

PUNE KNOWLEDGE CLUSTER

Established by the Office of The Principal Scientific Adviser, to the GoI under The City Knowledge & Innovation Cluster Initiative (CKIC), the Pune Knowledge Cluster aims to bring together Academic Institutions, R&D organizations, Industries, NGOs, Civic Bodies, Local & State governments to collectively work for the betterment of Pune City by leveraging the science & technology capabilities of its partner organizations.

FROM THE PKC DESK

Greetings, dear readers!

We are back with the next issue of PEAKS – PKC's Quarterly Newsletter! In this issue, we would like to highlight key milestones from PKC's journey for the months of **February to June 2024**.

The Cover Story features our project **Jal Mulya - a cost-price based approach towards effective water management**. The **Sneak Peak** section, gives the reader a peek into the **Launch of ChemAmaze**, a program implemented by PKC, together with IIT-Madras and supported by BASF Chemicals India Pvt. Ltd. In this issue, we are also **In Conversation** with **Dr. Rajesh Karyakarte, Professor and Head, Department of Microbiology, B. J. Medical College, Pune**.

Through the Team Connect section, we would like to showcase our diverse team who helps realise PKC's vision. This issue will also give an overview of the Events, Citizen - Centric Talks and Collaborations that PKC has organised and fostered within the last quarter.

Happy reading!



Issue available at
<https://www.pkc.org.in/resources/newsletter/>
Or Scan the QR Code

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COVER STORY



JAL MULYA

A cost-price approach towards effective water management

Water scarcity is a significant concern for the country, with serious implications for our economic growth. Lack of access to clean water also reduces the quality of day-to-day life of citizens and increases health risks.

While water conservation is the most popular approach towards managing the water crisis, it is becoming increasingly difficult to implement in the long run, especially amidst the growing challenges of global warming, erratic rainfall, and the rising demands of increasing population, urban development and agriculture. Water is viewed as a public commodity in today's civilised societies, and this perspective has largely dictated policy-

level decisions as well as ground level provisions made towards ensuring sufficient water supply for citizens.

Dr. Ashwini Keskar, Program Manager, Sustainability and Environment at PKC says, "During our discussions with the local civic bodies, we realised that delivering good quality water is a costly process requiring effective facilities for ensuring the sourcing, treatment, storage and distribution of water". She further elaborates that despite constant efforts by governments and administrations, water supply and treatment projects often operate at a loss due to lax revenue generation resulting in substandard service delivery.

In order to get to the bottom of the issue, PKC engaged in several brainstorming sessions with experts from different organisations in the water sector, namely- the Pune International Center (PIC), Centre for Sustainable Development (CSD), Gokhale Institute of Politics & Economics (GIPE); as well as the industry. These discussions

underscored a need for developing a structured approach to understand the actual cost of water purification, distribution and other related matters borne by the administrative bodies in the Pune Metropolitan Region (PMR). A roundtable discussion was held in January 2024, with various stakeholders- including the local civic bodies, industries as well as non-governmental organisations and individual consultants operating in and around Pune district to gain further insights on these aspects. Discussions from the roundtable led to the conclusion that there is a need to understand the intrinsic economic value of water both to the suppliers, the government administration as well as the users. While it is easy to estimate the value of water for the government; there are a lot of nuances in terms of the economic externalities involved that dictate the price of water for end users.



Mr. Dinanath Kholkar, who heads the research track- Science, Technology and National Innovation Ecosystem at PIC, says, "PIC's Science, Technology and National Innovation research track focuses on introducing science and technology elements to solve civic issues. Since PKC was already involved in working closely with the local civic bodies, we decided to augment certain aspects of their work together with PIC's expertise and experience. Further encouragement from the Principal Scientific Advisor himself, propelled us to take this project a notch higher and we decided to go beyond the usual mandate of our research track, and conduct hardcore on-ground research."

The project was then conceptualised and redesigned in a manner that it follows the **STEP - Social Technology Economics and Policy** methodology and each of these aspects will be examined separately, as well as in relation to each other in the context of the project.

Considering the scale of the project and the involvement of the larger population in the Pune Metropolitan Region, it is essential to keep the citizens in loop in order for a successful execution of the project. Thus, the press has been actively involved to amplify the project and to generate awareness amongst citizens. Apart from this, several social campaigns are being planned to promote circular usage of water.

Combined with traditional wisdom, harnessing the power of smart technologies in data acquisition as well as in informed decision making is a key element of the project. Currently, water pricing can be tracked at an individual level through property tax and at the society or the macro level through water metres. However, there is no uniformity in collecting the data, as well as no clear understanding of the water usage at the household or micro level, leading to a skewed

understanding of the actual usage of water. Thus, supporting technological interventions such as - installation of household metering systems and Artificial Intelligence-based technologies to track water usage at the micro level, use of telescopic metering, installation of sensors to understand leakages in water distribution systems, and identification of different landscapes and water bodies using space technology, are some of the key elements of the project.

Mr. Kholkar adds, *"Engaging the right type of technological experts is crucial for the success of this project. Also, we plan to involve engineering students to work on certain parts of the project to gain new ideas for technological interventions after detailed ground truthing."*

In order to understand the economic aspects of the project, PKC has teamed up with experts from Gokhale Institute of Politics and Economics, which has a long history of working with urban local bodies, state governments, union ministries. The Center for Sustainable Development (CSD) at GIPE is primarily involved in this project and is responsible for understanding the involvement of the different stakeholders as well as the usage of the right data collection tools. Dr. Gurudas Nulkar, Professor and Director, CSD who heads this project further elaborates, *"The main aspects of the project include gathering existing data in the right format from different sources, and understanding the different variables involved in water pricing, along with their interconnectivity. Further, we also plan to conduct a lot of secondary research and analysis of existing data in order to identify gaps."*

The research team led by Dr. Nulkar includes Mr. Soomrit Chattopadhyay, who is a Senior Research Associate at CSD, along with interns, largely from the economics background. Apart from primary data collection, the project also involves secondary research and analysis of the data that has already been collected.

The analysis will enable relevant decision-makers for the development of evidence-based policies revolving around rationalisation of water tariffs. Elaborating more upon the policy aspects of the project, Mr. Siddharth Desai, Joint MD, Kishor Pumps, and an integral partner in the project says, *"My work in the water sector as part of my company led me towards a realisation that there is a policy/governance angle to solving the water problem. Ensuring that water is available at the right quantity, quality and at the right time, as well as distributed equally, especially in the face of climate change requires a top-down approach. Thus, currently, a lot of the policies are looking at supply augmentation, but there is ignorance on the demand side. Our project will focus directly on the demand management, specifically by introducing a water tariff for the end users."*, notes Mr. Desai.

Dr. Keskar concludes, *"The ultimate goal of the project is to develop a standardised template for evaluating urban water supply costs, which can then be extended from the Pune Metropolitan Region to other cities within the country."*

Read more about the project in this interim report:

<https://puneinternationalcentre.org/publications/48-pic-jal-mulya-interim-report-april-2024/>



IN CONVERSATION

DR. RAJESH KARYAKARTE

Professor and Head,
Department of Microbiology
B. J. Medical College, Pune

Former Dean, Government Medical
College, Akola

Member, Maharashtra State COVID-19

Task Force Coordinator, Maharashtra
State Genome Sequencing for SARS-
CoV-2

In this issue of PEAKS, we are ***In Conversation*** with

Dr. Rajesh Karyakarte, who is professor and head of the Department of Microbiology at the B. J. Medical College, Pune.

Apart from this, he is also the Former Dean of the Government Medical College in Akola, a member of the Maharashtra State COVID-19 Task Force and Coordinator for the Maharashtra State Genome Sequencing for SARS-CoV-2.

Given that BJMC is traditionally viewed as a medical college, could you give an insight into the research work being conducted by BJMC?

As an active member of the Directorate of Medical Education and Research, research as a mandate has been enshrined in our college, and therefore has always been at the forefront. Research at the undergraduate (MBBS) level is funded by the Indian Council of Medical Research (ICMR), which include short-term projects completed by students during their entire course of the degree, while research conducted by the postgraduate (MD) students is in the form of a dissertation, including a mandatory presentation/ defence, for completion of the degree. In addition, as per the NMC norms they have to publish a paper in a peer-reviewed journal/present an oral paper or poster at a conference.

Apart from this, we also collaborate with several national institutes to conduct research in basic/clinical sciences. During the COVID-19 pandemic, our department at BJ has been at the forefront of the research, as part of INSACOG. Some of the projects that we have been a part of include: Genomic surveillance for SARS-CoV-2 virus, as well as evaluating the severity and outcome of the infection and correlation of clinical outcomes with the virus variants, in collaboration with the Department of Biotechnology, Govt. Apart from this, we are also involved in projects on influenza and acute respiratory viruses, together with CDC, Atlanta and AIIMS, Delhi. Together with ICMR, we are working on two projects. One of the projects involves a clinical study to understand whether the smallpox vaccine is effective against the prevention of monkeypox. The other project with ICMR-NIV is an interesting one, where we are trying to understand the economic burden of the COVID-19 in Maharashtra. Apart from this, we are involved in several projects with John Hopkins University (JHU), US. We are also involved in several national programs including: Antimicrobial Resistance Program of the National Center for Disease Control, National Vector Borne Disease Control Program, National Tuberculosis Elimination Program, National AIDS Control Program, National Program for STI, National Hepatitis Control Program, National One Health Program for Prevention and Control of Zoonosis, and the Integrated Disease Surveillance Program (IDSP).

You have worked with several organisations so far. As a medical doctor, what do you think is the biggest advantage of working in a collaborative manner?

As a hospital, we have the patients, the data and the samples with us, what we lack is the means for testing it with the state-of-art, high-end instruments, which is where research labs come into picture. So that is how we primarily identify our collaborators and we have gained a lot from them - especially in terms of expertise and acumen. Also, after working with various research organisations such as CDC or NIH, we got an insight into how international research work is actually carried out.

During the pandemic especially, working in a collaborative manner has helped us tremendously. Being at the forefront of the Pune Consortium for genome sequencing and also as a part of INSACOG, I had the opportunity of working with different organisations such as CSIR-NCL, NCCS, IISER, Pune, NIV, NEERI, and Haffkine Institute, amongst others. Further, we also got an opportunity to put India on the global map, in terms of providing valuable insights regarding the SARS-CoV-2, and its pathophysiology.

What do you usually look for in a collaboration?

We usually have a multidisciplinary approach towards collaboration - where we would like to work with epidemiologists, environmental scientists, local authorities, public health agencies,

researchers, funding agencies, and healthcare providers to solve the problem at hand. Having said that, ultimately establishing a human connection is of utmost importance for us, as in the absence of a basic understanding between two parties, even the most sophisticated of infrastructure cannot produce results; and I am glad to say that until now we have had a fantastic experience working together with all our collaborators!

Could you shed some light on the work done together with PKC?

One of the most important projects we have with PKC is the COVID-19 clinical database which is being developed together with several other hospital and industry partners in Pune.

Apart from this, other projects include: dengue sequencing and observational study to map dengue incidence in Pune, wastewater surveillance studies for COVID-19 and antimicrobial resistance.

What are the main public health issues that you wish to tackle through your work?

The main issues that we wish to tackle are:

- Antimicrobial Resistance
- Tuberculosis
- Pandemic Preparedness through wastewater surveillance
- Building of Biorepository
- Understanding Cancer Genomics

SNEAK PEAK



Launch of ChemAmaze: A platform for gamified learning in Chemistry

“The office of the Principal Scientific Advisor is happy to be a flagbearer of a program like ChemAmaze, which not only aligns with SDGs 4 and 5, but also showcases the commitment of the office of the PSA towards bringing about a visionary change in the education system of our country!”, said Dr. Mrs. Parvinder Maini, scientific secretary, office of the PSA as she unveiled PKC's newest initiative - ChemAmaze, on 6th March 2024 in Pune.

The ChemAmaze program is a unique initiative of PKC under its STEM Education vertical, and is implemented in collaboration with IIT-Madras with the support of BASF Chemicals India Pvt. Ltd.

The program aims to provide an opportunity for students and teachers to access and adopt game-based teaching & learning techniques, as recommended by the National Education Policy (NEP) 2020. The launch program took place at Inter-University Center for Astronomy and Astrophysics (IUCAA), in Pune and was attended by over 80 individuals, including school as well as college faculty and students.

Elaborating more upon the special features of the program, Mr. Kartic Vaidyanathan, Guest Faculty, IIT-Madras, said, “The program intends to make the learning process enjoyable, instead of threatening and in doing so, create an appeal towards learning even for an average student.”

Apart from incorporation of gaming elements to generate curiosity amongst the students, the empowerment of teachers to utilise digital pedagogy in teaching is also a core aspect of the program, wherein teachers will be trained to create their own games and thus. The games created through this program will be a part of an open-source repository, which can be used by



schools nationwide. The program envisions a future where students are actively engaged in the learning process and develop a deep curiosity for STEM subjects. It aims to create an inclusive and dynamic learning environment that nurtures critical thinking and problem-solving abilities.

To know more about the program and to contribute towards it, visit:

<https://www.pkc.org.in/pkc-focus-area/capacity-building/platform-for-gamified-learning-in-chemistry/>

NATIONAL & INTERNATIONAL EVENTS

This section showcases events PKC has hosted to promote building of collaborative networks and also highlights events and meetings where PKC has been invited to present its initiatives.

Events organized by PKC

Educational tours to Inter-University Center for Astronomy and Astrophysics (IUCAA) and Indian Institute of Science, Education and Research (IISER), Pune | 22 January and 7 February 2024



Under PKC's flagship initiative- LEAD: Learn | Explore | Access | Discover, two educational tours were arranged, for high school students in collaboration with Rotary International. Students explored state-of-the-art facilities and gained information about several STEM techniques.



STEM Teacher Training Workshop 30 January 2024

Conducted in collaboration with Muktangan Exploratory, this hands-on workshop empowered school teachers with innovative methods of teaching science and maths topics.

Digital Twin Roundtable | 9 February 2024

Conducted in collaboration with CDAC, Open Health Systems Laboratory (OHSL) and Digital Twin Consortium at IUCAA, the second digital twin roundtable hosted interesting discussions on emerging digital twin technologies and their varied applications in the Indian context.



SAKSHAM Workshops for Public Healthcare Workers | 12th February, 15th February and 21st February 2024



Conducted in collaboration with National Vector-borne Disease Control Program (NVBDCP), National Health Mission and the District Malaria Office, Pune, PKC's Saksham Workshop series focuses on empowering multipurpose healthcare workers with essential knowledge about vector-borne diseases so that they could be better equipped in controlling and preventing the spread of these diseases, particularly, dengue. Workshops in February were conducted for field workers of Khed, Purandar, Shirur and Daund talukas.



One Million Galaxies Roadshow | 18 to 23 February 2024

A one-week long roadshow was conducted in four different colleges in Kerala, to generate awareness about PKC's flagship citizen science program – One Million Galaxies. Participants were introduced to, and given a live demonstration of the One Million Galaxies platform, after which real-time data was collected.

EduConclave: Sharing best practices in STEM | 27 February 2024

On the eve of National Science Day 2024, PKC organized a one-day conference: EduConclave: Sharing Best Practices in Education, aimed at bringing together various stakeholders in the space of STEM Education – educators, thought leaders, NGOs and experts, in order to facilitate exchange of knowledge, experiences, and latest trends in Science, Technology, Engineering and Mathematics (STEM).

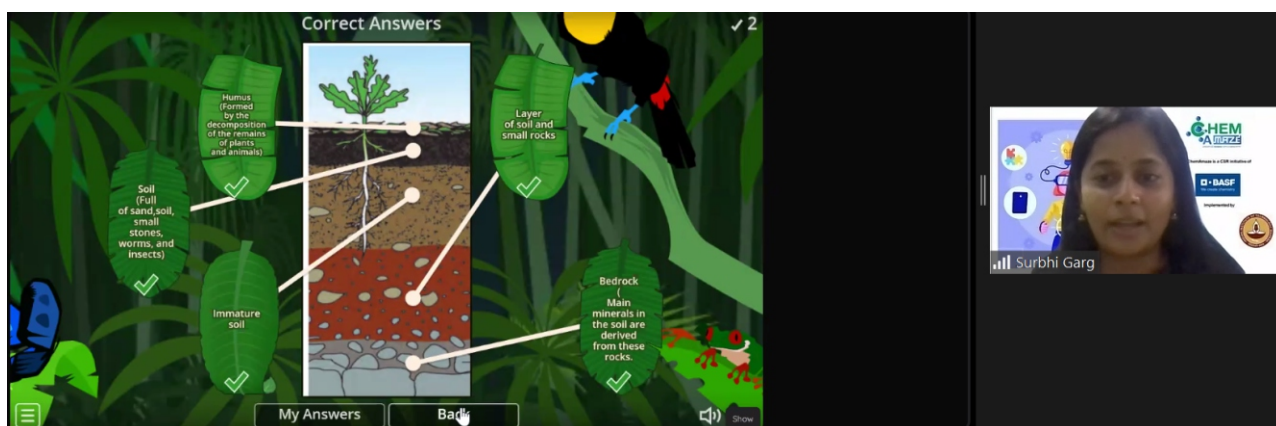


Release of the WEnyan Compendium | 6 March 2024



Dr. Mrs. Parvinder Maini (Scientific Secretary, Office of PSA) released a compendium featuring the journeys of the awardees who are a part of the WEnyan Scholarship and Mentorship Program.

ChemAmaze: Teacher training workshop | 11 March 2024



As part of the ChemAmaze program, an online workshop was conducted for teachers to empower them with skills for using games as a pedagogical tool in their regular teaching curriculum. The workshop was conducted in collaboration with IIT-Madras.

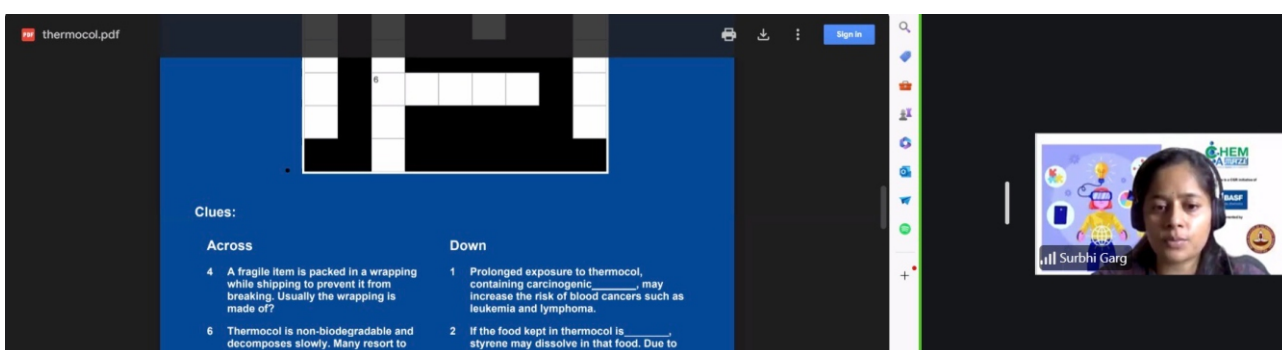
Principal Scientific Advisor's visit to PKC | 8 April 2024



Prof. Ajay Kumar Sood, Principal Scientific Advisor to the GoI visited Pune for an interaction with the PKC team and its partner organisations, to discuss strategies and future roadmap for PKC.

ChemAmaze: Teacher training workshop level 2 | 29 May 2024

Conducted in collaboration with IIT-Madras, the workshop empowered teachers



with skills for using games as a pedagogical tool in their regular teaching curriculum. The workshop hosted live demonstrations of two educational games and also introduced participants to online tools for creating games.

Launch of the COVID-19 clinical database | 30 May 2024, Pune

PKC, together with various partners launched the COVID-19 clinical database, an open-source platform which hosts retrospective COVID-19 clinical data, capturing more than 100 different parameters, from 2000 patients across Pune.

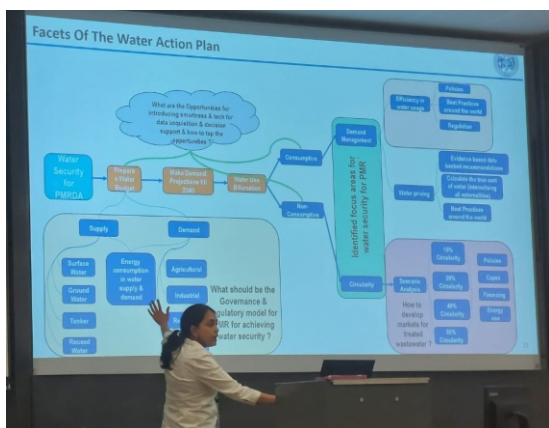


AMR Frontline Workshops for medical students | 9 and 11 June 2024, Pune

PKC in collaboration with the Superheroes against Superbugs (SaS) conducted two one-day workshops on raising awareness for Antimicrobial Resistance (AMR) for second year MBBS students on 9th and 11th June, at Byramjee Jeejeebhoy Medical college (BJMC) and Bharati Vidyapeeth Medical College (BVMC), respectively.



PKC representation at events



18th Danish Water Forum, 30 January 2024, Copenhagen, Denmark

As a part of the India Denmark Water Innovation Technology Network, supported by the Global Network Innovation Program, PKC presented their work at the Danish Water Forum in a session on – Water and Climate Resilience in India: research and innovation needs.

Brainstorming workshop on National Award for Women's Development through application of science and technology, 20 February 2024, Pune

PKC was invited to be a part of a brainstorming workshop organized by BAIF, in collaboration with Department of Science and Technology (DST), aimed at

gathering valuable insights and feedback from experts to enrich the objective of the award, while discussing strategies on how the award can be reconstituted in terms of its indicators, scope, eligibility criteria, and to gather recommendations/suggestions for improving the outreach and continuation of this award.



30th Raman Memorial Conference 1 and 2 March 2024, Pune

PKC was invited to be a part of the inaugural ceremony of 30th Raman Memorial Conference on Smart Materials for Science and Technology, jointly organized by the Department of Physics, Savitribai Phule Pune University and Indian Physics Association, Pune Chapter.



India Gaming Show, 14 to 16 March 2024, Pune



PKC participated in the India Gaming Show 2024, an international gaming, animation, e-sports and infotainment event, and showcased their work under the ChemAmaze program- which included a range of playable games from offline crosswords and word searches to online quizzes and platformer games, all designed to teach Chemistry to school students (6-8 std).

KO-CONNECT 2024, 17 March 2024, Mumbai



PKC was invited to be a part of a panel discussion in KO-CONNECT 2024, an event organized by the Kotak Education Foundation for Excel Alumni, and share insights on leveraging the power of networking.

World Water Day Event, 22 March 2024, Pune



PKC was invited to be a part of a panel discussion - Collaboration for SDGs, in an event organized on the occasion of World Water Day 2024, by Ecosan Services Foundation (a not-for-profit organization working in the sanitation sector), to share insights and learnings on using the power of collaboration and networking to solve local environmental issues.

All Cluster Industry Connect Event, 21 May 2024, Delhi

Helmed by the Office of PSA, the event brought together representatives from all seven science and technology clusters and several industry associations across India. The meeting hosted discussions on the technological advancements as well as improvements necessary for driving progress within the industry, and the specific role that the clusters can play in fulfilling these requirements. It also served as a platform to showcase the work done by the clusters.



CITIZEN CENTRIC TALKS

PKC's citizen-centric talks are aimed at making science accessible to citizens and increasing scientific curiosity. The talks are available on our Youtube Channel (<https://www.youtube.com/@PuneKnowledgeCluster>) . They are held online to ensure nation-wide and global participation.



Speaker: Dr. Menaga Magendran
Managing Director, Chief Executive Officer, Bioneemtec India Pvt. Ltd., Negha Green Lab LLP, Women's Biotech Park, Chennai)
Topic: My Entrepreneurial Journey in Pharmaceutical Chemistry
| 16 February, 2024

As part of PKC's Women Role Model Talk Series, in this talk Dr. Magendran shared her professional journey with the participants, while providing useful insights about the challenges faced while establishing a biotech firm.



Speaker: Dr. Sundeep Salvi
Director, Pulmocare Research and Education (PURE) Foundation, President, Indian Chest Society, Distinguished Professor of Research, Symbiosis International University
Topic: Air Pollution and its effects on Health | 25 April, 2024

As a part of PKC's Health Talk Series, Dr. Salvi elaborated upon the biological effects of air pollutants and provided insights on simple measures that can be used in the daily life to curb the impact of air pollution.

COLLABORATIONS

In the last quarter, PKC has signed MoUs for several initiatives under the capacity building, health, and sustainability & environment verticals.



**VISHWAKARMA INSTITUTE OF
INFORMATION TECHNOLOGY**

AUDIENCE CONNECT

Want to be a part of PKC's student-driven initiatives?

PKC's program - Behaviour Nudges for Sustainable Transportation, is a unique student-driven initiative, which focuses on generating awareness amongst the general public regarding the usage of public transport. Hear more from the interns about their experiences!

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The internship provided me with ample opportunities to understand how research is conducted, how surveys are designed, how to analyse data comprehensively and also how to communicate my findings clearly to stakeholders. The skills gained through this internship have strengthened my ability to contribute effectively to other projects. Further, working with the PKC team on this project has been an enriching experience- the collaborative and supportive environment allowed ideas to be freely shared and discussed.

- Ms. Parul Saini Former Urban Management student, CEPT University

Through this internship I worked on conducting surveys, analysing data and compiling the findings into a conclusion report. I had a great & valuable time at PKC during my internship and I had an opportunity to learn important tools - Q-GIS, Mapping, Report Formation, Analysis Presentation.



- Ms. Nidhi Deshpande (4th year engineering student, COEP)



As a coordinator, my role was not only to contribute towards surveys conducted for the project, but also towards performing various activities for the NICMAR student team who was a part of the project. I am thankful for the guidance provided by the PKC team throughout my internship. My work has taught me that everyone has a role to play in protecting our planet and even small actions, like talking to people, and developing eco-friendly habits can bring about a change in tackling climate change.

- Ms. Janhavi Patil (MBA student, NICMAR University)

Working with the PKC team was an enjoyable experience with lots of insightful discussions and learnings. My main learning from this internship was the power of collaborative problem-solving and the effectiveness of incorporating behavioural insights into practical solutions. It reinforced the importance of clear communication and interdisciplinary collaboration in driving meaningful change



- Mr. Vinayak Waghamare (Civil engineering student, Genba Sopanrao Moze College of Engineering)

To know more about the program, visit: <https://www.pkc.org.in>

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TEAM CONNECT

PKC is happy to provide a platform for young and dynamic individuals who are keen to broaden their horizons and explore new opportunities. Our team members have diverse backgrounds and skill sets. Some are showcased in this issue:



Mr. Atharva Pathak

Software Engineer

With a background of software engineering and experience with website and application development, software localization and data curation, my current work at PKC involves System and Data Centre administration, management of Big Data sets as well as deployment of various software pipelines and AI/ML tools for insights of large datasets.

Ms. Sonalika Purkayastha

Assistant Project Manager, Capacity Building

With a background in Astrophysics research and experience in science outreach and teaching, I work primarily in the 'ChemAmaze' project at PKC, where we develop games to complement classroom teaching. I also contribute to other projects in the Capacity Building vertical and sporadically contribute as a graphic designer for PKC.



Dr. Shilpa Jain

General Manager

With an educational background of a doctorate in Physics, I have a diverse experience in research, academia, teacher training, STEM education, and the IT sector. Currently, as the General Manager at PKC, I oversee administration, management, and industry relations, and am also responsible for coordinating resources, teams, and timelines to ensure that all the programs run efficiently.

Mr. Mahesh Goudelar

Field Research Officer, Sustainability & Environment

I come from a social service background, with over 14 years of professional experience in social organisations and 5 years of experience in the environment sector. At PKC, I undertake field work for the Treeverse Program under the Sustainability and Environment Vertical.



Ms. Rutuja Sonmale

Project Assistant, Capacity Building and STEM Education

I have an educational background in Mathematics and an experience in teaching Mathematics & Science to secondary school students. In my current role, I assist the Capacity Building Vertical with all projects and activities at PKC and contribute to the Gamification and Teach with Tech projects.



Ms. Mrunalini Dharmadhikari

Admin

Being a commerce postgraduate and law graduate, I have been working in the field of administration, purchase, and accounts for the last 25 years. At PKC, I now look at the administration and legal work since the past 1.5 years.



Ms. Poornima Sangewar

Assistant Project Manager, Health

With 9 years of experience in project management, data analysis, and communication within the public health domain, I oversee on-site and off-site projects, conduct training workshops for health workers and medical students, manage finances, and foster communications with different stakeholders for PKC's health vertical.



Dr. Vinay Rale

Advisor, Health

I come with over 50 years of experience in teaching, research, administration, consultancy, extension and entrepreneurship, with a specialisation in microbiology and biotechnology. Currently, in my capacity as an advisor to the health vertical at PKC, I help them liaise effectively between industries, research institutions and academia, to solve issues that are most relevant to them.





PUNE KNOWLEDGE CLUSTER

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