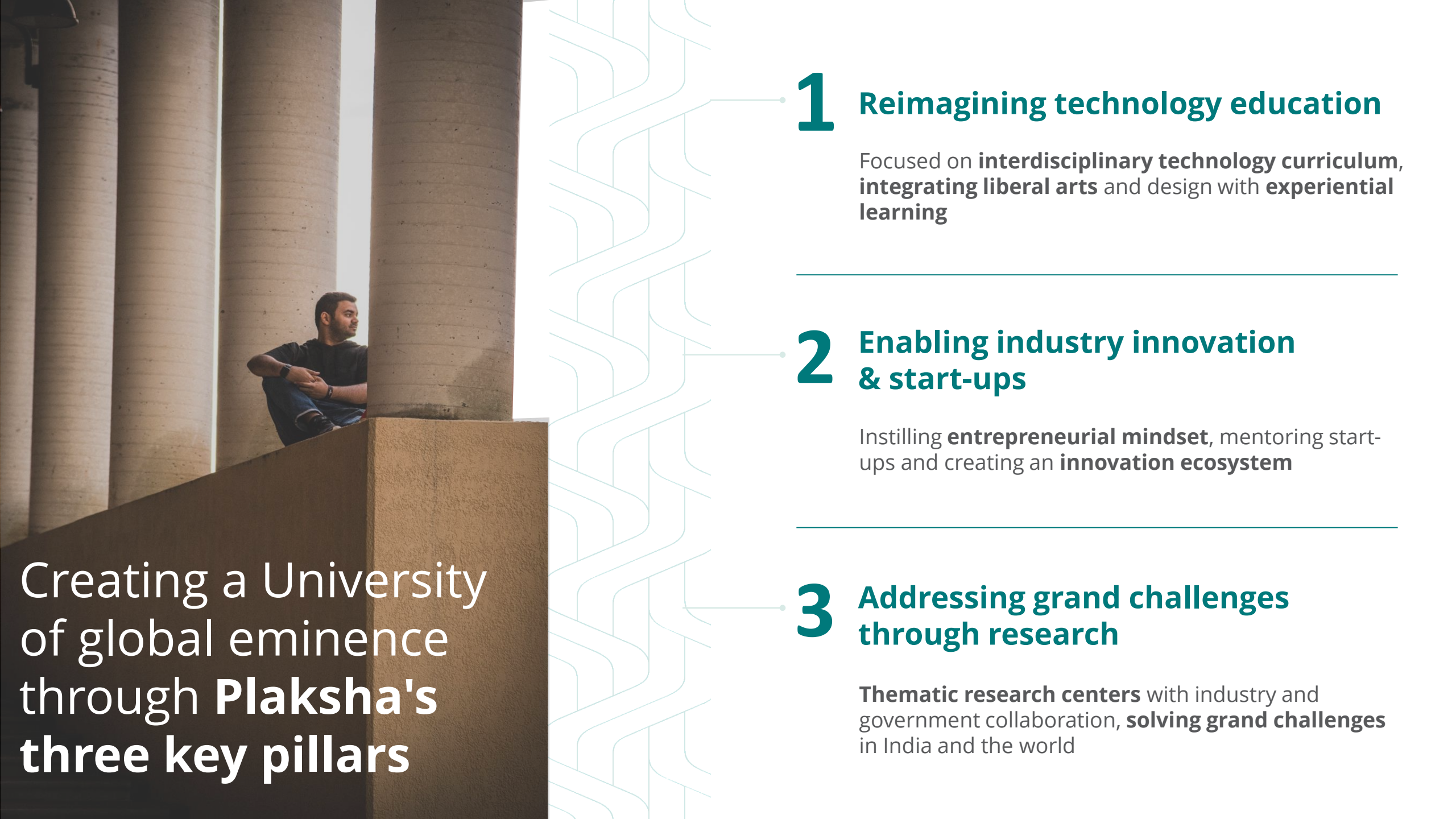# Plaksha University

PhD Program

Creating a University of global eminence through **Plaksha's three key pillars**

1 **Reimagining technology education**

Focused on **interdisciplinary technology curriculum**, **integrating liberal arts** and design with **experiential learning**

2 **Enabling industry innovation & start-ups**

Instilling **entrepreneurial mindset**, mentoring start-ups and creating an **innovation ecosystem**

3 **Addressing grand challenges through research**

Thematic research centers with industry and government collaboration, **solving grand challenges** in India and the world

Plaksha is founded and **envisioned by a community of business leaders, entrepreneurs** via collective philanthropy

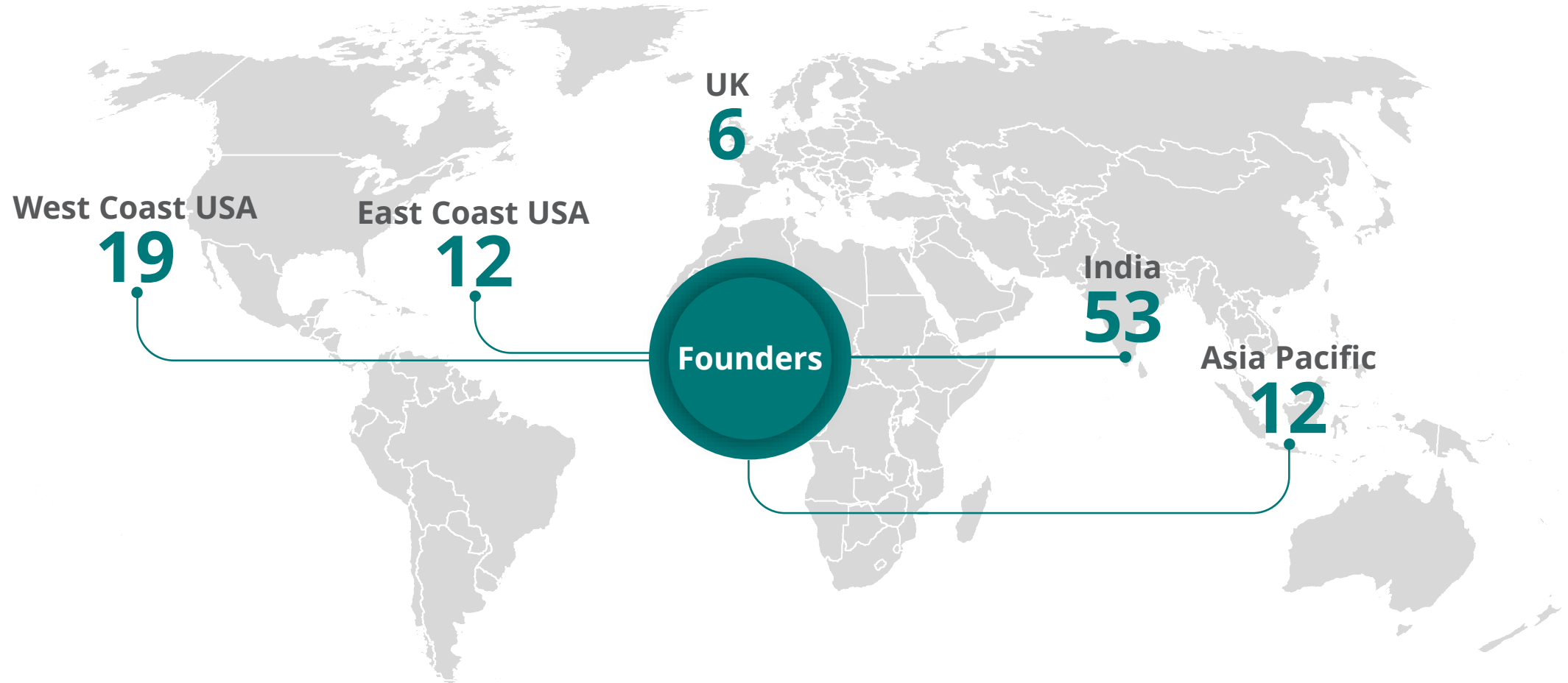*Click to hear few Founders describe the vision*

Plaksha Offers

Keen to build a **research career** at the **cutting edge of technology** and associated interdisciplinary areas?

✓ **Mentorship** by reputed faculty

✓ Opportunity to conduct **interdisciplinary research in emerging Grand Challenges** and SDGs

✓ Opportunity to work with peers in **global partner institutions** through **research internship**

✓ Environment to grow **entrepreneurial skills** and vision through mentorship from successful entrepreneurs

✓ **Competitive stipend** and annual grants to attend national and international conferences

✓ Unique opportunity to **create labs and research centers from ground-up**

Support of 100+ corporates, academicians and philanthropists

UK
6

West Coast USA
19

East Coast USA
12

Founders

India
53

Asia Pacific
12

CXOs and leading entrepreneurs - Invested in the **success of students** and their growth. Founders are a part of the functional committees e.g. admissions, infrastructure, marketing.

Distinguished Global Academic Advisory Board

Dr. Abhijit Banerjee
Co-Founder, J-PAL; Professor of Economics, **MIT; Nobel Laureate**

Dr. Bijendra Nath Jain
Former Vice Chancellor, **BITS Pilani**; Former Deputy Dean, **IIT Delhi**

Dr. Julia Ross
Dean of Engineering, **Virginia Tech**

Dr. Sharad Malik
Chair, Electrical Engineering, **Princeton University**

Dr. Anant Agarwal
CEO, edX; Professor of EECS, **MIT**

Dr. Frances Ligler
Professor, **NC State and UNC Chapel Hill**

Dr. Kaushik Basu
Former Chief Economist of World Bank; Professor of Economics & International Studies, **Cornell University**

Dr. Sriram Rajamani
Managing Director, **Microsoft Research Labs, India**

Dr. Arvind Raman
Senior Associate Dean for Faculty; **Purdue University**

Dr. James Holloway
Provost and EVP for Academic Affairs, **University of New Mexico**

Dr. Pankaj Jalote
Founding Director, **IIIT Delhi**

Dr. Venky Narayanamurti
Benjamin Peirce Professor, **Harvard University**

Dr. Ashish Nanda
Former Director of IIM Ahmedabad; Senior Lecturer, **Harvard Business School**

Dr. Jennifer Cochran
Shriram Chair, Department of Bioengineering, **Stanford University**

Dr. Rajesh Gupta
Qualcomm Endowed Chair, **UC San Diego**

Dr. Vijay Kumar
Nemirovsky Family Dean of Penn Engineering, **University of Pennsylvania**

Dr. Howard Griffiths
Professor of Plant Ecology; Vice-Chancellor's Special Advisor on India

Dr. Krishna Palepu
Senior Advisor to President, Harvard University; former Senior Associate Dean of Harvard Business School

Dr. Yannis C Yortsos
Dean of Viterbi School of Engineering, **University of Southern California**

Dr. Sanjay Sharma
Professor of Mechanical Engineering, MIT; VP of Open Learning, **MIT**

Partnerships with premier global institutions

UC Berkeley

Purdue University

SRI International

Cornell University

UC San diego

IIT Bombay

IIT Kanpur

Indian Institute of Science

PGIMER, Chandigarh

IISER, Mohali

Faculty from Premier Institutions

Eminent academic leadership

Chancellor

Dr. Shankar Sastry
Former Dean of Engineering, Professor of EECS,
UC Berkeley

Vice Chancellor

Dr. Rudra Pratap
Former Deputy Director, IISc Bangalore
Chairman & co-founder, i2n Technologies Pvt Ltd.; Fellow of the
National Academy of Engineering & National Academy of Sciences

Chief Academic Advisor

Dr. B.L Ramakrishna
Inaugural Director, Grand Challenges Scholars Program
Network, **National Academy of Engineering, USA**
Professor, Materials Science and Engineering, **Arizona
State University**

Dean Academics & Research

Dr. Vishal Garg
Founder Head and Professor, Centre for IT in Building Science,
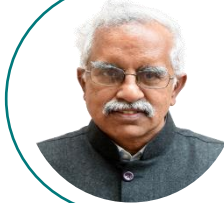**IIIT Hyderabad**

Honorary Distinguished Professor

Dr. Uday Desai
Founding Director, **IIT Hyderabad**
Professor, Electrical Engineering Department, **IIT Bombay**

Distinguished Visiting Professor

Dr. M. Balakrishnan
Dean (Post Graduate Studies & Research), **IIT Delhi** (2006-2009)
Deputy Director (Faculty), **IIT Delhi** (2009-2012)
Deputy Director (Strategy & Planning), **IIT Delhi** (2016-2019)

Full-time faculty

Dr. Srikant Srinivasan
Nanoelectronics, IoT systems
Ph.D. in Electrical & Computer
Engineering, **Purdue University,
USA**

Dr. Sunita Chauhan
Medical & Surgical Robotics,
Automated Systems, Cyber
Physical Systems
Ph.D & DIC **Imperial College, UK**

Dr. Saumya Jetley
Computer Vision & ML Algorithms
Ph.D. in Computer Vision &
ML Algorithms, **Univ. of Oxford**

Dr. Saikat Chakraborty
Bioenergy, Computational
Bioengineering
Ph.D. in Chemical Engineering,
University of Houston, USA

Dr. Amit Sheth
Inclusive Design & Design Thinking
M.Phil. in Industrial Design Inclusive
Design, **IIT Bombay**

Dr. Kriti Khanna
Financial Development,
Macroeconomics
Ph.D. in Economics, **University
of Houston, USA**

Dr. Rucha Joshi
Engineering Education, Tissue
Engineering, Drug Delivery
Ph.D. in Biomedical Engineering,
Purdue University, USA

Dr. Dhiraj Sinha
Social sciences
Ph.D. in Electrical Engineering,
University of Cambridge, UK

Dr. Amrik Sen
Applied Mathematics
Ph.D. in Applied Mathematics,
University of Colorado, USA

Dr. Monika Sharma
Computational biophysics,
bioinformatics
Ph.D. in Computational Natural
Sciences, **IIIT Hyderabad**

Dr. Navjot Kaur
Point-of-care & paper-based
diagnostics, AMR surveillance
networks
PhD in Chemical Engineering,
IISc, Bengaluru

Dr. Manoj Kannan
Discipline-based education
research
Ph.D. in Genetics, **BITS Pilani**

Dr. K Gopinath
Systems Research: OS, security
Ph.D., **Stanford University, USA**

**Dr. Prashanth Suresh
Kumar**
Water Technology
Ph.D. Env. Biotechnology, **Delft
University of Technology,
Netherlands**

Dr. Sebastien Foucaud
Data Science, ML and AI Product
Development
Ph.D., Astronomy & Astrophysics,
Aix-Marseille University

Non-exhaustive list

Visiting faculty

Dr. Jitesh Panchal
Associate Professor of Mechanical Engineering,
Purdue University
Ph.D. & M.S. , **Georgia Tech**

Dr. Rajeev Barua
Professor, Dept. of Electrical and Computer Engineering
University of Maryland
Ph.D. & M.S.,**MIT**

Kenwyn Smith
Professor, Organizational Behaviour,
University of Pennsylvania

Rachel Dzombak
Lecturer, **UC Berkeley** College of Engineering and
Haas School of Business, Research Scientist, **Blum Center**
for Developing Economies
Ph.D. & M.S. , **UC Berkeley**

David Law
Director, Global Academic Programs,
Sutardja Center for Entrepreneurship & Technology, **UC Berkeley**
CEO, Venture Dojo
MBA, **Arizona State University**

Monojit Choudhary
Principal Researcher, **Microsoft Research Lab** India
B.Tech and PhD, **IIT Kharagpur**

Srikanth Velamakanni
Co-founder, Group Chief Executive & Vice-Chairman,
Fractal Analytics

Alexander Fred-Ojala
Technical Program Manager, Blockchain Xcelerator
Sutardja Center for Entrepreneurship & Technology,
UC Berkeley
M.Sc. Mathematical Statistics, **Lund University**

Vibrant student life

- Collaborative workspaces
- Community initiatives
- Student clubs & societies
- Sports, recreation and wellness facilities

Sports, Recreation and Wellness

Sports & Recreation facilities

- Outdoor: Football, Volleyball, Tennis
- Indoor: Badminton, Basketball, Table tennis, Pool/Snooker
- Yoga and Gymnasium

Health & Wellness center

- 24*7 Health Center will be available for all students
- Health insurance for all students
- Tie-ups with nearby hospitals
- Mental health and counselling support for all students

Classrooms and collaboration spaces

Classrooms

- 60-seater for general classes
- 30 and 48 seaters for project work
- 250-seater MPH for guest lectures, seminars
- Auditorium (under construction)

Labs and Collaboration areas

- Teaching & Research labs
- Computer lab and Coding Cafe
- Teaching studio for hybrid learning
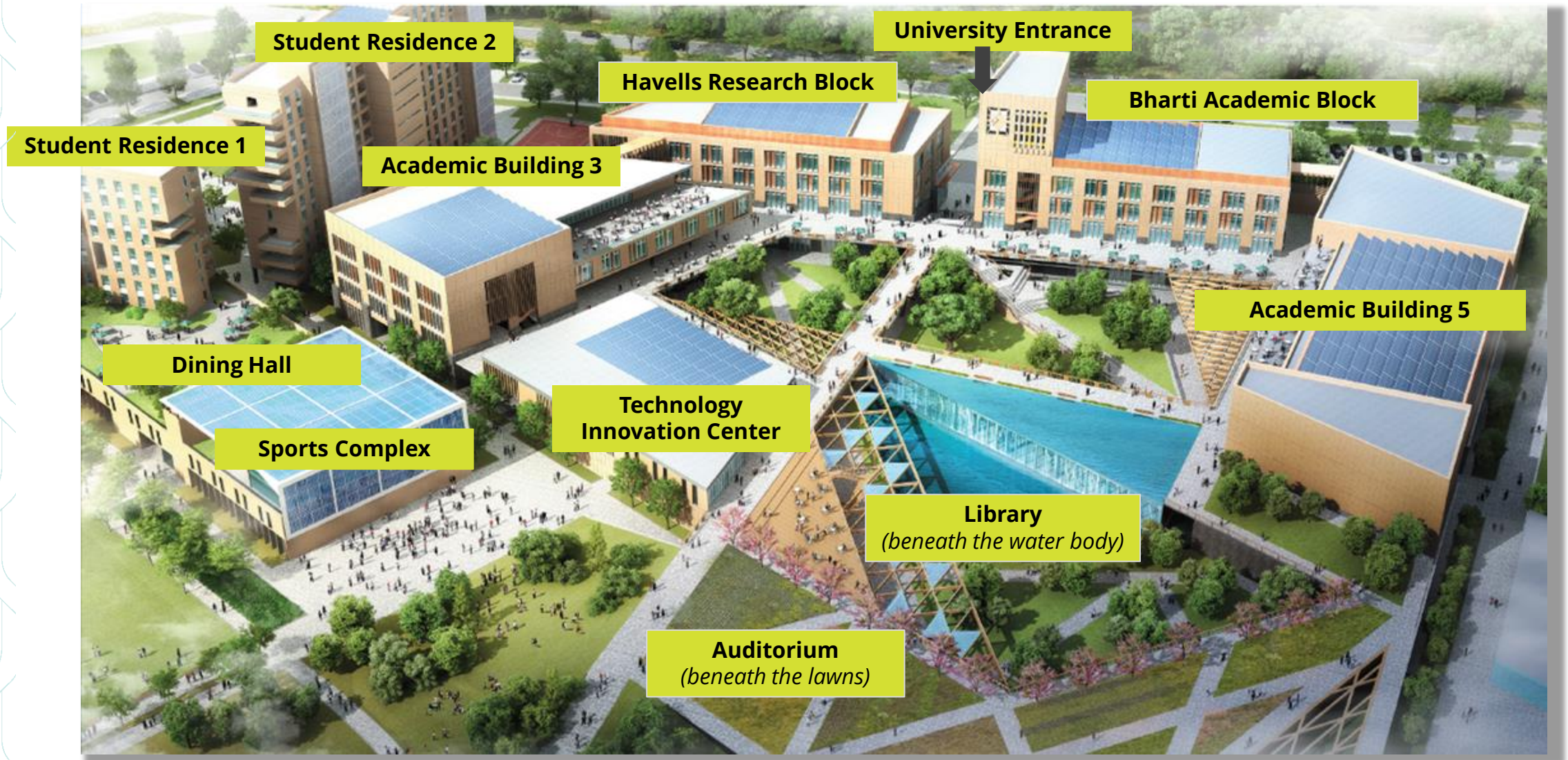
World-class campus

- 50 acre tech-enabled campus
- World class infrastructure
- Energy efficient and sustainable
- Living lab
- Comfortable air-conditioned hostel accommodation
- Coding cafe and maker spaces
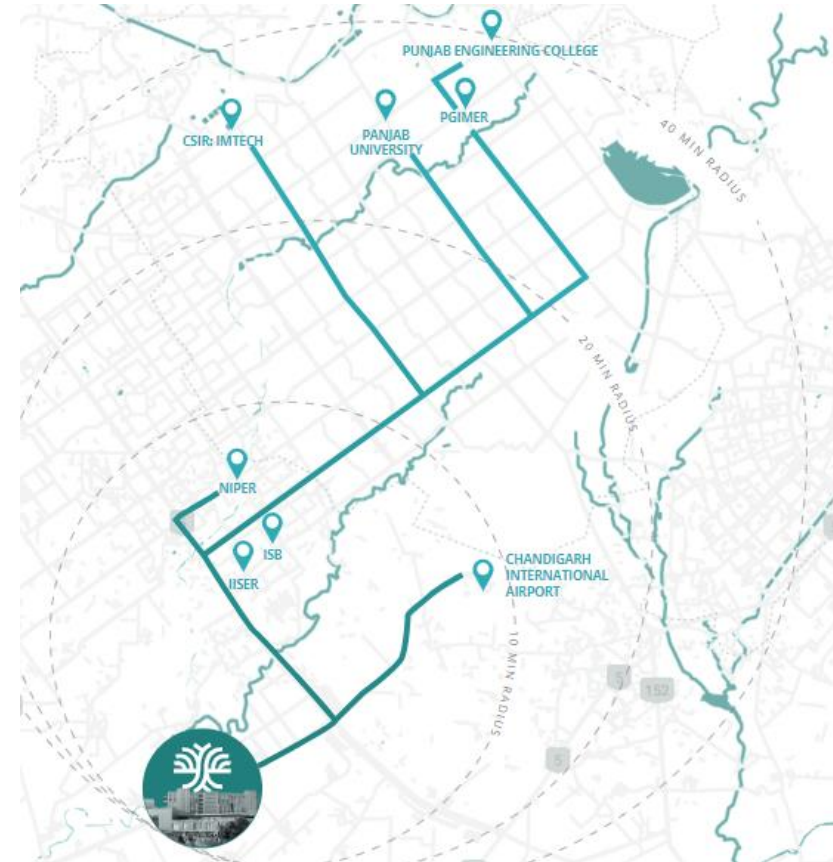
Plaksha Campus – a living lab

Our tech-enabled campus encourages interaction and helps foster creativity

Centrally located & easily accessible

- **10 mins** from **Chandigarh International Airport**
- **15 mins** from several **academic institutions**
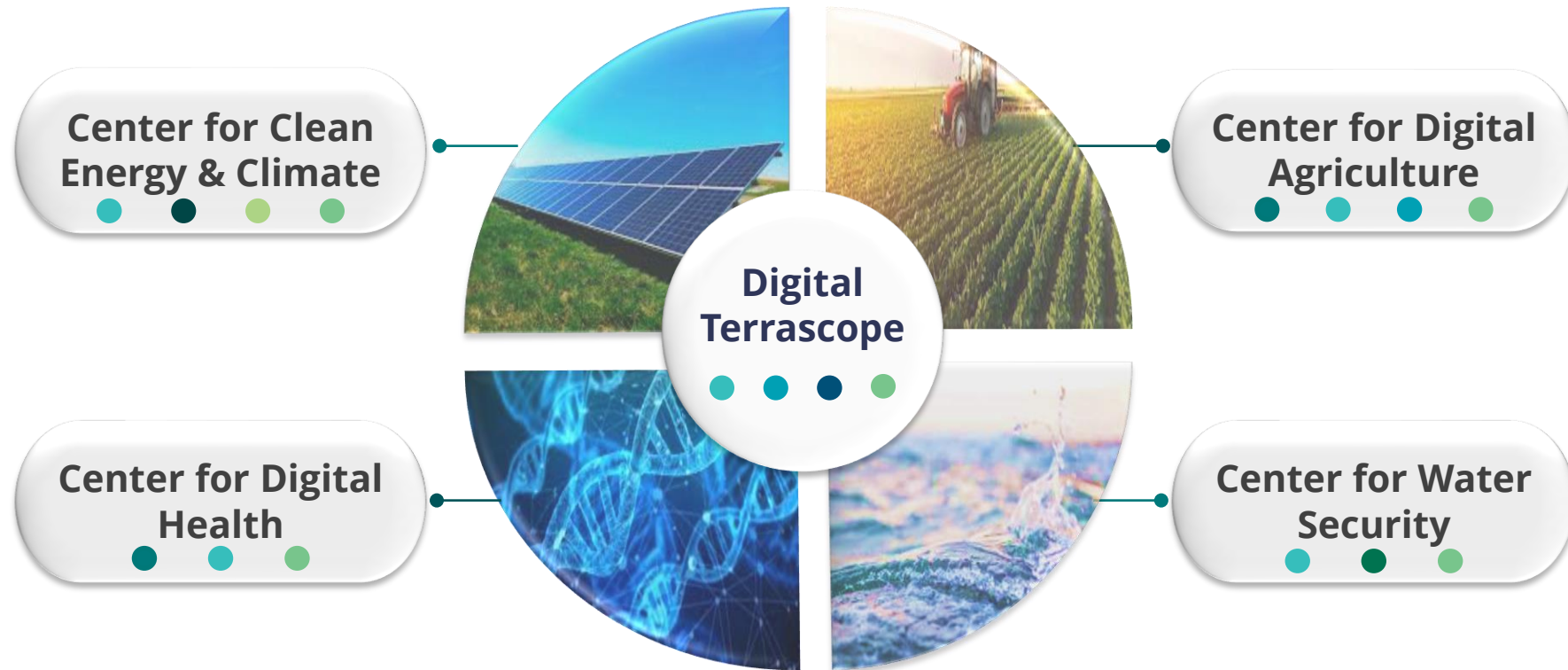- **30 mins** drive from **Chandigarh city centre**

Research Focus Area

Interdisciplinary.

5 Interdisciplinary research centers planned to be established

Center for Clean Energy & Climate

Center for Digital Agriculture

Digital Terrascope

Center for Digital Health

Center for Water Security

Core Labs

| CRISPR-Cas Lab | IoT & Sensors Tech Lab | Robotics & Automated Vehicle Lab | Micro-Climate Lab | Clean Energy Lab | Water Technology Lab | Metaverse Lab |

AI/ML/DS Lab (High Performance Cloud Computing)

Discipline-wise distribution of available PhD positions

Discipline

Research Centers

1. **Biosystems Engineering & Human Health** .... Center for Digital Health & Center for Water Security

2. **Robotics & Deep Learning** .... Digital Terrascope & Center for Digital Health

3. **Computer Science & AI/ ML** .... Digital Terrascope & Center for Digital Health

4. **Environment & Clean Energy** .... Center for Clean Energy and Climate & Center for Water Security

5. **Humanities, Language & Linguistics** .... Center for Thinking, Language & Communication

Research Area

Computational Bioengineering

Projects

Bio-digital Twins, Algal Photobioreactors, Pulmonary Diseases and their therapy, Turing patterns in Biological Systems

Dr Saikat Chakraborty
Faculty Advisor Global Engagements (USA) & Professor

Past Associations
- Associate Professor, Indian Institute of Technology Kharagpur
- Post-doctoral Fellow, University of Texas Medical School, Houston, USA

saikat.chakraborty@plaksha.edu.in

Research Area

Diagnostics and surveillance technologies for antimicrobial resistance (AMR)

Projects

AI-ML-based AMR prediction tool using antimicrobial susceptibility testing data, antimicrobial stewardship solution for poultry farms

Dr Navjot Kaur
Assistant Professor

Past Associations
- Research Scientist, Dr. Reddy's Lab, Hyderabad, India
- Science Conversationalist at The Pseudo Doctor

navjot.kaur@plaksha.edu.in

Biosystems Engineering & Human Health

Research Area

Assistive Medical Technology, Tissue Engineering, Drug Delivery Injury Prevention, Engineering Education

Projects

Development of polymers for drug delivery, Personalized diabetic wound healing care, Sports Injury Prevention Mechanism, Tissue rehabilitation

Dr Rucha Joshi
Assistant Professor

Past Associations
- Assistant Professor of Teaching, Biomedical Engineering, UC Davis
- Post-Doctoral Researcher, Biomedical Engineering, Purdue University

rucha.joshi@plaksha.edu.in

Research Area

Medical Surgical Robotics, Intelligent Diagnostics, Medical wearables

Projects

Integrated intelligent active orthoses (esp. lower limb), Robotic muscles - sensors & actuators (Soft-robotics) for medical applications

Dr Sunita Chauhan

Faculty Advisor Global Engagements (Europe & APAC) & Professor

Past Associations

- Director, Robotics and Mechatronics Engineering, Monash University, Australia
- Assoc. professor (Mechatronics & Design); Asst. prof. (Systems & Eng. Management), NTU, Singapore

sunita.chauhan@plaksha.edu.in

Research Area

Computer Vision; Machine Learning; Internet-of-Things

Projects

Image-based precision agriculture; Study of Human-environment interaction

Dr Srikant Srinivasan

Associate Dean Academics & Associate Professor

Past Associations

- Associate Dean (courses), IIT Mandi
- Adjunct Assistant Professor, Plant Sciences Institute, Iowa State University, USA
- Post-doctoral Fellow/ Data Scientist, Iowa State University, USA

srikant.srinivasan@plaksha.edu.in

Robotics & Deep Learning

Research Area

Robotics, Path planning, Multi-robot systems, Applied Machine Learning, Computer Vision and Perception

Projects

Integrated intelligent active orthoses (esp. lower limb), Robotic muscles - sensors & actuators (Soft-robotics) for medical applications

Dr Sandeep Manjanna
Assistant Professor

Past Associations
- Postdoctoral Researcher at GRASP Labs, University of Pennsylvania, USA.

sandeep.manjanna@plaksha.edu.in

Research Area

Data Privacy, Cyber security
Applied AI, Fairness in AI

Projects
Data Privacy for smart cities
cybersecurity of Financial systems/
IndiaStack, etc,.

Dr K Gopinath
Professor

Past Associations

• Professor, Computer Science &
Automation, Indian Institute of Science, Bangalore

gopinath.kanchi@plaksha.edu.in

Research Area

Computational Neuroscience and
Experimental Neuroscience.
Application of ML in Neuroscience and
Neuroethology

Projects

Integration of multiple sensory inputs
in foraging behavior of insects.
iophysical modelling. Track animal
behavior.

Dr Subhasis Ray
Assistant Professor

Past Associations

• Postdoctoral Fellow, NICHD, National Institutes
of Health (NIH), Bethesda, USA
• Software Engineer, IBM India Pvt. Ltd., Kolkata,
India

subhasis.ray@plaksha.edu.in

④ Environment & Clean Energy

Research Area

High-Performance buildings, Urban heat Islands and Smart Homes,

Dr Vishal Garg

Dean Academics & Research and Professor

Past Associations

- Founder Head and Professor, Centre for IT in Building Science, IIIT Hyderabad

vishal.garg@plaksha.edu.in

Research Area

Sensors - electrochemical and/or optical

Projects

Electrochemical sensing for water security and point of care health; Optical sensors for heavy metal detection in water

Dr Chaitanya Lekshmi Indira

Associate Professor

Past Associations

- Associate Professor, CMRIT, Bengaluru
- Assistant Professor, AIMSR, Kochi
- Visiting Scientist, FBML, MIT, USA
- Postdoctoral Researcher, CNRS-National Nanotechnology Laboratory, Italy

chaitanya.indira@plaksha.edu.in

Environment & Clean Energy

Research Area

Fluid mechanics, heat transfer, Environmental flows, Urban microclimate and Thermal comfort

Projects

Urban heat island effect and its mitigation, Human thermal comfort by low energy means, Heat transfer enhancement in turbulent natural convection, Light and sound propagation in turbulent media.

Dr Shashikant Pawar
Assistant Professor

Past Associations
• Faculty member, Department of Mechanical Engineering, Don Bosco Institute of Technology, Mumbai.
• Research Associate, Fluid Mechanics Laboratory, IISc, Bangalore.
• Executive Engineer, Larsen & Toubro Ltd.

shashikant.pawar@plaksha.edu.in

Research Area

Indian Linguistics, AI for Manuscripts
Indic studies in consciousness
research, rasa theory

Projects

Linguistic tradition in India and its
current relevance, rasa theory and
techno philosophy

Dr K Gopinath
Professor

Past Associations

- Professor, Computer Science & Automation, Indian
  Institute of Science, Bangalore

gopinath.kanchi@plaksha.edu.in

Research Area

Humanities, Philosophy of Language,
Literature and Communication, STEM
Pedagogy

Projects

Human Imagination and Creativity,
Edtech and Stem education

Dr Brainerd Prince
Associate Professor of Practice

Past Associations
- Research Dean, Ecole Hoteliere at Lavasa, Lavasa
- Research Tutor, Oxford Centre for Mission Studies,
  Oxford
- Research Fellow, Oxford Centre for Hindu Studies,
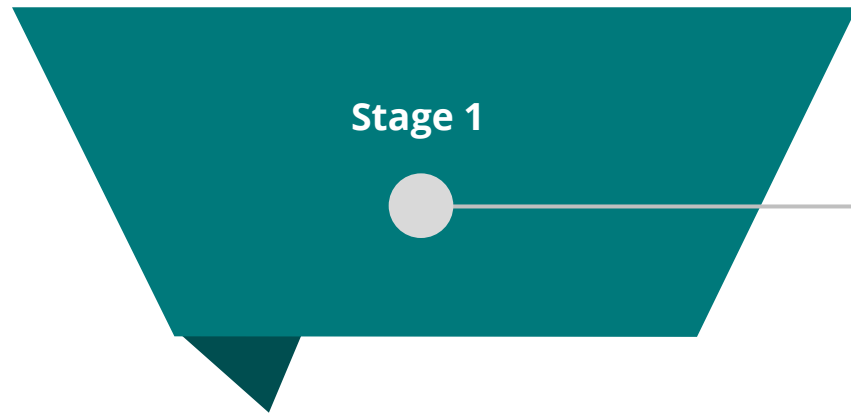 Oxford

brainerd.prince@plaksha.edu.in

Plaksha students are...

- Passionate about technology
- Have a creator-builder mindset
- Explore all facets of technology and innovate
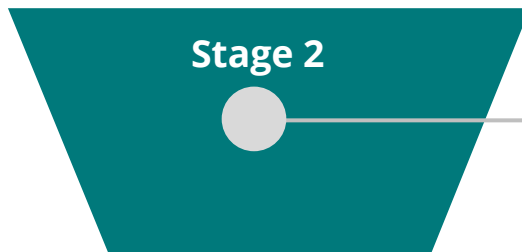- Aspire to be tech leaders, entrepreneurs, researchers, and problem solvers

Beyond grades - Three-stage holistic admissions process
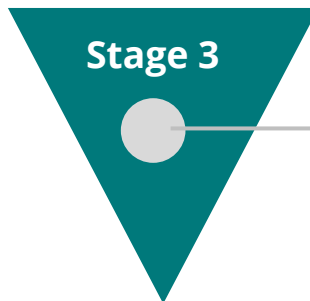
Stage 1

Application form

- **Statement of Research**
- **Letter of Reference (LOR)**
- **Academic records**
- Artefacts of **Extra-curricular activities**

Stage 2

One on one interaction *(online)*

- An opportunity to **know** supervisors
- Tell us more about **you,** your interests & your experiences
- Some questions to understand your critical & lateral thinking and to assess your research interest
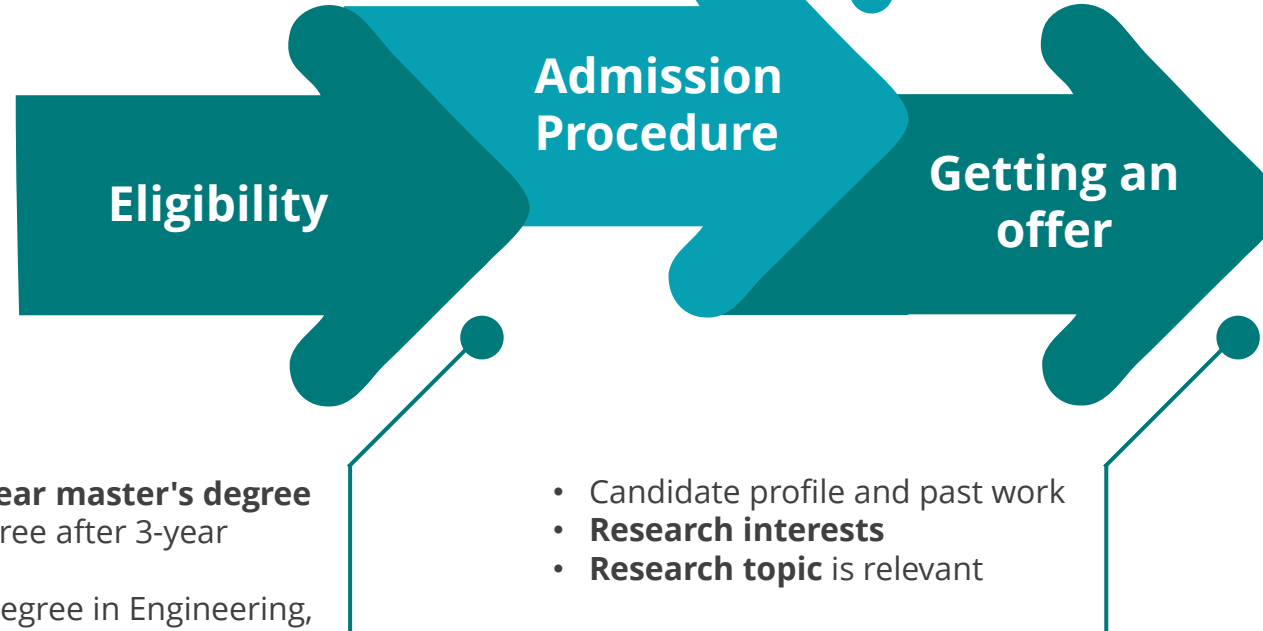
Stage 3

Showcase Day *(in-person)*

- **Campus walk**
- Learn about **facilities** and student life
- **Written assignment** to understand your research methodology and subject knowledge
- Face-to-face **interview** wit with prospective supervisor

PhD admissions at Plaksha

- Candidates qualified in **GATE/ UGC NET/ CSIT-UGC NET/ CEED/ JAM/ DBT-JRF** or any other national test are exempted from admission test
- Candidates without national test scores are admitted into the PRF program with the ibility of converting it to PhD after six months

Eligibility

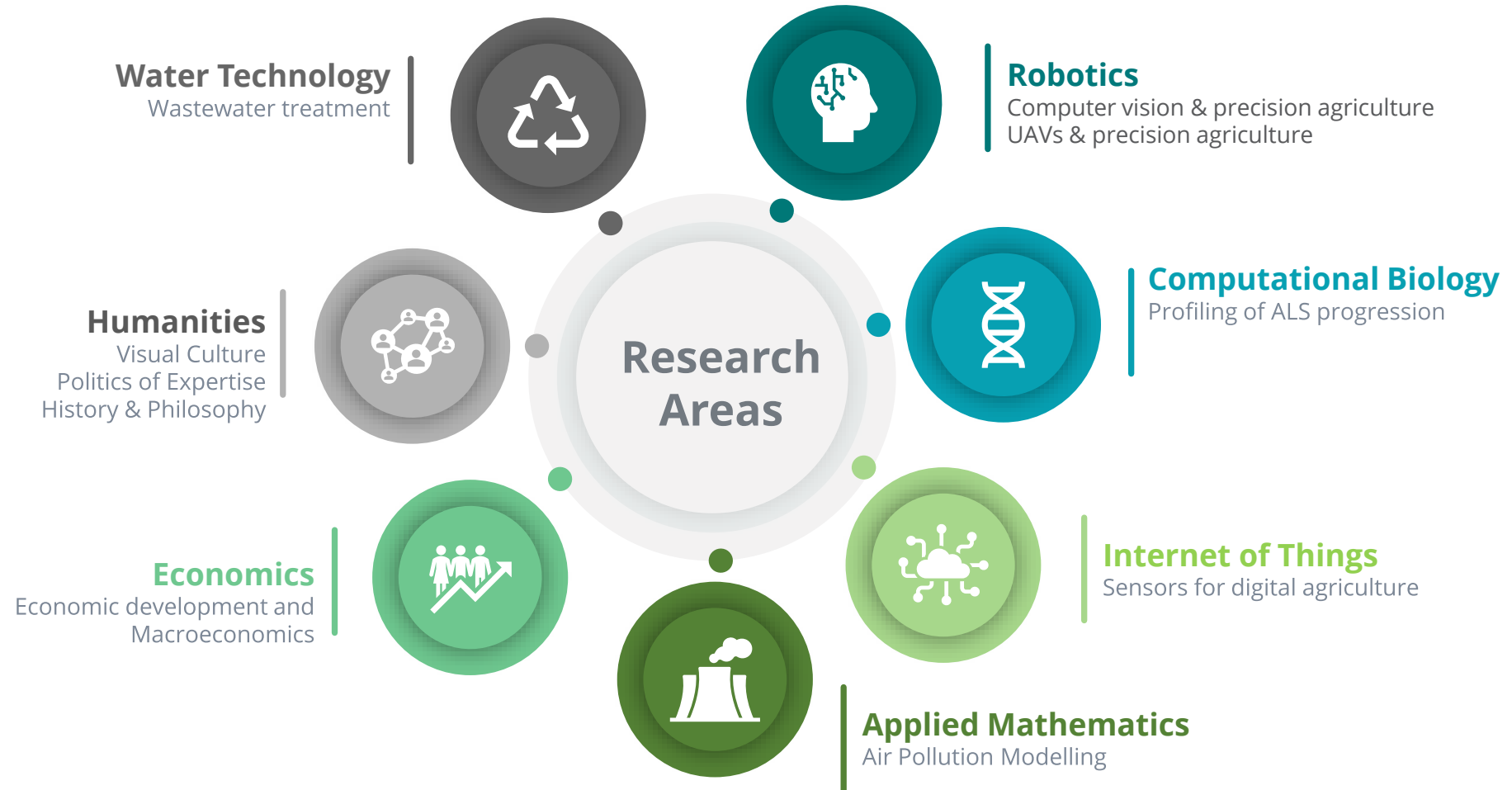**Admission Procedure**

Getting an offer

- Candidates with **1-year master's degree**
- **2-year** master's degree after 3-year bachelor's degree
- **4-year bachelor's** degree in Engineering, Science, Humanities and others

- Candidate profile and past work
- **Research interests**
- **Research topic** is relevant

Candidates may however apply at any time throughout the yea Nonetheless, the applications are norma processed in two cycle for semesters commencing in July ar January months each year.

Class of 2022: Diverse cohort

Water Technology
Wastewater treatment

Robotics
Computer vision & precision agriculture
UAVs & precision agriculture

Humanities
Visual Culture
Politics of Expertise
History & Philosophy

Research Areas

Computational Biology
Profiling of ALS progression

Economics
Economic development and
Macroeconomics

Internet of Things
Sensors for digital agriculture

Applied Mathematics
Air Pollution Modelling

Fee, and Financial Support

Fee

- Admission Fee (one time) ₹ 25,000
- Annual Registration Fee (non-refundable) ₹ 5,000
- Annual Tuition Fee ₹ 7,00,000

Tuition Fee waiver

- Candidates admitted under Plaksha Doctoral Fellowship or Government Fellowship will receive a full tuition fee waiver in addition to the financial support

Financial Support

- Monthly stipend of **₹ 60,000 in first & second year & ₹ 70,000 after completion of the second year** for subsequent years
- Conference/ workshop related travel allowance (domestic and international) of up to **₹ 2,00,000** during the entire duration
- For Research Internship at National/ International Instituitions *(subject to recommendation of DRC)*

Combining domain knowledge, research & portable skills

Courses

Module 1

Domain Specific

Provides in-depth specialized knowledge and skills related to a specific domain/ subject

Module 2

Research Skills

Provide PhD Scholars with the necessary knowledge and tools to conduct rigorous and impactful research in their respective fields.

Module 3

Portable Skills

Focuses on practical, hands-on skills that can be applied in variety of contexts, making PhD Scholars more versatile and adaptable in their careers.
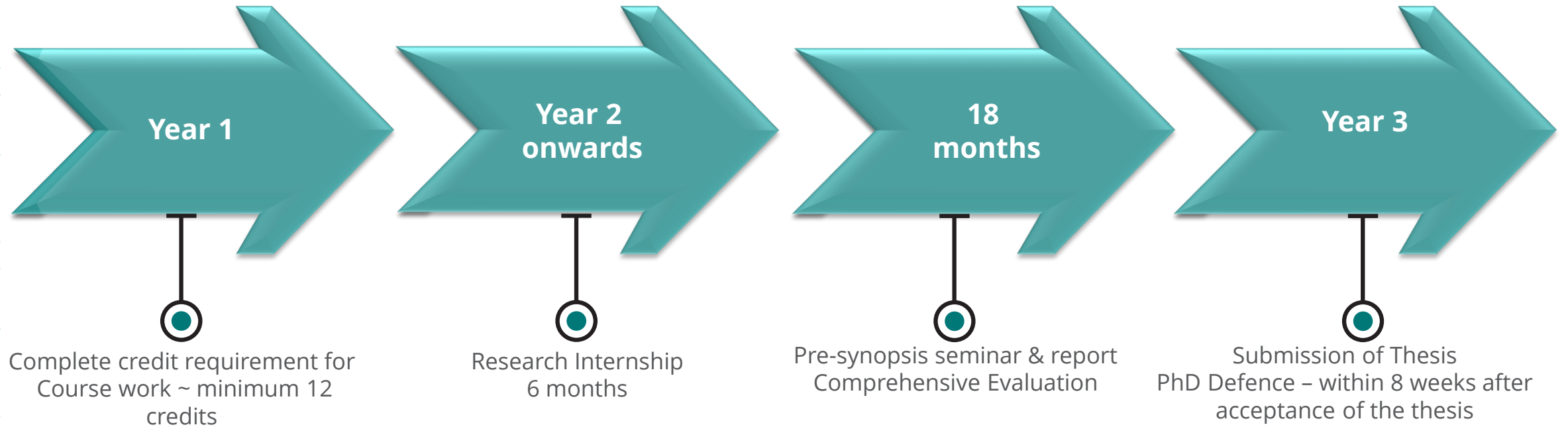
Illustrative course

- Advanced Fluid Mechanics
- Advanced Macroeconomic Development
- Entangled Worlds

- Research Methods
- Data Analysis
- Ethics in research
- Writing for research
- Literature review

- Leadership
- Effective Communication
- Teaching
- Project Management

Academics – Deep Dive

Year 1

Complete credit requirement for Course work ~ minimum 12 credits

Year 2 onwards

Research Internship 6 months

18 months

Pre-synopsis seminar & report Comprehensive Evaluation

Year 3

Submission of Thesis PhD Defence – within 8 weeks after acceptance of the thesis

✓ PhD Scholar must register for at least **2 courses from each module**, including mandatory course

✓ **Mandatory courses are** (i) Research & Publication Ethics (ii) Research Methodology and (iii) Personal & Professional Leadership