PEAKS
THE PKC NEWSLETTER

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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 highlight key milestones from PKC's journey from January to March 2026.

The **Cover Story** features our program, **EduConclave 3.0**. The **Sneak Peak** section gives the reader a peek into **Bridging Borders for Women in STEM**. In this issue, we are also In **Conversation** with **Dr. Umesh Shaligram, Executive Director, Serum Institute of India.**

The section **Innovations in Action** showcases **Solinas and Salcit Tech.**

In this issue, the readers will also get an overview of the events that PKC has organized and important partnerships that PKC has fostered within the last quarter.

Happy reading!

Issue available at
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In This Issue

Cover Story

EduConclave 3.0:

Strengthening the Momentum for Future-Ready STEM Classrooms

The third edition of **EduConclave** marked an important milestone, bringing together educators, researchers, practitioners, and institutions to collectively reflect on the future of STEM learning. Over the past three years, EduConclave has evolved into a platform for dialogue and collaboration, and **EduConclave 3.0** continued to build on this momentum with the theme **"Rewriting STEM Education for Future-Ready Classrooms."**

The conclave opened with the inaugural session addressed by **Raghunathan Srianand,** Director of Inter-University Centre for Astronomy and Astrophysics (IUCAA); **Priya Nagaraj,** Interim CEO of Pune Knowledge Cluster (PKC); and **Gaurav Arora,** Chief Growth Officer at Salaam Bombay Foundation. Their remarks highlighted the growing need for collaborative and practice-informed approaches to strengthen STEM education ecosystems and prepare learners for rapidly evolving scientific and technological landscapes.

The keynote address by **Milind Watve,** independent researcher and former professor at Indian Institute of Science Education and Research Pune, invited participants to revisit fundamental questions about how science is taught and learned. Emphasizing inquiry-driven learning, the talk encouraged educators and practitioners to cultivate curiosity, questioning, and deeper engagement with scientific thinking in classrooms.

A key highlight of EduConclave 3.0 was the panel discussion titled **"Enabling Future-Ready Classrooms: Ground Realities, Impact, and Possibilities."** The panel brought together voices from schools, research

institutions, and civil society organisations, offering a rich perspective on the opportunities and constraints shaping STEM education today.

The discussion featured **Pandurang Kakatkar** from Mauli Madhyamik Vidyalaya (Sindhudurg), **Ramesh Hitnalli** of Agastya International Foundation, **Ashutosh Bhujbal** of Jnana Prabodhini, **Karthick Balasubramanian** from Agharkar Research Institute, **Shraddha Kamparia,** CEO of Pimpri Chinchwad Science Park and Planetarium, and **Richika Padubidri,** AVP – Community Engagement and Belonging (APAC). Moderated by **Samir Dhurde** from SciPOP at IUCAA, the panel examined classroom realities while also highlighting the importance of partnerships that connect schools with research institutions, science centres, and community initiatives.

The conclave also featured a hands-on workshop on **"Zero Cost Games"** led by **Prasad Bokil,** Associate Professor at the Industrial Design Centre, Indian Institute of Technology Bombay. The session demonstrated how thoughtfully designed games can become powerful learning tools, reducing fear associated with academic subjects and fostering curiosity, self-directed learning, and collaborative exploration. Participants engaged in simple yet effective activities that illustrated how meaningful learning experiences can be created without expensive infrastructure or specialized materials.

Beyond individual sessions, EduConclave 3.0 reflected the growing scale and engagement of the platform. The event featured **50 student presenters,** welcomed **over 150 participants including teachers, educators, and trainers,** and engaged **more than 700 visitors through TechVision.** These interactions created opportunities for dialogue across classrooms, communities, research institutions, and organisations working in STEM education.

As EduConclave enters its third year, it continues to strengthen its role as a convening platform that connects diverse stakeholders committed to improving science education. The conversations and collaborations emerging from this edition reaffirm that building future-ready classrooms requires more than technology - it requires curiosity, inquiry, and sustained partnerships across sectors to make STEM learning meaningful and accessible.

In Conversation

Dr. Umesh Shaligram

Executive Director,
Serum Institute of India Pvt. Ltd. (SIIPL), Pune

Q: Tell us about SIIPL's inception?

A: Founded in 1966 by Dr. Cyrus Poonawalla, SIIPL was created to manufacture life-saving biologicals at affordable prices for population-wide use where it's needed most. Today we produce 1.7+ billion WHO-prequalified doses yearly, protecting 65% of the world's children across 180+ countries with vaccines against polio, DPT, Hib, BCG, hepatitis B, MMR, pneumococcus, and more. Our Pune campus has become synonymous with vaccine equity globally.

Q: What are SIIPL's primary focus areas?

Our core is high-volume, low-cost vaccines for childhood diseases and pandemics. We innovate with single-use bioreactors (2000L to 6000L scale) for speed, NGS-based quality control, and closed-loop operations—producing 300 million doses monthly at peak. Future work spans biosimilars, biobetters, and next-gen biologics and disease elimination strategy.

Q: Let's talk more about COVID-19 vaccines and challenges overcome.

Covishield (Oxford/AstraZeneca ChAdOx1) delivered 1.749 billion doses in India alone, powering the world's second-largest vaccination drive. We manufactured "at-risk" during Phase 3 trials, stockpiling before licensure. When Delta hit, vaccinated frontline workers kept hospitals running; Omicron saw negligible severe cases among the 1.75B vaccinated. Covishield saved ~4M lives globally.

In this issue of PEAKS, we feature In Conversation with Dr. Umesh Shaligram, Executive Director and key architect of SIIPL's R&D. Co-author of Make in India Vaccines: A True Story of Atmanirbhar Bharat in At War with the Single Strand, he led development of billions of Covishield® and Covovax®/Nuvaxovid doses during COVID-19

Covishield Serum Institute of India manufactured vaccine in India and distributed to 98 countries across the globe

Q: Partnerships with Oxford/AstraZeneca and Novavax focused on LMICs—what criteria guide you?

A: Existing ties drove speed: Oxford (R21 malaria precursor), AstraZeneca (LMIC rights for Covishield), Novavax (Covovax protein tech—SII was the sole successful CMO). We met DBT/RCGM on March 19, 2020 for fast approvals. Criteria: proven platforms, rapid tech transfer, scale-up feasibility, and LMIC affordability over profits.

Q: How did you achieve tech transfer with no physical meetings?

A: Traditional transfers need hands-on training and POC validation, but pandemic restrictions forced entirely online meetings. Without physical access, SIIPL started manufacturing using only tech documents and virtual discussions. Frequent process changes during development were overcome by internal expertise bridging knowledge gaps—optimizing the complete process with limited resources.

Q: How did you overcome manufacturing hurdles during lockdown?

A: Lockdowns crippled access; we hired 2,000 staff amid fear. Raw materials were rationed globally—we qualified multiple vendors, flew private jets for bioreactor bags from Ireland. No Ad-vector experience, yet online tech transfer (no hands-on training) plus internal expertise scaled production. Single-use tech cut cleaning time from months to hours.

Q: What was Vaccine Maitri's global impact?

A: 11.2M Covishield doses reached 96 countries via Vaccine Maitri. First developing-country vaccine supplied to UK/EU/USA. Of AstraZeneca's 3.2B total doses across 30+ CMOs, SIIPL produced 2B—80%+ of India's program. Even post-demand drop, absorbed $276M losses rather than abandon LMIC commitments.

Covishield vaccine manufacturing facility using six single-use 4KL bioreactors at Manjari facility.

Q: How did government support make this possible?

A: The government stood with us every step: DCGI gave fast approvals without cutting corners on quality, ICMR backed our trials, DBT fast-tracked permissions that very week we met them, and Foreign Ministry flew in experts when flights were grounded. They converted our huge commercial gamble into India's vaccine shield.

Q: How will your new facility prepare the world for future pandemics?

A: New 280,000 sq.ft. facility produces 5-7B doses/year across mRNA, live-attenuated, subunit vaccines via mammalian/bacterial/yeast lines. BSL-3 suites, 1500 vials/min fill-finish ensure rapid response. Ramps from routine production to pandemic scale—guaranteeing no nation waits again.

At the time of the first shipment of Covishield vaccine on January 12, 2021

Sneak Peak

Bridging Borders for Women in STEM

Marking the *International Day of Women and Girls in Science,* Pune Knowledge Cluster (PKC), in collaboration with the Ministry for Foreign Affairs of Finland and the Delegation of the European Union to India, convened an international webinar titled *"Women and Girls in Science."* The session served as a platform to foster dialogue, exchange perspectives, and strengthen cross-border collaboration in advancing women's participation in STEM.

The webinar brought together 61 participants, including young students from Maharashtra and Finland, creating a dynamic and inclusive space for interaction. At its core, the session focused on enabling early exposure to global opportunities and equipping participants with the awareness needed to navigate evolving scientific and professional landscapes.

Discussions spanned a range of critical themes from identifying industry-relevant skills and understanding emerging research pathways to exploring higher education and career opportunities across the European Union and Finland. Speakers also reflected on their own journeys, offering insights into interdisciplinary learning, international mobility, and the importance of building networks across geographies.

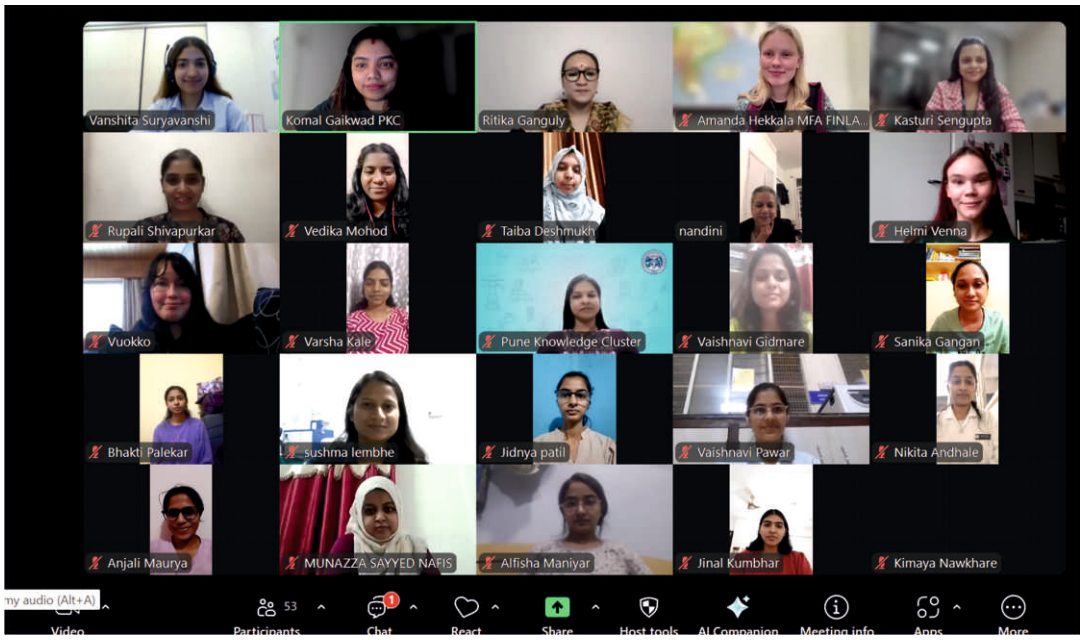
A distinguished panel of speakers from policy, academia, and industry contributed to the dialogue, each bringing a unique perspective on the challenges and opportunities for women in STEM. The speakers included Amanda Hekkala, Junior Advisor, Science and Education Policy, Ministry for Foreign Affairs of Finland; Vanshita Suryavanshi, Junior Advisor, Research and Innovation Team, Delegation of the European Union to India; Kasturi Sengupta, Head – Building Optimization & Insights, Service Product Management India, KONE; Nea Kollanus and Ansa Ida Rinne, KeTeK, LUT University, Finland; Vuokko Toivanen and Helmi Venna, International Affairs Committee, YFK as well as Nandini Kumar, Principal Consultant, Confederation of Indian Industry (CII). Their insights highlighted the importance of inclusive ecosystems, mentorship, and sustained institutional support in enabling women to thrive in science and technology domains.

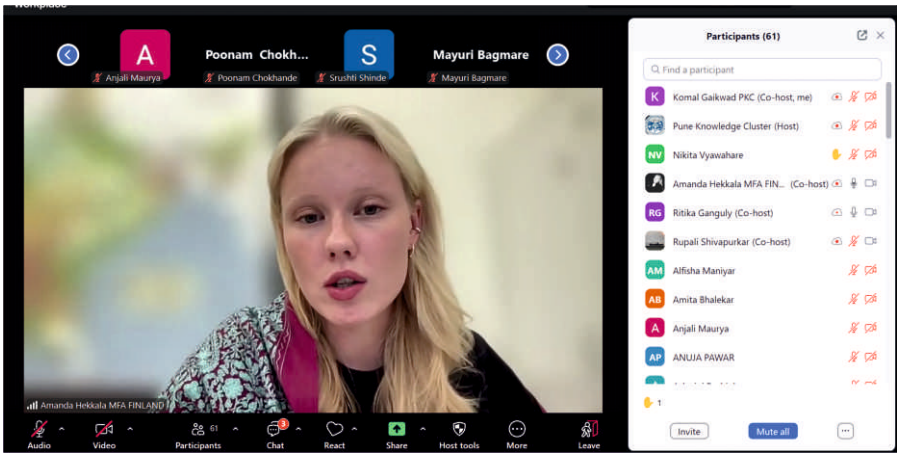
Beyond knowledge exchange, the session underscored the value of international collaboration in shaping future-ready talent. By connecting students with global stakeholders and exposing them to diverse

academic and professional ecosystems, the initiative aimed to inspire informed decision-making and broaden career aspirations.

This engagement reflects PKC's ongoing commitment to building meaningful global partnerships and creating platforms that bridge geographies, disciplines, and opportunities. It also reinforces the importance of sustained dialogue and collaboration in advancing equity and inclusion within STEM fields.

A special note of appreciation to Ms. Amanda Hekkala for initiating this engagement and Dr. Liisa Toivonen for supporting and strengthening the vision behind this collaboration.





National and International Events

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

Events organised by PKC

1. Capacity Building for STP for support staff | 9–10 February 2026

Pune Knowledge Cluster, in collaboration with HNB Training and Ecosan Services Foundation, successfully conducted a comprehensive Operational and Maintenance (O&M) training programme across four Sewage Treatment Plants (STPs) in Noida.

The initiative was designed for plant support staff and ITI trainees, with a focused objective: to strengthen technical competencies, deepen process-level understanding of sewage treatment systems, and reinforce best practices in plant operations and maintenance.

2. SAFAL Workshop | 8 workshops | 10-18 February & 24-25 March 2026

Pune Knowledge Cluster successfully implemented SAFAL, a city-wide training and welfare initiative, empowering 700+ sanitation workers across multiple Pune Municipal Corporation (PMC) locations.

Through expert-led, practical sessions, workers were trained in waste segregation, plastic handling, hygiene practices, and safe use of PPE-strengthening both efficiency and on-ground safety.

Going beyond skill-building, SAFAL also addressed critical social security gaps. In collaboration with a UNDP-supported initiative, workers were enrolled in schemes like E-Shram, Ayushman Bharat, and PMSBY, ensuring access to essential health and financial protection for them and their families.

3. WEnyan CV and LinkedIn workshop | 24 & 27 February 2026

PKC conducted a focused CV and LinkedIn workshop for WEnyan awardees, aimed at strengthening their professional presence and visibility. The session covered strategic CV building, effective storytelling, and optimising LinkedIn profiles to unlock opportunities and meaningful connections.

4. SAKSHAM | 6 workshops | 25-26 February & 5, 6 & 20 March 2026

Pune Knowledge Cluster successfully concluded SAKSHAM, training 1,200+ Multi-Purpose Health Workers (MPWs) across Ratnagiri, Sangli, and Palghar to strengthen response to vector-borne diseases like Dengue, Malaria, and Chikungunya.

Blending expert-led sessions with field-focused learning, the initiative equipped workers with practical skills in surveillance, vector behavior, climate-linked risks, and data-driven outbreak response, enabling faster, more effective action on the ground.

5. ChemAmaze | 26-27 February & 20 March 2026

ChemAmaze workshops were conducted for 290 students from Grades 6 to 9 across Ratnagiri, Chiplun, and Sativali, creating an interactive and collaborative environment for learning chemistry. Through hands-on, offline games, students explored key concepts in an engaging, discussion-driven format, with peer learning and feedback playing a central role in refining the experience.

ChemAmaze is an open-source platform offering curriculum-aligned chemistry games that support teachers with ready-to-use resources, including card and board games, printables, and digital tools, available in English and Hindi, aimed at making chemistry learning more accessible and engaging.

6. STEMPreneurs: The Innovation Dialogue - NSD 2026 | 26 February 2026

Pune Knowledge Cluster conducted STEMPreneurs: The Innovation Dialogue, featuring Dr. Manjusha Shelke, Chief Scientist at CSIR–National Chemical Laboratory (NCL), Pune, and Dr. Nimisha Parekh, Senior Production Manager at Serigen Mediproducts Pvt. Ltd., highlighting the journey of translating scientific knowledge into entrepreneurial ventures and societal impact. The discussion encouraged participants to think beyond the laboratory and explore pathways for taking innovation into real-world applications.

7. WEnyan Field Visit & Mentorship Session | 24 to 27 February 2026

Pune Knowledge Cluster hosted a four-day immersive programme for the WEnyan Awardees from 24 to 27 February, designed to strengthen their professional journeys in STEM and innovation. WEnyan awardees participated in an immersive visit to the Pimpri Chinchwad Science Park and Planetarium, where they experienced how science communication and public engagement initiatives make scientific concepts accessible to wider communities.

This was followed by an industry visit to Innovassynth Technologies at the International Biotech Park, Pune, offering insights into the biotechnology ecosystem, industry academia linkages, and the translation of scientific research into industrial innovation.

Citizen-Centric Talks

PKC's citizen-centric talks are aimed at making science accessible to citizens and increasing scientific curiosity. They are held in a hybrid mode to ensure maximum participation. Recordings of the previous talks are available on our Youtube Channel.

Speaker: Anita Nagarajan, (Independent) Communications and Editing Consultant, Educator; Chair of EASE India

Date: 26 February, 2026

Topic: Navigating the scenic, adventurous route: Journal entries from a (non-linear) journey through work and life

Anita Nagarajan brings 20+ years of expertise across technology, education, and STEM communication. A COEP engineer and NC State (USA) alum, she has worked with Intel and IBM and collaborated with UNESCO, IIMs, IITs, IISERs, and UN agencies. Chair of EASE India, she bridges industry, academia, and global institutions. Discover powerful lessons from her non-linear journey and the insights that shaped her path.

MoUs and Partnerships

In the last quarter, PKC has signed an MoU with YASHADA, Ecovrat envirosolutions Pvt. Ltd.

Innovations in Action

This section showcases impactful innovations that leverage science & technology for the betterment of society.

Salcit Technologies: Salcit is addressing one of the most underdiagnosed global health challenges respiratory illnesses by transforming how lung health is assessed and monitored. Founded in 2017, the company leverages acoustic AI to decode cough sounds into clinically meaningful insights, enabling early detection of conditions such as tuberculosis and COPD, particularly in low-resource and underserved settings.

At the core of its innovation is Swaasa®, an AI-powered respiratory health platform that enables non-invasive, remote screening and monitoring. Built on large, diverse datasets and validated through multiple clinical trials in collaboration with institutions such as AIIMS Delhi, CMC Vellore, and ICMR, Swaasa combines scientific rigor with scalability. The platform meets global standards, including HIPAA, ISO 27001, SOC2, and ISO 13485, and has processed over 400,000 assessments across clinical and community environments.

By prioritizing clinical validation, regulatory compliance, and ease of deployment, Salcit has built trust in AI-driven diagnostics within complex healthcare systems. Its

partnership-led approach working with hospitals, public health programmes, insurers, and pharmaceutical companies ensures that the technology is embedded into real-world healthcare delivery rather than existing as isolated innovation.

From community screenings through mobile medical units to training frontline health workers, Salcit is enabling accessible, data-driven respiratory care at scale. By turning sound into actionable health intelligence, the company is advancing a more inclusive, proactive, and preventive healthcare ecosystem.

Solinas Integrity: Solinas is transforming how underground water and sanitation infrastructure is managed by making the invisible visible. Founded in 2018, the company leverages robotics, AI, and data-driven platforms to enable safer, smarter, and more proactive management of pipelines, septic systems, and sanitation networks.

At the core of its innovation is an integrated technology stack that combines inspection, cleaning, and digitization. Its robotic inspection systems, Endobot, enable real-time, high-precision monitoring of underground pipelines, helping detect leaks and structural issues before they escalate. HomoSEP, India's first robotic system for septic tank and manhole cleaning, eliminates the need for hazardous manual intervention, significantly improving worker safety. Complementing this is Swasth AI, a proprietary platform that converts field data into actionable insights for predictive maintenance and infrastructure planning.

By owning the full workflow from field deployment to analytics, Solinas enables cities and industries to transition from reactive fixes to preventive, data-driven decision-making. Its solutions have been deployed across 30+ cities in India and have expanded globally, including collaborations with Dubai Municipality.

Through a partnership-led model working with urban local bodies, utilities, and industrial operators, Solinas is not just introducing technology but reshaping how water and sanitation systems are understood and managed, making them visible, measurable, and future-ready.

Women of PKC

Dr. Priya Nagaraj
Interim- CEO

Dr. Ritika Ganguly
Project Manager - Capacity Building & STEM Education

Dr. Rupali Shivapurkar
Project Manager - Health

Ms. Gayatri Kshirsagar
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