

## Minutes of Meeting: 1<sup>st</sup> Research Advisory Council Meeting

The 1<sup>st</sup> Meeting of the Research Advisory Council was held in online mode on September 04, 2025, at 17:30 hrs IST. The following members were present:

S.N.	Name of Members	Designation	Membership
1	Rudra Pratap	Vice-Chancellor	Chairperson
2	Srikant Srinivasan	Professor & Dean of Academics	Member
3	Malini Balakrishnan	Professor & Director, Centre for Water Security (CWS)	Member
4	Chaitanya Lekshmi Indira	Associate Professor & Director, Centre for Equitable and Personalized Healthcare (CEPH)	Member
5	Vishal Garg	Professor & Director, Indorama Ventures Center for Clean Energy, Plaksha University	Member
6	Shashank Tamaskar	Associate Professor & Director, Centre for Sustainable and Precision Agriculture (CSPA)	Member
7	Ravi Jasuja	Director, Translational Research & Discovery, BWH, Harvard Medical School	Member
8	Anthony Watanabe	Chief Sustainability Officer, Indorama Ventures PCL	Member
9	Vijay Chandru	Professor & Co-founder and chairmen Strand Life science	Member
10	Chiranjib Bhattacharyya	Professor, Indian Institute of Science, Bangalore	Member
11	Venkat Padmanabhan	Managing Director, Microsoft Research India	Member
12	Sunita Chauhan	Professor & Dean of Research, Plaksha University	Member Secretary

### **Opening Remarks of the Chairperson:**

Vice Chancellor **Professor Rudra Pratap** welcomed all members of the Research Advisory Council to the inaugural meeting of the Research Advisory Council at Plaksha University. The meeting focused on establishing a framework to guide the university's research agenda.

Professor Rudra Pratap opened the session with introductions from faculty members, including Prof. Sunita Chauhan, Prof. Malini Balakrishnan, Dr. Chaitanya Lekshmi Indira, Prof. Vishal Garg, Dr. Shashank Tamaskar, and Prof. Srikant Srinivasan, who shared their roles and research interests.

The discussions emphasized the university's commitment to tackling critical interdisciplinary challenges in areas such as **energy, water security, health, and agriculture**, with a strong focus on **translational research** to ensure that academic insights meaningfully address societal issues.

Prof. Rudra Pratap presented the vision for Plaksha University's research agenda, highlighting the importance of tackling interdisciplinary problems that can lead to societal impact. The university aims to create research centers independent of teaching programs, concentrating on critical issues like energy,

water security, health, and agriculture. Additionally, there will be a strong emphasis on translational research to convert basic research into practical applications and products.

**Thereafter, the Chairperson requested the member secretary to proceed with the agenda.**

The meeting commenced after confirmation that the quorum was complete. The agenda items were taken up for consideration and approval by the Research Advisory Council.

## Agenda 1: Overview of Research Landscape and Facilities at Plaksha University

**Prof. Sunita Chauhan, Dean of Research** detailed initiatives of research centers at Plaksha with a focus on sustainable development: the Indorama Ventures Centre for Clean Energy on urban energy optimization, the Centre for Equitable and Personalized Healthcare on accessibility and affordability, the Centre for Sustainable and Precision Agriculture on advanced crop management technologies, and the Centre for Water Security on treatment and monitoring. She highlighted Plaksha's interdisciplinary, teaching and transdisciplinary research, engaging undergraduates from the start and aligning with SDGs of India-centric relevance. She also emphasized balancing basic and translational research within an enabling ecosystem that fosters start-ups, industry collaborations, and technology transfer, aiming to deliver India-centric solutions with global relevance.

Prof. Sunita presented an overview of the laboratories and facilities supporting the research Centres at Plaksha. The following were highlighted:

- **Clean Energy Lab:** This lab includes the smart buildings lab with a simulation studio for energy and daylight studies, facilities for testing cool roof materials, and systems for monitoring and optimising energy usage in buildings.
- **Dixon IoT Lab:** This lab is working on edge devices, networking, and advanced monitoring systems (such as multiple camera systems). This lab is equipped with testing and analysing instruments, along with manufacturing facilities including 3D printers and spectroscopy tools.
- **Water Facilities:** This lab consists of analytical equipment, and test units for FO (forward and reverse osmosis), supporting sustainable water monitoring and treatment initiatives.
- **MolBio In-Vitro Diagnostics Lab:** This lab consists of clean room for cell culture and molecular biology facility for cellular-level interventions and diagnostics.
- **Advanced analytical characterization facility:** This lab housed high end equipment for analysis and characterization and omics/multi-omics platforms for advanced health diagnostics.
- **Robotics Lab:** This lab addresses surface, underwater, and aerial robotics. Expertise includes aerial vehicles, farm/indoor rovers, humanoids, and underwater robotics systems.
- **Digital Twin Technology Lab:** It was highlighted that high-speed, large-memory, high-spec systems are available and are being used across multiple centres for advanced research requirements.

## Agenda 2: Research Initiatives at Plaksha University

**Prof. Sunita Chauhan** detailed funding strategies, highlighting extramural and intramural grants, including support for startups and seed funding for labs. She updated members that funding is mobilized through government and industry-sponsored extramural grants, CSR support, and consultancy-based intramural projects. She added that almost all faculty receive start-up grants on joining, with additional seed support



for labs and centres, and highlighted active participation in proposals to external foundations such as the Bill & Melinda Gates Foundation and Wadhvani Innovation Network.

#### Research Funding and Outcomes

She also highlighted the proposal success ratio, i.e., 20.5%, and noted that more than 45 proposals are being submitted/ awaiting results. Additionally, she reported research outcomes, including 90 publications and various conference participations over the past three to four years.

#### Key Outcomes:

- 90+ publications, 15 book chapters, and 32 conference proceedings within 3 years.
- 45 proposals submitted (~₹102 Cr), with ₹21 Cr already approved (20.5% success rate).
- Research funding commitment: ₹62 Cr (₹29.45 Cr received).

#### Doctoral Research

Prof. Sunita Chauhan mentioned that the university has students across four specialized majors, with representation from Humanities (3) and other areas. Research students include Biosciences (12), Robotics and Autonomous Systems (5), Data Science (2), Computer Science (4), and Mathematics (2), forming a diverse cohort that drives interdisciplinary and transdisciplinary outputs. She also noted that most students are provided fieldwork opportunities in India and supported for international exposure, citing placements at Erasmus University, Purdue University, Goethe Institute Frankfurt, and Duisburg in Germany.

#### UG Research

Prof. Sunita Chauhan presented the Innovation Lab and Grand Challenges (ILGC) project as a unique signature initiative of Plaksha, with two levels—ILGC 123 (first three semesters) and ILGC 456 (later semesters). In the initial semesters, all students work on conceptual frameworks aligned with sustainable goals, followed by specialized projects. She highlighted achievements such as participation in international hackathons and conferences (Intellisys, MICAI), student ventures including two spin-offs and ThinkLude generating revenue, and noted that about 85 undergraduates undertook research internships in 2024.

#### Collaborations:

**Prof. Sunita Chauhan** highlighted Plaksha's strong collaborations, including national partnerships with IIT Madras, IIT Bombay, IIIT Hyderabad, and government institutions, as well as international MoUs with Brigham and Women's Hospital, Cornell, Purdue, UPenn, UC Berkeley, and UCBM. She then requested **Dr. Roshan** (Deputy Registrar – Research) to present the vision, mission, and functions of the Office of Research, which provides structured support to enable faculty to focus on advancing research.

#### Key Functions:

- Funding – Scoping, proposal development, submission, activation, award management, financial management till closure of the project.
- Research Infrastructure, lab operations, Certification.
- Procurement and infrastructure support.
- IP management and legal agreements with collaborators.
- Ethics and biosafety compliance committees.
- Science communication and visibility for research outputs.

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## Agenda 3: Overview of Research Centers at Plaksha University

Prof. Sunita Chauhan presented the overview of the Research Centers of the Plaksha University as follows:

### 1. Indorama Ventures Centre for Clean Energy by **Prof. Vishal Garg**

- Focus: Supporting India's transition to a net-zero carbon, self-reliant and energy-secure future.
- Key Areas: Urban microclimate modelling, decarbonizing night-time residential cooling, smart buildings and homes, smart microgrids.
- Infrastructure: Open testbeds for researchers, startups, and policymakers.

### 2. Centre for Water Security by **Prof. Malini Balakrishnan**

- Focus: Ensuring sustainable access to clean water with emphasis on urban ecosystems.
- Key Areas: Autonomous monitoring of water bodies, advanced sensor deployment, and resource-efficient treatment technologies.
- Ongoing Project: Rejuvenation of the Chandigarh–Ghaggar urban stream, integrating health impact studies.

### 3. Centre for Sustainable & Precision Agriculture by **Prof. Shashank Tamaskar**

- Focus: Affordable precision agriculture technologies and data-driven farming practices to improve farm yield and sustainability.
- Key Areas: Drone-based yield estimation, IoT-enabled soil and crop monitoring, biotechnology-based interventions.
- Achievements: Collaboration with sugar mills in UP, soil carbon sequestration projects, startup spin-off 'Agmitra', collaborations with Purdue and Italian institutes.

### 4. Centre for Equitable & Personalized Healthcare by **Prof. Chaitanya Lekshmi Indira**

- Focus: Development of diagnostic and therapeutic technologies for non-communicable diseases.
- Key Areas: Lab-on-chip devices, biosensors, wound-healing biomaterials, digital pathology with omics integration.
- Collaborations: MolBio Diagnostics, Bosch, partner hospitals, and biotech industries.

### 5. Dixon IoT Lab by **Prof. Srikant Srinivasan**

- Focus: IoT innovation for cross-domain applications (energy, water, agriculture, health).
- Key Areas: Edge computing, AQI monitoring, traffic management, high-frequency real-time data analysis.
- Support: CSR-funded by Dixon Technologies; active undergraduate student participation.

## Discussions

### **Prof. Ravi Jasuja**

- Proposed structured faculty knowledge-sharing forums.
- Highlighted need for role-model faculty to demonstrate perseverance and innovation.
- Cautioned against early-stage entrepreneurship bandwagon.

### **Prof. Rudra Pratap**

- Noted existing research review and Centre meetings, and fortnightly informal sessions.

- Supported joint industry-academic faculty appointments, shared past Google initiative.
- Emphasized balancing fundamental and translational research.
- Highlighted importance of collaborative research culture and Office of Research support.

**Prof. Vijay Chandru**

- Suggested joint industry-academic faculty appointments.
- Shared MIT UROP model for structured undergraduate research.
- Stressed user-inspired basic research.
- Highlighted role of research offices in securing funding.
- Suggested focus areas on agriculture and health linked to Punjab context.
- Recommended exploring Schmidt Futures/Sciences and Rainmatter funding avenues.

**Prof. Sunita Chauhan**

- Proposed engaging Professors of Practice with industry experience.
- Presented ILGC project and student achievements, including spin-offs and research internships.
- Highlighted interdisciplinary teaching and transdisciplinary research aligned with SDGs.
- Shared research centre initiatives and India-centric global solutions.
- Updated on student diversity, fieldwork, and international exposure.
- Noted oncological research proposals and collaborations with Tata Memorial.

**Prof. Venkat Padmanabhan**

- Advised cautious industry engagement to avoid over-dependence.
- Emphasized use-inspired basic research and collaborative team culture.
- Raised questions on rationale for focus areas.
- Cited UC Berkeley Spark model to illustrate impactful academic contributions.

**Prof. Chiranjib Bhattacharyya**

- Recommended defining clear metrics for research success (TRL levels).
- Encouraged deep-tech entrepreneurship over shallow start-ups.
- Suggested leveraging Plaksha founder/CEO network for 21st-century challenges.
- Highlighted importance of data and computing in research.

**Dr. Chaitanya**


- Explained MolBio Lab's early-stage focus on microfluidics and platform optimization.
- Confirmed future integration of optical/electrochemical layers and advanced detection.

**Dr. Anthony Watanabe**

- Proposed future RAC meetings focus on collaboration and thematic dialogues.
- Suggested including circular economic research as a theme.

**Closing Remarks**

Prof. Rudra Pratap thanked RAC members for their valuable input. He acknowledged the importance of balancing fundamental and translational research, while strengthening industry, government, and international collaborations. Consensus was reached to conduct the next RAC meeting with extended time for thematic deep-dives and collaborative discussions.



**Actionable Items**

- **Launch Targeted Cancer Research Programs**  
Develop focused research initiatives on liquid cancers prevalent in Punjab, integrating molecular biology, immunotherapy, and environmental studies.
- **Introduce Thematic RAC Meetings**  
Plan future RAC meetings around specific themes (e.g., circular economy, deep tech, cancer research) to foster focused collaboration along with impact metrics.

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**Prof. Sunita Chauhan**  
**Member Secretary, Research Advisory Council**  
**& Dean of Research, Plaksha University**