species. Such assessment, in turn, contributes towards the conservation of the environment and the ecosystems. The work is largely carried out on vertebrate species, ranging from mammals to large reptiles to freshwater fishes, under both laboratory and free-ranging conditions.

A part of our work is always focused on conservation biology and generating solutions that can be applied in the field. This balance of laboratory-based and applied research is very important to me as a researcher.

How did you develop your interest in ecology?

I was always interested in animal-watching and exploring newer habitats or environments.During my undergraduate days at Kolkata University, I was associated with nature clubs and used to take students out for treks. I very much enjoyed doing this and also earned some very welcome pocket money in the process! At the time, I was working with an NGO called Pugmarks and got an opportunity to support an Indo-French research collaboration in the Sunderbans. My role was to accompany the researchers and work as a translator for the French team.

At the end of the trip, one of the Professors spoke to me and encouraged me to turn my interest in wildlife into a profession. He gave me books on the subject and recommended that I explore both summer studentships at the Indian Academy of Sciences and higher education at the Centre for Ecological Sciences at the Indian Institute of Science (IISc). This conversation was a turning point in my life and led me both to the summer studentship and a PhD at IISc. My interest in ecology grew from there and I never looked back!

Please could you tell us about your early work on chemical signals for communication in nature?

During my graduate training with Professor Raman Sukumar at IISc, I worked on hormones and pheromones in Asian elephants. Elephants use a lot of chemicals in their communication with each other. Their urine and dung samples contain several volatiles which are used in their communication. This work took me all over India and Sri Lanka and also sparked an interest in chemical communication in nature. During my PhD days in Sukumar's lab, I was also trained to think as a conservation biologist, about how academic research could be translated and applied towards saving the environment and the species.

Having worked on chemical communication in terrestrial animals, I then decided to try and understand this phenomenon in the aquatic world as well. I went to work with Prof Peter Sorensen at the Department of Fisheries, Wildlife and Conservation Biology at the University of Minnesota (UMN), Twin Cities. The Sorensen laboratory used to do a lot of work on how fish communicated with each other using hormones and pheromones. In particular, there was a lot of research focused on fish which were invasive species and exotic to the native environment. During my time in Minnesota, I got the opportunity to address these questions both in the laboratory and in the field. We did extensive field work along the Mississippi river, starting from Minnesota going down to Illinois and Iowa. By this stage, I became familiar both with terrestrial and the aquatic systems and this made me feel more well-rounded as an ecologist.

During my training at IISc and UMN, I realized that application of research findings to solving real-world problems is challenging and exciting, and there should be good balance between the field and laboratory research. In today's world with exponential growth of human population and over-exploitation of natural reserves, we should attempt to resolve the problems that are endangering the earth and the environment.

How have you developed this interest further at Ahmedabad University?

When I joined Ahmedabad University, I decided to initiate work on chemical communication in fish here. There were several interesting questions to ask: how do fish find food, how do they communicate with each other, how do they defend their territories and how do they maintain dominance hierarchies. We also wanted to study fish behaviour in mixed species groups. When we release an individual fish amidst unrelated species of fish, who does this individual choose to group with or shoal with?

As a starting point, we decided to build a catalog of different behaviours under varying contexts, with the aim of teasing out what might be triggering specific behavioural responses. We work on Tilapia and Sailfin Catfish, both of which are exotic and invasive species. In collaboration with the Government departments, we study the behaviour of the Sailfin catfish at field sites in Kolkata and in Odisha, where this species has invaded the ecosystem. We wanted to work on Sailfin catfish at these locations early on before the problem spreads to other river systems, and we hope to come up with ecology-based solutions to such challenges.

We now also work on leopards and freshwater Marsh crocodiles, to understand the ecological adaptation, reproductive and stress physiology in animals. In most animals, reproductive and stress physiology can be understood from hormone metabolites present in their dung or "scat" samples. Our work on leopards is being conducted in at the Kankaria and Baroda zoos, and on free-ranging populations across Gujarat. For our work on crocodiles, we are focusing on free-ranging crocodile populations across three geographically distinct sites: Anand, Vadodara and Kutch districts of Gujarat. The immediate local environment of a species, be it captive conditions, high intensity conflict habitats, and/or fragmented landscape, plays a huge role in influencing the behavior and physiology of the target population. By using a combination of ecological and molecular tools, we try to understand the role of environmental forces in shaping the behavioral and physiological adaptations of a species across a range of diverse habitats. We strive to apply such findings towards the conservation of the species and their habitats.

Please could you share some of your memorable experiences as an ecologist.

As an undergraduate student, my trips to see wildlife were fun and all an adventure. However, once ecology became my profession, this was no longer the case. I had to learn to be aware of my surroundings and make wise decisions for succeeding in field work.

I would like to share an incident that occurred during my post-doctoral research work in Minnesota. I was once doing some experiments at Lake Steiger, Minnesota. It was late September and possibly the last trip before we closed up field experiments for the year before winter set in. I was on a boat along with a field assistant, monitoring fish behaviour over a 24 hour period. At around 2 am, we realized that the boat had run out of fuel. To add to our woes, there were no paddles on the boat either. We had been careless to not check these before setting out for the lake. With no other option in sight, we ended up using our life jackets to paddle our way back to the launch pad. This experience left us completely drained but also gave me an important lesson- to always plan ahead to the fullest extent for my field work. Fieldwork is challenging and one needs to be aware of all the risks and plan well beforehand.

How has the Startup grant from Ahmedabad University facilitated your research?

The Startup grant from Ahmedabad University was invaluable in helping me build our research. There is a long incubation period for getting any grant. The first external grant I wrote here was to support our work on the Sailfin Catfish, and I was fortunate to be funded for this work through a SERB Core Research Grant. While waiting for the grant to be awarded, I had to find resources to support our nascent group. The University Startup grant were an excellent buffer and saw us through the initial phase of building the group.

Having the Startup grant also meant that I was not under pressure to do target-oriented research from the outset. I could use these funds flexibly to do some exploratory research. The Startup funds enabled our field work as I was able to pay for our travel costs, field assistants, vehicle costs and others. I was able to travel to Kolkata and design and implement a pilot survey, the results of which went into my SERB Core Research Grant.

What would your advice be to students considering careers in ecology research?

Fieldwork is an integral part of ecology research and during fieldwork, one is far away from city comforts, socially isolated and potentially at risk due to several reasons. While there are obvious concerns about working with animals in the wild, human beings in certain situations pose an equal threat. My advice to students would be to be passionate about their work but equally think about their safety in the field as well. They should refrain from taking avoidable risks if their safety is likely to be compromised. Fieldwork also involves a lot of team activity, and working in collaboration with several organizations, government officials, NGOs and local stakeholders. Hence, communication and network building are key components of ecology research, and students need to develop a unique skill set to be successful in this field. Overall, the risks and challenges for field ecology research are so high; the students need passion and commitment to this way of life to be able to develop ecology as a profession.

Global recognition for the AIChE Ahmedabad University Student Chapter

The American Institute of Chemical Engineers (AIChE) is the world's leading organization for chemical engineering professionals, with more than 60,000 members from more than 110 countries. The AIChE Ahmedabad University Student Chapter has received global recognition in the academic year 2019-20.

Outstanding Student Chapter Award

Ahmedabad University Student Chapter received the Outstanding Student Chapter Award for the Academic year 2019-20. This award is presented annually to those Student Chapters that show an exceptional level of participation, enthusiasm, program quality, professionalism, and involvement in the university and community at the Global level.

Freshman Recognition Award

Aparnaa Iyer, second year chemical engineering student and current Treasurer of Ahmedabad University Student Chapter, received the Freshman Recognition Award for her most active contribution to the chapter in her freshman year.

Donald F. Othmer Sophomore Academic Excellence Award

Saumya Parikh, third year chemical engineering student and current Technical Head of Ahmedabad University Student Chapter, received the Donald F. Othmer Sophomore Academic Excellence Award for his highest scholastic grade-point average during his freshman and sophomore years.

International Student Chapter Leadership Development Travel Grant Award

Parth Patel, third year chemical engineering student and current Vice-President and ESC Representative of Ahmedabad University Student Chapter, received the International Student Chapter Leadership Development Travel Grant Award for his Leadership involvement in chapter development, AIChE Executive Student Committee and academic achievement.

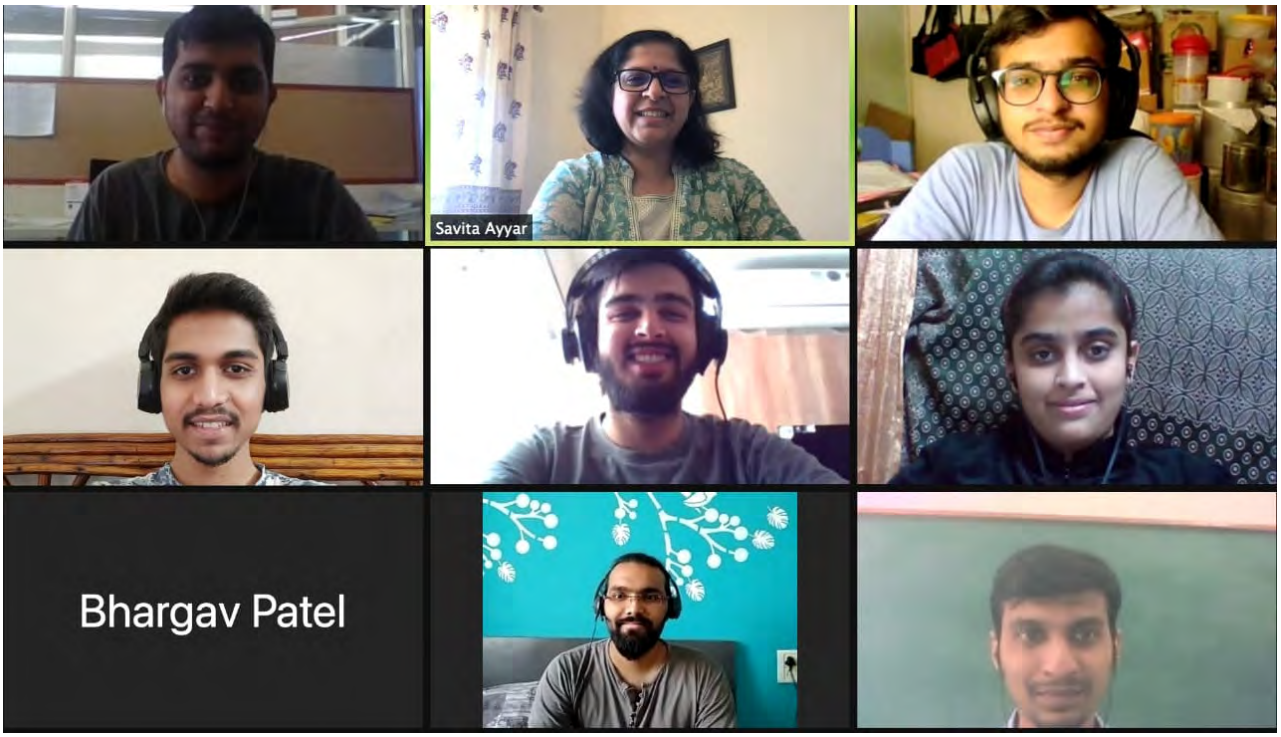
Our student members have also achieved recognition at the ChemE Jeopardy, a competition in which clues relating to chemical engineering subjects are given to the contestants who then have to phrase responses in the form of questions. On 15th November 2020 our ChemE Jeopardy team competed against International AIChE Chapters. While the competition between the teams was fierce, the Ahmedabad University team secured the 3rd Rank at the event.

[From left to right- Parva Raval, Saumya Parikh, Yash Makwana, Sagar Shah]

On 9-11 October several teams from Ahmedabad University participated at the virtual Regional Student Conference held by AIChE NIT Rourkela. A team consisting of Yash Makwana (Secretary AIChE Student Chapter), Saumya Parikh (Technical Head AIChE Student Chapter), Sagar Shah (Chem-E-Car Member), Parva Raval (Chem-E-Car Member) secured the first rank at the virtual Regional Student Conference.

More about AIChE at **https://www.aiche.org/about**

Our UGRP experience



The Undergraduate Research Programme (UGRP) at Ahmedabad University provides a unique opportunity to students seeking a first-hand experience of conducting research.

Yashraj Kakkad, Shreyansh Shah, Kalki Bhavsar, Nilay Gandhi and Bhargav Patel are participants in the UGRP programme and recently concluded their research projects under the guidance of Professor Dhaval Patel. Their work spans Modelling and Analysis of Spectrum Coexistence in xG Wireless Networks, Estimation of Primary Activity Statistics for CR enabled vehicles, Modeling and Analysis for Spectrum Handoffs in Cognitive Radio Networks, CR enabled Vehicular Networks and Deep learning aided Estimation of Primary Activity Statistics for CR Networks. During their UGRP journey, they have additionally been mentored by graduate students Sagar Kavaiya and Brijesh Soni, from the same research group.

We spoke to our young colleagues about their experience working on UGRP research projects. Excerpts from the conversations.

What motivated you to take up a UGRP project?

Nilay: Growing up, I would hear about the hard work being put in by researchers in a particular field. It was a dream for me to do such things! I started exploring various areas of our field, thinking about what I could do ahead and opted to join the UGRP to try something new.

Kalki: As a student, I was completely unaware of what research was and wanted to focus on learning about the process of research. The UGRP project gave me this opportunity.

Yashraj: Some of my senior friends told me that Undergraduate days are all about exploration. Four years is a long period of time to explore and I did not want to miss that chance. I read about the UGRP program on the University website and realized that I had the option available to me. I knew that a Masters degree would require a 6-month project and thesis. It seemed to me that the UGRP experience would help me decide whether research was for me or not. I contacted Professor Dhaval, applied to join his group, got the opportunity and it all worked out!!

Shreyansh: I wanted to explore what research was. As a student in the fourth semester, I was not able to stick to one problem for a long period of time. While starting out on a problem I would be enthusiastic and passionate about it. However, once I started working for a while, I would lose momentum. I thought that perhaps the UGRP project would help me to overcome this block. The UGRP project was the first time I kept to a particular problem for around nine months. It was challenging, particularly as we had our coursework going on in parallel.

Bhargav: As students at Ahmedabad University, our curriculum includes project-based learning and we get an average of 3 months of time to work on our course-based projects. I came to know about the UGRP in my second year and realized that this was an opportunity to work for longer on a research project. I started with a defined problem, spent 6-7 months finding a solution to it and a further two months writing up my project results. The UGRP experience helped me understand the importance of staying with a problem for a longer period and to learn to write in a professional manner.

What did you enjoy the most about your work on the project?

Kalki: When I look back to what I was before starting my project and who I am now, there is a very big difference. I have acquired a lot of skills during this whole process. Everything was a fun experience for me. There is a sense of satisfaction and to me that is the most enjoyable part.

Shreyansh: I enjoyed performing simulations and coding. I learnt to push myself and be self-motivated all the time. I realized that there would not be someone else available all the time to motivate me to take the next step or move further. I therefore learnt to be self-motivated.

Yashraj: The part that was most memorable for me was when something which I was desperately trying for months, clicked and worked! I was into something for months. The early draft was not very good and we had to add to it. For many months I was at the same point with no progress at all. I discussed this with both Brijesh and Sagar. Suddenly, the code I ran worked and that was a really special point!

Nilay: I would like to give you a bit of context about myself. I tend not to interact much with other people. I was the kind of person that would learn on my own, for example, through a Google search. However, not everything can be solved by Google! You do need help from people. UGRP helped me with that process and made me realize that seeking help is not a bad thing. If you contact people working in the team, they will prove helpful to you. This helped me in moving forward with the project.

Bhargav: The most enjoyable part for me was writing. When we start writing the results, the bigger picture and issues come forward. In writing, we need to defend everything. When you start writing on a piece of paper, you learn more about the subject. Brijesh knew very well how long it would take to finish the project. Each day we improved it little by little. By the end, the draft had changed drastically. The second most enjoyable part was when we finally submitted our paper. That gave immense satisfaction.

What learning would you take away for your own individual career ahead?

Yashraj: I will be mainly be taking the non-technical part of my learning ahead. At the UG level there is a lot to explore and your attention is proportionally divided. You go to whatever gives you stimulation. However, when things start becoming hard, you want to quit. You don't want to go through the heartaches. When I started my UGRP project, I struggled with some aspects. I eventually built resilience and learnt that I could repeat this next time if needed. So next time, when I get a hard problem, I will not immediately say "no". I will not be underconfident of myself and would at least give it a shot. That is the key takeaway for me.

Shreyansh: I learnt the importance of training one's mind to get a different or new perspective. There was a point in the project where I had been stuck and unable to get a new outcome. I decided that I would not quit but would rather find a way of moving forward. I had to search in a new direction to solve the problem. In research, you have to help yourself overcome such limitations.

Kalki: The UGRP experience has helped me become more professional in my approach. Whether it was in attending meetings, preparing technical reports or making presentations, I am now able to do all this more efficiently. As professionals, we need to be ready all the time.

Nilay: This experience helped me develop as a professional. It taught me to persevere and not give up. It made me realize the importance of keeping faith in oneself and in my team, as we were together in this.

Bhargav: A key learning for me was the ability to write about my research in a professional manner. Prior to joining the University, my entire schooling was in Gujarati medium. On the other hand, all the courses at the University are taught in English. Hence, there was a period of struggle when I worked to overcome this language barrier. I eventually become comfortable with using English. I then realized that writing a research paper was like writing a story, which needs a good structure and appropriate words. I attended a course on how to write research papers and that helped me immensely. My UGRP project gave me a great opportunity to practice my professional writing.

Secondly, through this process, I learnt the importance of not giving up in the face of failure. I saw that not everything works according to the plan in research. I had to change my approach in my project. However, my work has now been published and this was very satisfying. Hence, a major learning for me from the UGRP project was to "not quit".

The graduate mentors: Sagar Kavaiya and Brijesh Soni: What were the highlights for you working with UGRP students?

Brijesh: Our key learning from the UGRP program was management skills. We are both graduate students and will soon be moving forward in our own careers, either in academia or elsewhere. It is important for us to be able to manage both our work and that of other colleagues. Being mentors for the UGRP students has been a great learning experience in this regard. The UGRP students are very enthusiastic and we get different perspectives from the students in the group.

Sagar: In my opinion, a key step was to assign the right research problem to the right person. For this, we needed to identify interests and skills of the UGRP students and then allot them problems they would enjoy working on. Secondly, it has been a big learning experience for me, to be able to balance my own work with managing the UGRP students. I have now learnt to listen to their questions and respond with good directional pointers in a short timeframe. This approach allows us both to continue working on our respective projects while ensuring that we come up with solutions for their problems.

More about the UGRP programme at **https://ahduni.edu.in/research/undergraduate-research-programme/**

Awards and Prizes

External grants (For the period November 2020 - March 2021)

Snigdha Khuntia and Sameer Dalvi (IIT Gandhinagar)
"Synthesis of magnetic catalyst coated microbubbles for removal of trace pollutants"
Department of Science and Technology
69.99 Lakh INR, 3 years

Anjan Anand Sen
"Search for the missing links between observation and theory in beyond concordance ΛCDM model"
Science and Engineering Research Board
43.86 Lakh INR, 3 years

Darshini Mahadevia, Glyn Williams (University of Sheffield), Karen Coelho (Madras Institute of Development Studies) and Binitha Thampi (IIT Madras)
"Managing Covid-19 in India's Cities: reshaping people's everyday lives in poorer urban neighbourhoods"
The British Academy
9.9 lakh INR, 2 years

Young achiever

Stuti Bhagat was awarded Senior Research Fellowship (SRF) from Indian Council of Medical Research (ICMR) for her doctoral study. Stuti was also awarded the Best Poster Presentation in the 6th International Conference on Nanoscience and Nanotechnology (ICONN)-2021 (Virtual Conference), organized by SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, February 01-03.

Our heartiest congratulations to Mehul Raval, School of Engineering and Applied Science for being felicitated as an IEEE Access Outstanding Associate Editor.

Research Seminars

(For the period November 2020 - March 2021)

Amrut Mody School of Management

- Jayant Rao, Loyola Marymount University, USA. *Active Portfolio Management with Cryptocurrencies*. December 23, 2020.
- Navin Kumar, Boston College, USA. *Gun Control and Crime: Evidence from Concealed Carry Laws in the United States*. January 19, 2021.
- Sayahnika Basu, Arizona State University, USA. The Impact of Drought on Structural Transformation in India. January 28, 2021.
- Priyankar Datta, Michigan State University, USA. *The Impact of Mandated Paid Sick Leave Laws on The Long-Term Care Industry*. January 29, 2021.
- Maumita Roy, George Mason University, USA. *Identity, Leadership and Cooperation: An experimental analysis* .February 4, 2021.
- Jayaram Uparna, IIM - Bangalore. *Boys Don't Cry: Entrepreneurial Pitches in Crowd-Financing*. February 17, 2021.
- Rishabh Shah, Environmental Defense Fund. *Urban air pollution - assessing patterns, sources, and exposure to airborne particulate matter*. February 18, 2021."
- Anant Sudarshan, University of Chicago, Chicago. *Winning the War on Air Pollution*. February 19, 2021.
- Ayushi Tandon, Indian Institute of Management Ahmedabad. *Practical Electronic Medical Records: EMR Use Within Outpatient Consulting on Women's Health*. March 8, 2021.

School of Engineering and Applied Science

- Shashank Tamaskar, Simenes Corporation. *Applications of Controls and Robotics for Advanced Manufacturing*. December 1, 2020.
- Amit Nanavati ,IBM. *SNAzzy & Spoken Web: Network Analysis for Insights and a Web Detour*. February 25, 2021.
- Sanat Maiti , Clemson University, USA. *Solid-state reactions and influence of additives for different applications in materials*. March 25, 2021.
- Nirul Masurkar, Harvard Medical School, Boston. *Real-time sensor for hacking water bodies*. March 30, 2021.

School of Arts and Sciences

- Sayan Goswami, Louisiana State University, Shreveport. *High-performance computing frameworks for de novo genome assembly*. November 9, 2020
- Rahul Sarwate, Columbia University. *The Hindu and the Brahmin: Caste and the Discourse on Modern Hinduness in Maharashtra*. December 2, 2020
- Sagnik Dutta, University of Cambridge. *Becoming righteous in familial spaces: the gendered politics of Muslim citizenship in contemporary India* . December 3, 2020
- Suchismita Das, University of Chicago. *Sikkim Organic: Of Multicultural Recognition and Developmentalist Spectacles on the Himalayan Frontier*. January 25, 2021
- Mousa Mohammadian, University of Notre Dame, USA. *Theoretical Virtues and the Epistemic Aims of Science*. February 9, 2021
- Daniel Ferguson, Yale University. *The Best is the End: An Argument in Eudemian Ethics* I.8.February 11, 2021
- Chandler Hatch, Harvard University. *The Rationality of the Hegelian State*. February 16, 2021
- Nithin George, Indian Institute of Technology, Gandhinagar. *Mind as an Intuitive Statistician and Perception as Hypothesis-testing*. February 22, 2021
- Pradeep Rai, Harish-Chandra Research Institute, Prayagraj. *Symmetric groups via Card Shuffling*. March 8, 2021
- Sungchoon Sinclair, University of Utah. *From individual to holistic approaches to understanding the human system and gender differences*. March 9, 2021
- Susanta Tewari, University of Georgia, USA. *Modeling Evolutionary Forces*. March 16, 2021
- Siddharth Pandey, University of Cambridge. *A Sense of Magic: Bodies, Materiality, and the Making of Wonder in Fantasy Worlds*. March 18, 2021
- Meghana Krishnadas, CSIR Center for Cellular and Molecular Biology, Laboratory for Conservation of Endangered Species. *On the edge of (co-) existence: fate of diversity in human-modified forests*. March 18, 2021

Publications

(For the period November 2020 - March 2021)

Articles in Refereed Journals

Dandotiya D. & Banker N. D. (2020). Energy Efficiency Improvement of a Refrigerator Integrated with Phase Change Material based Condenser. ASME Journal of Energy Resources Technology, 143(8), 082105-082112. https://doi.org/10.1115/1.4048871.

Doshi K., Pandya N. & Datt M. (2020). In silico assessment of natural products and approved drugs as potential inhibitory scaffolds targeting aminoacyl-tRNA synthetases from Plasmodium. 3Biotech, 10(470), 1-12. 10.1007/s13205-020-02460-6.

Mahadevia D. & Mukhopadhyay C. (2020). Covid-19 and Public Transport Conundrum in India. Town Planning Review, 1-9.

Mehta B. & Choksi A. (2020). Success of women in leadership positions during crisis management. Ahmedabad Chartered Accountant's (ACA) Journal., 44(4), 21-27.

Padmanabhan R. & Shukla A. (2020). Orchards in elliptic curves over finite fields. Finite Fields and Their Applications, 68(101756), https://doi.org/10.1016/j.ffa.2020.101756.

Singh D. & Sunny M. (2020). Attention Interacts With Emotion to Drive Perceptual Impairment of Images in an RSVP Task. Collabra: Psychology , 6(1), 1-10. https://doi.org/10.1525/collabra.14626 .

Unni J. (2020). Impact of Lockdown Relief Measures on Informal Enterprises and Informal Workers. Economic and Political Weekly, 55(51), https://www.epw.in/engage/article/impact-lockdown-relief-measures-informal-enterprises-workers?0=ip_login_no_cache%3D1d21400aa0e4d65939b8d70421c12122.

Bhagat S., Yadav N., Shah J., Dave H., Swaraj S., Tripathi S., and Singh S. (2020). Novel corona virus (COVID-19) pandemic: current status and possible strategies for detection and treatment of the disease. Expert Review of Anti-infective Therapy, 1-24.

Changela A., Zaveri M. & Verma D. (2021). Mixed-radix, virtually scaling-free CORDIC algorithm based rotator for DSP applications. Integration, the VLSI journal, 78, 70-83. https://doi.org/10.1016/j.vlsi.2021.01.005.

Das Gupta, S.(2021). Using real options to value capacity additions and investment expenditures in renewable energies in India, Energy Policy, 148, 11196. https://doi.org/10.1016/j.enpol.2020.111916.

Deo A. (2021). The Classical Khayal and Marathi Popular Music: Unpacking Music Genres and Categories in Maharashtra, India . Asian Music, 52(1), 30-56. 10.1353/amu.2021.0008.

Deo A. (2021). The Khayal Gharana and the 20th-century Woman Musician. Economic and Political Weekly, 56(10), 64-65.

Jain V., Bhagat S., and Singh S. (2021). Bovine serum albumin decorated gold nanoclusters: A fluorescence-based nanoprobe for detection of intracellular hydrogen peroxide. Sensors and Actuators B: Chemical, 327, 128886.

Mundotiya S., Singh R., Saha S., Kakkar R., Pal S., Kunzru D., Pala R. & Sivakumar S. (2021). Effect of Sodium on Ni-promoted MoS2 Catalyst for Hydrodesulfurization Reaction: A Combined Experimental and Simulation Study. Energy & Fuels, 35(3), 2368-2378.https://doi.org/10.1021/acs.energyfuels.0c02879 .

Pendurthi M., Pelluru ., Chilakapati A., Dandotiya D. & Banker N. D. (2021). Performance Investigation of a Vapor Adsorption Refrigeration System Based on Adsorption/Desorption Time and Heat Transfer. ASME Journal of Thermal Science and Engineering Applications, 13(5), 051024-1 to 051024-9. https://doi.org/10.1115/1.4050230.

Rai A. (2021). A novel pipeline leak detection approach independent of prior failure information. Measurement, Elsevier Publications, 167108284-108296. https://doi.org/10.1016/j.measurement.2020.108284.

Shah F., Yadav N., & Singh S. (2021). Phosphotungstate-sandwiched between cerium oxide and gold nanoparticles exhibit enhanced catalytic reduction of 4-nitrophenol and peroxidase enzyme-like activity. Colloids and Surfaces B: Biointerfaces, 198, 111478.

Publications

(For the period November 2020 - March 2021)

Shukla R. (2021). A new systematic approach of teaching and learning of forensic science for interdisciplinary students: A step towards renovating the forensic education system. Forensic Science International-Synergy, 3(100146), 1-6. https://doi.org/10.1016/j.fsisyn.2021.100146.

Singh R. & Chanda R. (2021). Technical regulations, intermediate inputs, and performance of firms: Evidence from India. Journal of International Economics, 128(103412), https://doi.org/10.1016/j.jinteco.2020.103412.

Singh R., Kunzru D. & Sivakumar S. (2021). Enhanced catalytic activity of ultrasmall NiMoW trimetallic nanocatalyst for hydrodesulfurization of fuels. Fuel, 288119603. https://doi.org/10.1016/j.fuel.2020.119603.

Unni J. & Dev P. (2021). How macroeconomic shocks impact employment: comparison of Gujarat with states in Western India. Journal of Social and Economic Development, https://doi.org/10.1007/s40847-020-00123-z.

Weller C., Tilk S., Rajpurohit S. & Bergland A. (2021). Accurate, ultra-low coverage genome reconstruction and association studies in Hybrid Swarm mapping populations. G3: Genes, Genomes, Genetics, doi: 10.1093/g3journal/jkab062.

Weller C., Tilk S., Rajpurohit S. & Bergland A. (2021). Accurate, ultra-low coverage genome reconstruction and association studies in Hybrid Swarm mapping populations. G3: Genes, Genomes, Genetics, doi: 10.1093/g3journal/jkab062.

Williams G., Mahadevia D., Schindler S. & Chattaraj S. (2021). Megaprojects, Mirages and Miracles: Territorialising the Delhi-Mumbai Industrial Corridor and State Restructuring in Contemporary India. Territory, Politics, Governance, 1-22.

Articles published in Conference Proceedings

Raval M., Kaya T., Zaveri M. & Sharma P. (2020). Experiments with Multinational Cross-Course Projects through Blended Learning. IEEE TALE2020 - An International Conference on Engineering, Technology and Education, December 08-11. 65-70.

Bhagat S. & Singh S. (2021). Multifunctional nanoliposome mediated co-delivery of PTEN plasmid and AKT3 siRNA for prostate cancer treatment. 6th International Conference on Nanoscience and Nanotechnology (ICONN)-2021 (Virtual Conference), organized by SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, February 01-03. 194.

Mehta B. & Panda R. (2021). Creativity and Communication in the Digital Age.Creativity and Culture for Management in a Changing World - MICA , Ahmedabad, January 07-09. 37 (abstract).

Forthcoming Grants Office workshop

The University Grants Office invites you to an online workshop on opportunities via the International Growth Centre (IGC).

Mr Kumar Das, Programme Policy Manager for IGC Bihar and Ms Bijeta Mohanty, Programme Economist will be joining us for a discussion on research priorities, the grantmaking process and policy engagement at the IGC. They will then be available to interact with the attendees.

About the IGC:
The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research. The IGC directs a global network of world-leading researchers and in-country teams in Africa and South Asia and works closely with partner governments to generate high-quality research and policy advice on key growth challenges. The IGC's global research agenda focuses on four key themes: State effectiveness, productive firms, liveable cities and reliable energy access.

More information at: **https://www.theigc.org/** and **https://www.theigc.org/funding/call-for-proposals/**

Kumar Das
IGC Programme Policy Manager for IGC Bihar
https://www.theigc.org/person/kumar-das/

Bijeta Mohanty
Programme Economist for the IGC India Programme
https://www.theigc.org/person/bijeta-mohanty/

The workshop will take place from 4:00- 5:00 pm, on Wednesday, 12th May, 2021.

Ahmedabad University

UNIVERSITY GRANTS OFFICE WORKSHOP

Funding compendium

RESEARCH GRANTS, FELLOWSHIPS AND PRIZES

Agency: Global Development Network (GDN), supported by the Ministry of Finance, Government of Japan
Scheme: Japanese Award for Outstanding Research on Development (under the Global Development Awards)
Scheme remit: To support research proposals in low-income or middle-income countries with high potential for excellence in research and clear policy implications for addressing development issues.
Thematic focus: International trade and the promotion of biodiversity
Areas of interest: Research proposals falling within the following macro-policy areas are welcome (this list is indicative but not exclusive):

- - Biodiversity Mainstreaming
- - Climate Change Adaptation
- - Valuation and Management of Ecosystems and Ecosystem Services
- - Human-wildlife conflicts
- - Disaster Recovery; Extreme Poverty Alleviation; Ecological Transition

COVID-19 focus: A direct link to the COVID-19 crisis is welcome, but not required. In light of the quickly changing scenario, proposals that integrate a focus on COVID-19 and related policy responses must explain how the quickly changing policy landscape is likely to impact the focus of the research.
Applicant eligibility: Citizens or Permanent residents of Low or Middle-income countries; Upper age limit 45 years as of 20 July 2020
Budget provisions: Three grants, worth 30000 USD, 10000 USD and 5000 USD, respectively to be used to support research proposed by the winners, budget categories include costs for personnel, data collection, equipment, other costs and overheads
Deadline: 9 June 2021
Weblink: **http://www.gdn.int/awards2021/ORD**
Application process: Via GDN's dedicated online submission platform

Agency: Global Development Network (GDN), in partnership with the French Development Agency, AFD
Scheme: Video contest: Southern voices on global transitions
About the videos: The videos will tell stories on key development transitions taking place across the globe, through the eyes of young researchers working in the Global South. This will enable global audiences to learn about their challenges and successes. The videos will link deep local knowledge and perspectives to the public discourse on global development through a variety of subjects such as climate, energy, gender, governance and more.
Applicant eligibility: The competition is open to researchers with at least a Master's degree in social sciences. Applicants from the natural sciences are welcome to apply if they are currently working in larger multidisciplinary teams with social scientists; Age up to 40 years old on July 4th, 2021
Deadline: 4 July 2021
Weblink: **http://www.gdn.int/GlobalTransitionsSouthernVoices**
Application process: Via GDN's dedicated online submission platform

Agency: Science and Engineering Research Board (SERB)
Scheme: Scientific and Useful Profound Research Advancement (SUPRA)
Scheme Remit: Transformative and disruptive research concepts based on innovative and unproven hypothesis, possessing a high degree of uncertainty, yet having conviction to produce a lasting impact across discipline boundaries qualify for support under SERB-SUPRA.
Budget provisions: Funding for equipment, manpower, consumables, travel, contingency and institutional overheads
Duration: 3 years, can be extended by a further period of 2 years
Deadline: 11 May 2021
Weblink: **https://www.serbonline.in/SERB/Supra**
Application process: Via SERB online portal

Funding compendium

Agency: Science and Engineering Research Board (SERB)
Scheme: SERB Science and Technology Award for Research (SERB-STAR)
Agency Remit: Science and Engineering
Scheme Remit: An award instituted by SERB to recognize and reward outstanding performance of Principal Investigators (PIs) of SERB Projects. SERB-STAR is an initiative to acknowledge exemplary contributions in research and also to motivate the PIs of ongoing projects for outstanding performance.
Applicant eligibility: The nominee should have completed individual-centric SERB project in previous three financial years with "Excellent" grading. Only the PI of such projects and not the Co-PIs shall be eligible; age of the nominee should be within 40 to 50 years as on December 31
Budget provisions: Fellowship of Rs 15,000/- per month, research grant of Rs. 10 lakh per annum and Rs 1 lakh per annum as overhead charges for a period of three years
Duration: 3 years
Deadline: 15 June 2021
Weblink: **https://www.serbonline.in/SERB/Star**
Application process: Via SERB online portal

Agency: South Asian Network for Development and Environmental Economics (SANDEE)
Initiative: Concept notes on managing environmental changes
Agency remit: A regional network that provides research support to South Asian researchers and institutions interested in the inter-connections among development, natural resource use and the environment.
Thematic focus: (i) Policies and instruments for greener development, (ii) Ecosystems management, (iii) Economics of climate change
Budget provisions: Grants are likely to be in the range of USD 20,000- 40,000 over a one to two-year period. Larger grants will be reserved for teams that are multidisciplinary and involve two or more countries in the region.
Submission guidelines: Details on website
Submission deadline: SANDEE accepts concept notes throughout the year but distributes grants in twice a year. Deadlines for grant consideration are May 31 and November 30.
Website: **http://www.sandeeonline.org/news_events_disp.php?id=116**

Agency: Spencer Foundation
Scheme: Research Grants on Education- Large
Budget provisions: Between $125,000 and $500,000, including up to 15% overheads. Cost categories include salaries, collaborators, travel, equipment, project expenses, subcontracting costs, others and 15% institutional overheads.
Duration: 1-5 years
Deadline: Intent to apply stage- 19 May 2021; full application deadline 16 June 2021
Weblink: **https://www.spencer.org/grant_types/large-research-grant**
Application process: Two-stage application process starting with an online “intent-to-apply” followed by a full proposal, applications accepted twice a year.

Agency: Spencer Foundation
Scheme: Research Grants on Education- Small
Budget provisions: 50,000 USD, overheads disallowed. Cost categories include salaries, collaborators, travel, equipment, project expenses, subcontracting costs, others and 15% institutional overheads.
Duration: 1-5 years
Deadline: 4 June 2021
Weblink**: https://www.spencer.org/grant_types/small-research-grant**
Application process: Online, via website

Funding compendium

FUNDING FOR INTERNATIONAL EXCHANGE AND COLLABORATIONS

Agency: Department of Science and Technology (DST), in collaboration with Italian Ministry of Foreign Affairs and International Cooperation
Scheme: India- Italy Joint Science and Technology Cooperation (2021-2023)
Funding mode 1: "Mobility of Researchers": joint research projects where only the expenses for researchers' mobility are funded by both Parties.
Priority areas: a. Information and Communication Technologies b. Physics, Astrophysics, Space sciences c. Ecological and environmental modeling d. Water management e. Disaster risk management
Team Structure: Proposal to include researchers at both Indian and Italian ends
Budget provisions: Only the costs for the exchange of researchers will be financed and no other support like contingency, consumables, manpower or equipment etc should be expected or proposed under the Mobility programme
Deadline: 30 April 2021 (new extended deadline)
Weblink: **https://dst.gov.in/callforproposals/indo-italian-call-proposals-date-extended-till-30th-april-2021**
Application process: Italian PIs shall submit their proposals online, by filling the dedicated form at the link: http://web.esteri.it/pgr/ . Indian PIs should submit the form online via the e-PMS portal.
Additional information: Indian applicants who are in any way involved in the implementation of two or more projects that were previously supported by the DST (International Group) and that are not expected to be completed by 31st March 2021 are not eligible to be a member of the research team.

Agency: Department of Science and Technology (DST), in collaboration with Italian Ministry of Foreign Affairs and International Cooperation
Scheme: India- Italy Joint Science and Technology Cooperation (2021-2023)
Funding mode 2: "Significant Project": joint research projects where research activities are co-funded by both Parties.
Priority areas: a. Renewable energies; climate change and geohazards; b. Technologies applied to cultural and natural heritage. c. Biomedical Sciences leading to communicable and non-communicable diseases d. Sustainable agrifood. e. Environment: sustainable cities and circular economy, healthy and productive ocean/sea. f. Artificial Intelligence & Robotics g. Physics of Matter and New Materials
Budget provisions: Participating Indian institutions are responsible for expenses regarding equipment. - A maximum of 40 % of the Indian side's budget may be allowed for consumables. - Participation of Research students would be encouraged. On the Indian side Fellowship to one student (JRF/SRF/RA) can be supported. Given the bilateral nature of joint research projects, applicants are advised to budget sufficient provision for exchange visits
Team Structure: Proposal to include researchers at both Indian and Italian ends
Deadline: 30 April 2021 (new extended deadline)
Weblink: **https://dst.gov.in/callforproposals/indo-italian-call-proposals-date-extended-till-30th-april-2021**
Application process: Italian PIs shall submit their proposals online, by filling the dedicated form at the link: http://web.esteri.it/pgr/ . Indian PIs should submit the form online via the e-PMS portal.

Funding compendium

Agency: Department of Science and Technology (DST), in collaboration with Italian Ministry of Foreign Affairs and International Cooperation
Scheme: India- Italy Joint Science and Technology Cooperation (2021-2023)
Funding mode 3: "Networks of Excellence"
Priority areas: a. Renewable energies; climate change and geohazards. b. Technologies applied to cultural and natural heritage. c. Biomedical Sciences: communicable and non-communicable diseases
Team Structure: Each Network of excellence must be made up of a minimum of 3 Italian and 3 Indian Research institutions working together on a plan of activities with a potential significant impact on one priority research area. The participation of private companies is strongly encouraged, although they are not eligible as focal points of the network or to receive funding from the national focal points.
Budget provision: Expenditure by NE teams in their own Country would be borne by the respective country, i.e., DST would support expenditure in India by the Indian side of the NE whereas the Italian Ministry of Foreign Affairs and International Cooperation would meet expenses by the Italian side in Italy. Given the bilateral nature of the programme, applicants are advised to budget sufficient provision for exchange visits.
On the Indian side, DST will provide funding support to the Focal Coordinating Indian institute. Funds to other Indian nodes of the NE would be provided through the Focal Coordinating Indian Institute of the NE. DST can provide the following financial support for each NE: · Research Manpower: Maximum One JRF / SRF/ Research Associate for each Node. In addition, one suitable staff unit can be provided to the Focal Coordinator for coordination of the activities. · Research Expenses: Up to Rs. 5 lakh to each Indian Node towards consumables. · Institutional Overhead: Institutional Overhead and contingency support will be determined in accordance with the specific norms of DST. Participating Indian institutions are responsible for expenses regarding equipment.
Deadline: 30 April 2021 (new extended deadline)
Weblink: **https://dst.gov.in/callforproposals/indo-italian-call-proposals-date-extended-till-30th-april-2021**
Application process: send their application by certified e-mail (PEC) to the following address: dgsp09.pec@cert.esteri.it. Indian PIs should submit the form online via the e-PMS portal.

Agency: Department of Science and Technology (DST), in collaboration with Russian Science Foundation
Scheme: Indo-Russian Joint Research Call for Proposals 2021
Priority areas: (1) Smart transport and telecommunications; (2) Smart healthcare and medicine; (3) New Materials; (4) Plant and Animal Bio-Technology; (5) Clean Energy; (6) Artificial Intelligence; (7) Safe Food
Budget provisions: Each project will receive annual funding of up to Rs. 70,00,000 from DST and up to Rbls 70,00, 000 from RSF. This funding will include consumables, accessories, research expenses, exchange visits, institutional overheads as per DST norms.
Duration: 3 years
Team Structure: Proposal to include researchers at both Indian and Russian ends
Deadline: 15th June 2021
Weblink: **https://dst.gov.in/sites/default/files/DST-RSF%20Call%202021%20Guidelines.pdf**
Application process: Indian researchers should submit their proposals on format available at www.onlinedst.gov.in.

Agency: EMBO
Scheme: EMBO New Venture Fellowship
Scheme Remit: In memory Suzanne Eaton, a bright-minded and passionate scientist, the EMBO New Venture Fellowship will help early career scientists explore topics outside their current area to allow them to pursue a new research direction in their future work.
Additional information: The projects should address an important problem or a barrier to progress in the field, and should constitute joint research with the hosting laboratory, rather than consultations. Funded applicants will receive travel and subsistence support for international research exchanges of up to three months, in eligible countries. Applications should promote interdisciplinary research, with the proposed project being different to the applicant's current topic. Applications should aim to form new collaborations, to help ensure the continuity of the research.
Applicant eligibility: Applicants must be active researchers with a minimum of 2 years' research experience at the PhD level, and no more than 2 years' experience as an independent group leader.
Budget provisions: Support for a visit of 3 months, with contribution towards travel costs and subsistence of the fellow
Deadline: 1 June 2021
Weblink: **https://www.embo.org/funding-awards/fellowships/embo-new-venture-fellowship.html#about**
Application process: Via EMBO online application system
More about EMBO Funding opportunities for India, via IndiaBioscience at https://indiabioscience.org/international-grants-and-fellowships/embo-glance

Funding compendium

Agency: Indo-French Centre for Promotion of Advanced Research (IFCPAR/CEFIPRA)
Scheme: Collaborative Research Programme
Agency Remit: Support for Indo-French Science, Technology & Innovation (ST&I) system through various activities
Scheme Remit: Support for research groups through high quality collaborative research projects in advanced areas of basic and applied science to nurture scientific competency in India and France
Research areas supported: 1) Pure and Applied Mathematics, 2) Computational sciences, 3) Life & health sciences, 4) Pure and Applied Physics, 5) Pure and Applied Chemistry, 6) Earth & Planetary Science, 7) Materials Science, 8) Environmental Sciences, 9) Biotechnology and 10) Water
Applicant eligibility: Proposal to be jointly submitted by one Principal Collaborator from India and one Principal Collaborator from France, Indian PI to have permanent position in University
Budget provisions: Maximum of 200,000 Euros for both sides together, covering Manpower (JRF/SRF/RA/Master students for Indian Partners), Recurring Expenses including consumables, domestic travel & miscellaneous expenses/contingencies, International Travel and Equipment : Minor equipment and accessories which are essential for the project with a limit of max. of 10% of total approved budget of the project
Duration: 3 years
Deadline: 15th July 2021
Weblink: **http://www.cefipra.org/Collaborative_Research.aspx**
Application process: Submissions via CEFIPRA online portal

Agency: International Centre for Genetic Engineering and Biotechnology (ICGEB)
Scheme: Collaborative Research Program
Research focus: Basic science, human healthcare, industrial and agricultural biotechnology and bioenergy
Team structure: Active collaboration with ICGEB Research Groups is welcome, but is not mandatory, other international collaborations are encouraged
Budget provisions: Up to 25000 Euros per year, supporting direct costs including major budget categories: Equipment, Consumables, Training, Travel and Literature
Duration: 3 years
Deadline: 30th April 2021
Weblink: **https://www.icgeb.org/activities/grants/**
Application process: Online via portal
Country processes: Each country may endorse a maximum of three (3) project proposals for standard research grant applications, plus two (2) additional Early Career Return Grant applications. The Liaison officer for India is Dr Mohammad Aslam, DBT (please see https://www.icgeb.org/governance/members-states/).
Funded grant information: https://www.icgeb.org/activities/grants/research-grants-impact-2/

Agency: International Centre for Genetic Engineering and Biotechnology (ICGEB)
Scheme: Collaborative Research Program-Early Career Return Grants
Research focus: Basic science, human healthcare, industrial and agricultural biotechnology and bioenergy
Institutional eligibility: Universities in an ICGEB Member State (India is an ICGEB Member State)
Applicant eligibility: Young researchers (not over 40 years old at the time of application) with an outstanding track record, who have spent a minimum of 2 years abroad and have recently returned to an ICGEB Member State to establish their own independent laboratories (not exceeding two years at time of application).
Team structure: Active collaboration with ICGEB Research Groups is welcome, but is not mandatory, other international collaborations are encouraged
Budget provisions: Up to 25000 Euros per year, supporting direct costs including major budget categories: Equipment, Consumables, Training, Travel and Literature
Duration: 3 years
Deadline: 30th April 2021
Weblink: **https://www.icgeb.org/activities/grants/**
Application process: Online via portal
Country processes: Each country may endorse a maximum of three (3) project proposals for standard research grant applications, plus two (2) additional Early Career Return Grant applications. The Liaison officer for India is Dr Mohammad Aslam, DBT (please see https://www.icgeb.org/governance/members-states/).
Funded grant information: https://www.icgeb.org/activities/grants/research-grants-impact-2/

Funding compendium

Agency: United States India Educational Foundation (USIEF)
Scheme: 2022- 2023 Fulbright Fellowships
Scheme Remit: Support for Indian citizens with opportunities for personal, academic and professional growth and exchanges promoting mutual understanding between the people of the United States and India.
Applicant eligibility: Indian nationals
Weblink: **https://www.usief.org.in/Fellowships/Fellowships-for-Indian-Citizens.aspx (details of all Fulbright fellowships can be accessed here)**
Application process: Via online form on website

A selection of the Fulbright Fellowships:

RFP 1: Fulbright-Nehru Postdoctoral Research Fellowships
Applicant eligibility: Indian faculty and researchers who are in the early stages of their research careers in India
Focus areas: Agricultural Sciences; Anthropology; Bioengineering; Chemistry; Computer Science (including, but not limited to, cyber security, digital economy, quantum computing, artificial intelligence, machine learning and big data analytics); Economics; Education Policy and Planning; Energy Studies; Geography (including GIS and Geology); History; Language and Literature; Materials Science (with emphasis on environmental applications); Mathematical Sciences; Neuroscience; Performing Arts; Physics; Political Science (including, but not limited to, International Security and Strategic Studies); Public Health; Public Policy; Sociology; Urban and Regional Planning (with emphasis on smart cities and waste management); Visual Arts; and Women's and Gender Studies.
Budget provisions: J-1 visa support, monthly stipend, round trip economy airfare, tuition and fees, living expenses, accident and sickness coverage, settling in allowance, professional allowance and dependent funding
Duration: 8-24 months
Deadline: 15th September 2021
Additional information: Program begins in May/June 2022

RFP 2: Fulbright-Nehru Academic and Professional Excellence Fellowships
Scheme remit: To provide Indian faculty, researchers, and professionals the opportunity to teach, conduct research, or carry out a combination of teaching and research at a U.S. institution. Depending on the U.S. host institution, it is likely that the grantee may contribute towards developing curriculum and conducting workshops and seminars.
Focus areas: Agricultural Sciences; Anthropology; Bioengineering; Chemistry; Computer Science (including, but not limited to, cyber security, digital economy, quantum computing, artificial intelligence, machine learning and big data analytics); Economics; Education Policy and Planning; Energy Studies; Geography (including GIS and Geology); History; Language and Literature; Materials Science (with emphasis on environmental applications); Mathematical Sciences; Neuroscience; Performing Arts; Physics; Political Science (including, but not limited to, International Security and Strategic Studies); Public Health; Public Policy; Sociology; Urban and Regional Planning (with emphasis on smart cities and waste management); Visual Arts; and Women's and Gender Studies.
Budget provisions: J-1 visa support, monthly stipend, round trip economy airfare, tuition and fees, living expenses, accident and sickness coverage, settling in allowance, professional allowance and dependent funding
Duration: 4-9 months (also a Flex option)
Deadline: 15th July 2021
Additional information: Program begins in August/September 2022

RFP 3: Hubert H Humphrey Fellowship Program
Scheme remit: accomplished young and mid-career professionals from developing countries to the United States for ten months of non-degree graduate study and related practical professional experiences.
Focus areas: Agricultural and Rural Development; Communications/Journalism; Contagious and Infectious Diseases; Economic Development; Educational Administration, Planning and Policy; Finance and Banking; Higher Education Administration; HIV/AIDS Policy and Prevention; Human Resource Management; International Religious Freedom; Law and Human Rights; Natural Resources, Environmental Policy, and Climate Change; Public Health Policy and Management; Public Policy Analysis and Public Administration; Substance Abuse Education, Treatment and Prevention; Teaching of English as a Foreign Language (Teacher Training or Curriculum Development); Technology Policy and Management; Trafficking in Persons, Policy and Prevention; Urban and Regional Planning.
Program details: Programs arranged for the Humphrey fellows will begin in August 2022. They include academic course work at the master's level, and place considerable emphasis on activities such as seminars, special projects, field trips, attendance at professional meetings and conferences, networking with professional counterparts, and professional affiliations with appropriate organizations.
Budget provisions: Tuition and fees, monthly maintenance, round trip economy airfare, accident and sickness coverage, settling in allowance, allowance for books and supplies, allowances for professional activities
Deadline: 15th June 2021
Additional information: Program begins in August/September 2022

Funding compendium

FUNDING FOR ACADEMIA-INDUSTRY COLLABORATIONS

Agency: Department of Science and Technology, in collaboration with VINNOVA, Sweden (implemented by GITA)
Scheme: India-Sweden Collaborative Industrial Research and Development Programme 2021 Joint Call
Thematic focus: (1)Smart and sustainable cities and transport systems, (2)Clean technologies, IoT and digitalization
This may include, but is not limited to: (i) Transport & mobility; Electrical vehicles, Autonomous vehicles, Traffic safety, Mobility as a service, Reduction in traffic congestion, Digital solutions, etc, (ii) Environmental technologies (Eco-system services, Clean water and air, Waste management, Renewable energy, etc.), (iii) Circular and bio-based economy (Bio-based materials, Bio-fuels, Resource efficiency in consumption and production, Waste-to-wealth, etc.), (iv) Energy (Reduced energy consumption and carbon dioxide emissions, Alternative fuels and mobile energy sources, Renewable energy, Energy storage, Resource-efficient infrastructure planning, etc.), (v) City planning (ICT for urban technical supply, Geodata, tools for dialogue with citizens, etc.)
Team structure: The Indian Project Lead (IPL) (i.e. lead company) must be a commercial (for profit) company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India. Other Industry Partners or Academic/R&D Institutions can be brought in as co-investigators. The Swedish Project Lead applicants must be a for-profit R&D Company, and can bring in other research-performing organizations in as consortium partners. Swedish research performing institutions (universities, colleges and research institutes) as well as test beds, public organisations, and other companies with operations in Sweden are encouraged to actively participate in the consortium.
Budget provisions: Labour, equipment, project management, materials and consumables, sub-contracts, travel and subsistence, joint commercialization, institutional overheads
Deadline: 6 May 2021
Weblink: **https://gita.org.in/OnlineRfp/ProgramInfo.aspx?GITA=kZdo4yRVS4gRExygXA1GypJuXY/mY5as6sC5zS6MPDw=**
Application process: Application package available on website

Agency: Department of Science and Technology, in collaboration with Swedish Energy Agency, Sweden
Scheme: India-Sweden Collaborative Industrial Research & Development Programme 2020 on "Smart Grid"
Team structure: The Indian Project Lead (IPL) (i.e. lead company) must be a commercial (for profit) company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India. Other Industry Partners or Academic/R&D Institutions can be brought in as co-investigators. The Swedish Project Lead applicants must be a for-profit R&D Company, and can bring in other research-performing organizations in as consortium partners. Swedish research performing institutions (universities, colleges and research institutes) as well as test beds, public organisations, and other companies with operations in Sweden are encouraged to actively participate in the consortium
Budget provisions: Labour, equipment, project management, materials and consumables, sub-contracts, travel and subsistence, joint commercialization, institutional overheads
Duration: 2 years
Deadline: 20 May 2021
Weblink: **https://dst.gov.in/callforproposals/india-sweden-collaborative-industrial-research-development-programme-2020-smart**
Application process: Application package available through funding guidelines package
Finding collaborating partners: SEA/DST can support Swedish/Indian organisations regarding facilitating contacts and information about Indian/Swedish stakeholders. Please contact SEA/DST for further information. Both Parties will organise activities for potential applicants to meet physically or virtually, understand each others demand and expertise and match together for project formulation.

Agency: Global Innovation and Technology Alliance (GITA)
Scheme: India-Israel Joint Call
Scheme remit: To promote facilitate and support joint Industrial R&D projects between companies from India and Israel, which would lead to successful commercialization and benefit for both countries.
Thematic focus: Agriculture, Energy, Healthcare, Information & Communication Technologies (ICT), Water
Team structure: The Indian Project Lead (IPL) (i.e. lead company) must be a commercial (for profit) company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India. Other Industry Partners or Academic/R&D Institutions can be brought in as co-investigators. The Israeli Project Lead applicants must be a for-profit Israeli R&D Company.
Budget provisions: Labour, equipment, project management, materials and consumables, sub-contracts, travel and subsistence, joint commercialization, institutional overheads
Deadline: 3 May 2021
Weblink: **https://gita.org.in/OnlineRfp/ProgramInfo.aspx?GITA=kZdo4yRVS4gRExygXA1Gyr/hqnuBVm8URYuihQuuUKs=**
Application process: Application package available on website

Funding compendium

FUNDING FOR ACADEMIA-INDUSTRY COLLABORATIONS

Agency: Global Innovation and Technology Alliance (GITA)
Scheme: India-Korea Joint Call
Scheme remit: This India – Republic of Korea program aims to foster and support the development of collaborative R&D projects that bring together companies, research organizations, academics and other collaborators from both countries for the joint development of innovative products or processes in the following technology sectors:

- Future Manufacturing
- (smart factory, electric vehicles, 3D printing, robotics & automation, advanced materials)
- Future Utilities
- (Renewable Energy including Hydrogen and Fuel Cells), Energy Efficiency, Smart Grid, Waste-to-Energy (WtE) technologies)
- Digital Transformation
- (Information & Communication Technologies including IOT, AI, Big Data, Software)
- Biotechnology and Healthcare

Team structure: The Indian Project Lead (IPL) (i.e. lead company) must be a commercial (for profit) company under the Indian Companies Act 1956/2013, which operates in and is headquartered in India. Other Industry Partners or Academic/R&D Institutions can be brought in as co-investigators.
Budget provisions: Labour, equipment, project management, materials and consumables, sub-contracts, travel and subsistence, joint commercialization, institutional overheads
Deadline: 1 June 2021
Weblink: **https://gita.org.in/OnlineRfp/ProgramInfo.aspx?GITA=kZdo4yRVS4gRExygXA1GyunWC62gp7w/JE0kGDJ4ID8=**
Application process: Application package available on website

Agency: Indo-French Centre for Promotion of Advanced Research (IFCPAR/CEFIPRA)
Scheme: Industry-Academia Research & development Programme (IARDP)
Agency Remit: Support for Indo-French Science, Technology & Innovation (ST&I) system through various activities
Scheme Remit: To support collaborative research programme involving Industry & Academia of both India and France
Team structure: At least one industrial partner and one research institute each from India & France (2+2 Model)
Budget provisions: Maximum of 200,000 Euros for both sides together, industry partners are expected to make cash or in kind contributions, support includes personnel, travel, consumables and contingency and minor equipment
Duration: 3 years
Deadline: 1st July 2021
Weblink: **http://www.cefipra.org/Industry_Academia.aspx**
Application process: Submissions via CEFIPRA online portal

NETWORKING RESOURCES

Scout for Partnerships, Resources and Knowledge (SPARK)
SPARK aims to create a virtual-seamless network of IUSSTF stakeholders across India and the United States. This unique platform will enable Members to establish new connections, explore new opportunities, have creative discussions about topical issues, and build a committed transatlantic grid of scientists, engineers and entrepreneurs.
More information at: https://spark.iusstf.org/

Funding compendium

NETWORKING RESOURCES

EURAXESS - Researchers in Motion is a unique pan-European initiative delivering information and support services to professional researchers. Backed by the European Union, member states and associated countries, it supports researcher mobility and career development, while enhancing scientific collaboration between Europe and the world.
More information at: https://euraxess.ec.europa.eu/
EURAXESS National Portals: https://euraxess.ec.europa.eu/choose-your-country

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All requests for research funding from internal and external sources should be sent to the University Research Board for approval, via the Grants Portal.

Details of intramural funding available via Ahmedabad University are available in the University Research Board Policy Document. This includes Start-up grants, Seed grants, University Challenge grants, Teaching Material Development/Innovation grants and Conference Travel support.

Previous editions of the Research Horizons Newsletter and Funding compendium are archived on AURIS. These editions include details of schemes with rolling calls and additional schemes with past, ongoing or anticipated deadlines. For suggestions on the Funding compendium, please contact the Dean of Graduate School and Research at urb@ahduni.edu.in.