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IISc MEDICAL SCHOOL

THE NEXT FRONTIER

IISc

RICH LEGACY

- FOUNDED IN 1909
- INDIA’S #1 UNIVERSITY
- WORLD’S #1 IN CITATIONS PER FACULTY (QS)
- INSTITUTION OF

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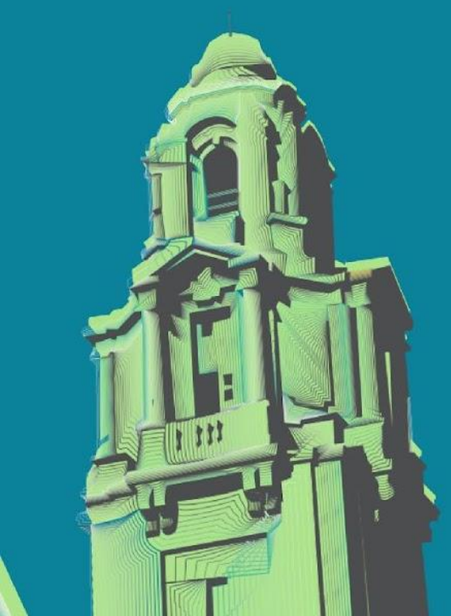
IISc
LOOKING AHEAD

NEW FRONTIER FOR NEXT CENTURY

IISc MEDICAL SCHOOL

AFTER A CENTURY OF EXCELLENCE IN SCIENCE AND ENGINEERING



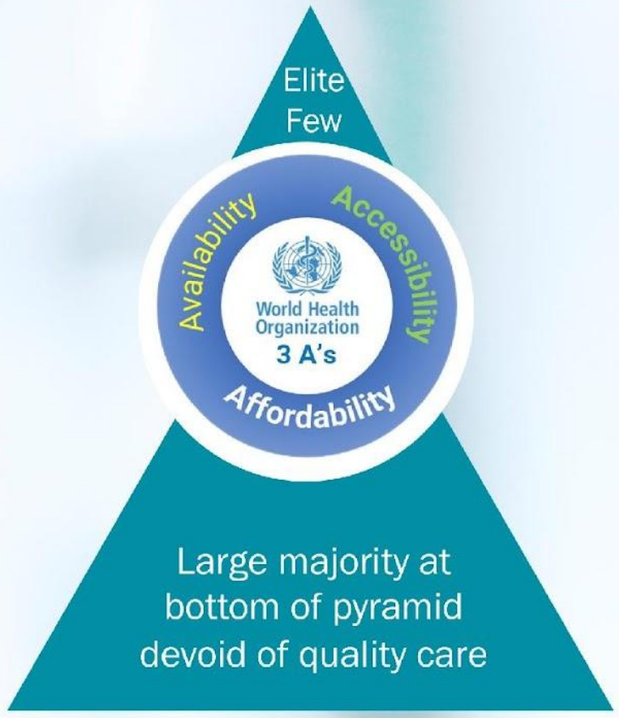
HEALTHCARE

GLOBAL TRENDS

& OPPORTUNITIES

CONVERGENCE

EQUITY



DELIVERY

VISION, MISSION, VALUES

VISION

EXCELLENCE IN CLINICAL RESEARCH AND MEDICAL TECHNOLOGY

MISSION

IMPACT HEALTH OF “NEXT” 7 BILLION PEOPLE ON THE PLANET

FOSTER INTERDISCIPLINARY RESEARCH TO ADDRESS HEALTHCARE NEEDS

CREATE NEW GENERATION OF PHYSICIAN-SCIENTISTS

ENABLE TRANSLATION THROUGH MEDTECH INDUSTRY & START-UPS

PARTNER WITH OTHER STAKEHOLDERS TO PIONEER NEW HEALTHCARE MODELS

VALUES

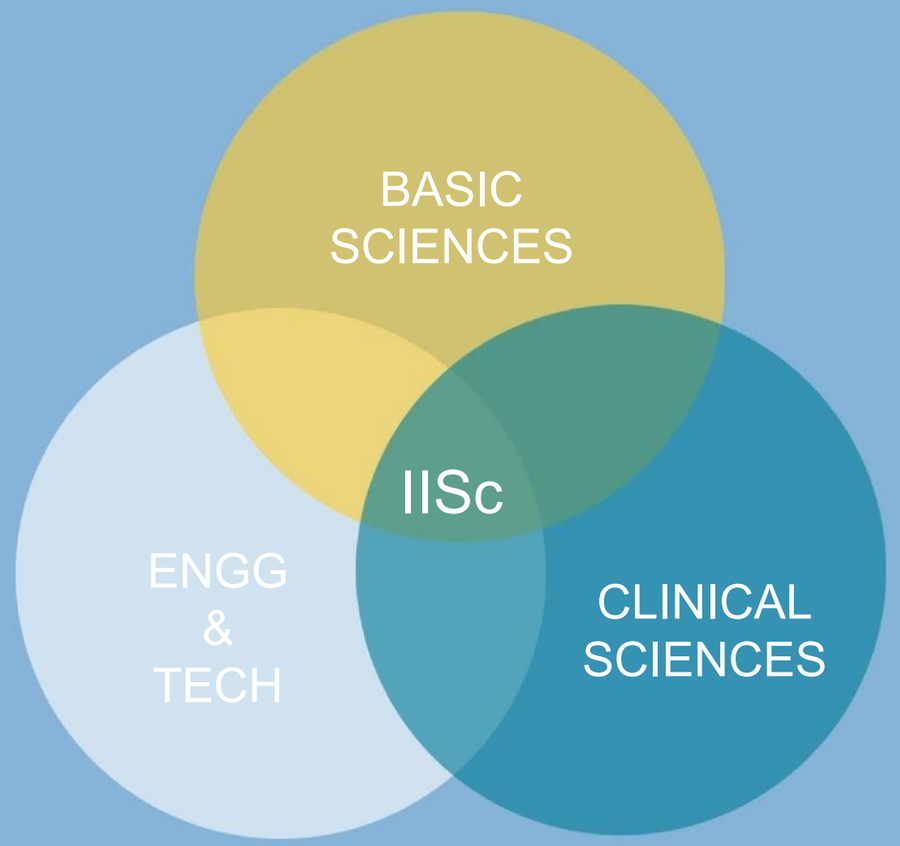
QUALITY AND AFFORDABLE HEALTHCARE FOR ALL

SERVICE WITH EMPATHY

EMPOWER THE PATIENT

IISc CAN GREATLY IMPACT FUTURE OF HEALTHCARE

HEALTHCARE: 21ST CENTURY PRIORITY FOR INDIA & THE WORLD



CONFLUENCE OF DISCIPLINES IS CRUCIAL FOR CUTTING-EDGE MEDICAL RESEARCH

EXPERTISE AT IISc IN CROSS-DISCIPLINARY RESEARCH

- QUANTUM TECHNOLOGIES
- BRAIN, COMPUTATION & DATA SCIENCE
- SENSORS & IOT
- VISUAL ANALYTICS
- DIGITAL HEALTH
- BIOMEDICAL SYSTEMS & DEVICES
- CANCER RESEARCH
- VACCINES & DRUG DISCOVERY

IISc MED SCHOOL WILL ELEVATE THESE EFFORTS TO CREATE GLOBAL IMPACT

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IISc Medical School

POSTGRADUATE MEDICAL SCHOOL

A PARADIGM SHIFT FOR INDIA IN THE AREA OF MEDICAL EDUCATION AND RESEARCH

PLAN FOR 832-BED HOSPITAL FOR CLINICAL RESEARCH WITH EMPHASIS ON PG AND PhD TRAINING AND RESEARCH

START WITH FOCUS ON SPECIFIC RESEARCH AREAS (CANCER, DIABETES AND METABOLIC DISORDERS, NEURODEGENERATIVE DISORDERS, INFECTIOUS DISEASES, ETC.)

PROVIDE ADVANCED DIAGNOSTIC AND LABORATORY FACILITIES FOR RESEARCH

ENABLE SEAMLESS INTEGRATION WITH OTHER SCIENCE

MD-PhD: FOSTERING CLINICAL RESEARCH @ IISc Med School

EDUCATE AND TRAIN PHYSICIAN-SCIENTISTS TO BRIDGE THE GAP BETWEEN LAB RESEARCH AND CLINICAL MEDICINE

MD-PhD IN INDIA IS EQUIVALENT TO RESIDENCY-PhD IN THE USA

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MD-PhD: CRITICAL ENABLER

MD THESIS WORK ALIGNED WITH PhD; JOINTLY DONE IN SCI & ENGG LABS/MED SCHOOL

1-2 DAYS/WEEK IN SCI & ENGG LABS + CLINICAL WORK FOR MD TRAINING

SINGLE THESIS SUBMITTED AT END OF PROGRAMME

MD + PhD AWARDED COTERMINOUS AFTER 5/6 YEARS

ROTATION IN 2-3 LABS BEFORE FINALISING PhD GUIDE (FIRST 6 MONTHS)

MD TRAINING IN MED SCHOOL + CONCURRENT PhD TRAINING

Other Dual Degree Programs : MD-MTech, MPH-MTech…

INFECTIOUS DISEASES

HIV, COVID-19, DENGUE
TB, DRUG-RESISTANT BACTERIA
ANTIVIRAL DRUGS
BIOMARKERS
ANTIMICROBIAL SURFACES

VACCINES

IMMUNOGENS
ADJUVANTS
NEW DELIVERY VEHICLES
MRNA & OTHER VECTORS
IMMUNOGENIC RESPONSE

INTEGRATIVE MEDICINE

TRADITIONAL SYSTEMS
PLANT-BASED FORMULATIONS
REVERSE PHARMACOLOGY
YOGA & MIND-BODY CONNECTION

RESEARCH AND INNOVATION POSSIBILITIES

DIABETES

ARTIFICIAL PANCREAS
WOUND-HEALING PATCHES
INFLAMMATION MARKERS
EARLY DIAGNOSIS OF COMPLICATIONS

CANCER

EARLY DIAGNOSIS
IMMUNE THERAPY
TARGETED DRUG DELIVERY
MRNA REGULATION
ANTI-CANCER DRUGS

NEURODEGENERATIVE DISORDERS

MOLECULAR MECHANISMS
BRAIN IMAGING
NEURAL PROSTHESIS AND IMPLANTS

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RESEARCH AND INNOVATION POSSIBILITIES

PRECISION MEDICINE

PHARMACOGENOMICS
MARKERS FOR DISEASE PROGRESSION & RESPONSIVENESS
RARE GENETIC DISORDERS

AIEH

AI FOR DIAGNOSIS
TELE RADIOLOGY
REMOTE CRITICAL CARE
DECISION SUPPORT SYSTEMS

BIOMED DEVICES

BIOSENSORS
WEARABLE DEVICES
NANOROBOTICS FOR THERAPY
PROSTHETIC DEVICES
IMPLANTS
MEDICAL INSTRUMENTS

DIGITAL HEALTH

DIGITAL TWIN
BODY-ON-A-CHIP
HUMAN SYSTEM MODELLING

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TIMELINE

2021 → **2022** → **2025** → **2026**

DPR COMPLETED
FUND RAISING AND
INITIATION OF
PROJECT ACTIVITIES

MOU WITH NATIONAL &
INTERNATIONAL
MEDICAL SCHOOLS

BEGIN CIVIL
CONSTRUCTION

HOSPITAL AND OTHER
BUILDINGS TO BE
READY, EQUIPMENT
MOVES IN AND HOSPITAL
BECOMES
FULLY FUNCTIONAL

FIRST BATCH OF
MD-PhD
STUDENTS TO BE
ADMITTED

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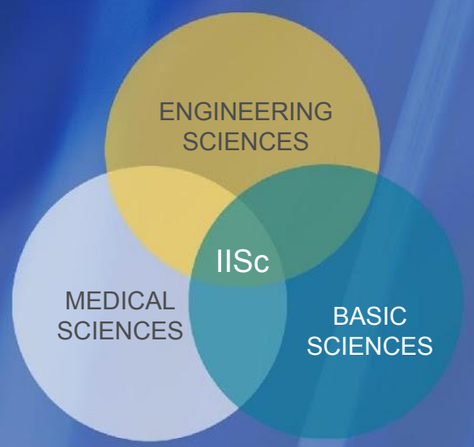
MEDICAL SCHOOL &
BAGCHI-PARTHASA
ATHY HOSPITAL

RESEARCH
AND
INNOVATION
POSSIBILITIES

HEALTHCARE & MEDTECH INCUBATOR

IDEAS → INNOVATE & TRANSLATE → PRODUCTS



HEALTHCARE PRACTICE

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Foundation
for
Science Innovation and Development (FSID)

Foundation for Science
Innovation and Development
established by IISc

Society for Innovation and Development

- Started in 1991 in collaboration with IISc, SID aims to **help transformative business enterprises grow and scale**
- 4 divisions – **CORE, TIME, STEM and SEED**
- **Section 8 company called Foundation for Science, Innovation and Development**

CORE LABS
unfolding value SID | IISc

Engages with large corporations for collaborative research

- Enables **industries and large corporations** to access **IISc expertise**
- Typically **long-lasting engagements** of 4-5 years
- **500+ projects with 200+ companies**
- Partnered with **Unilever, Tata, GAIL, Infosys, Microsoft, HP, Boeing** and others

TIME²
unfolding innovation SID | IISc

Works with mid-sized enterprises

- Works with **medium sized, and smaller enterprises** to develop **market-ready innovations**
- **Co-innovation, design and development** support
- 2-year engagements
- Some examples are the **Next Generation Fellowship** and the **Platform Innovation Centre**

STEM CELL
deep science startups SID | IISc

Incubates DS-DT start-ups

- Leading deep-science incubator focused on social impact
- Provides access to **facilities, faculty engagement and** IISc brand name
- Successfully **incubated 65+ start-ups, 25+ have commercialized** (at early stage)
- **CPDM-TBI**: Focused Geriatric MedTech Incubator
- **InCeNSE-TBI**: Nano Science based incubator.
- **Entrepreneurship in Residence(EIR)** Program

SEED
science for humanity SID | IISc

Targeted Research for high impact

- Facilitates innovations in under-represented **Rural development sector**
- **Co-innovation, design and development** support for Enterprise creation
- Presence in **Bengaluru and Chitradurga** for training and translation
- Focus areas include Waste-to-wealth, Water, Environment protection etc.

STEM Cell Differentiators

STEM Cell's differentiators

1 Pedigree

Housed at the IISc, the #1 ranked Indian institute[1]

2 Positioning

Dual focus on deep science and social impact

3 Proposition

Longer incubation, top facilities, deep faculty engagement, located in the "silicon valley of India"

4 Potential impact

65+ impact-driven incubatees; 27+ at early stage commercialization or already in market

5 People

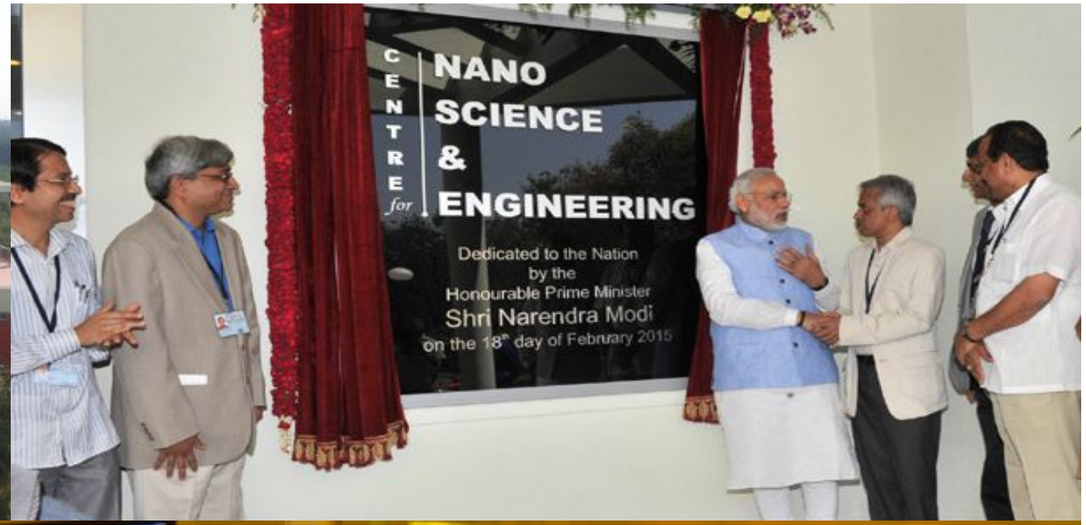
8-member team with 150 years of cumulative experience and proven track record

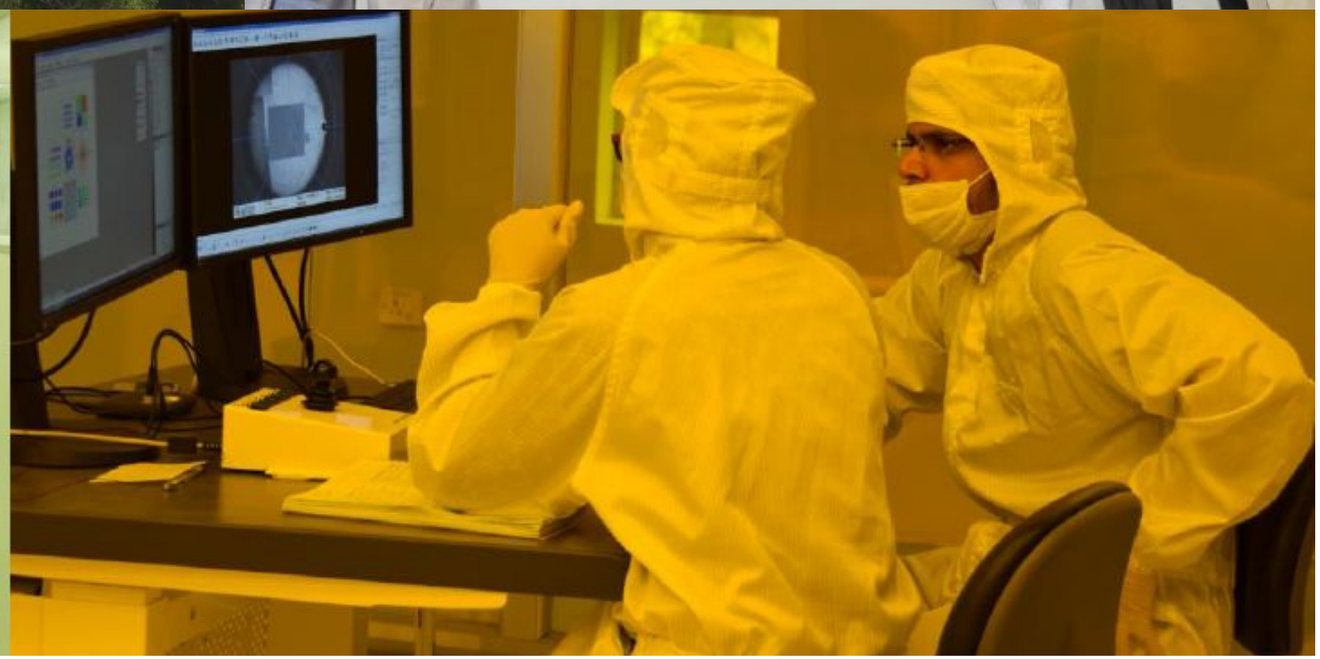
1. Times Higher Education Rankings

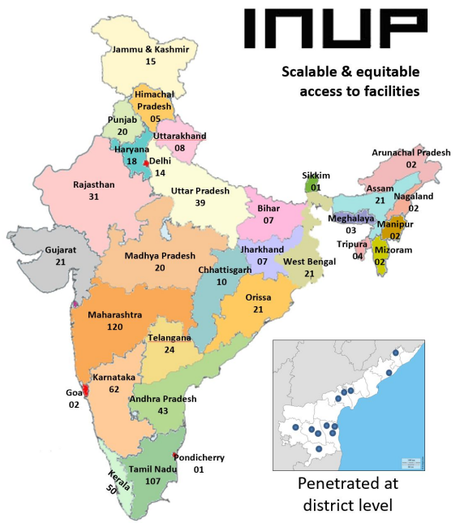
Domain Agnostic, Deep Science, Open Incubator

*"We incubate IP based start-ups that commercialize science and technology **across domains** for societal benefit irrespective of the origins of the founding team"*

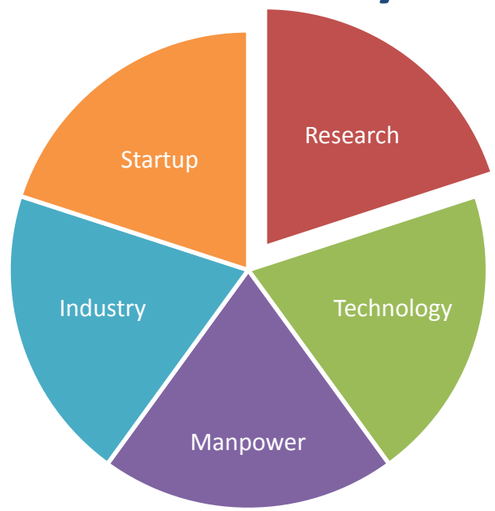
Industry-Academia Collaboration
Successful Examples







Pan India Ecosystem



Industry & Strategic Sector Connect

Affiliate Member Program

Past

Facilities usage of 7500 hours

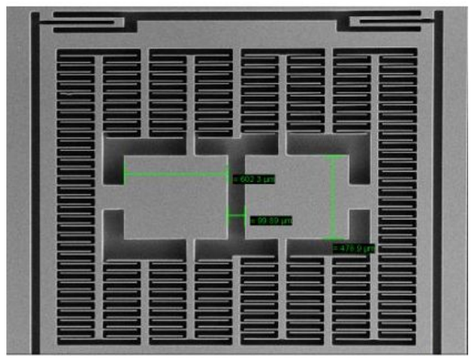
18 Joint projects

7 workshops for training

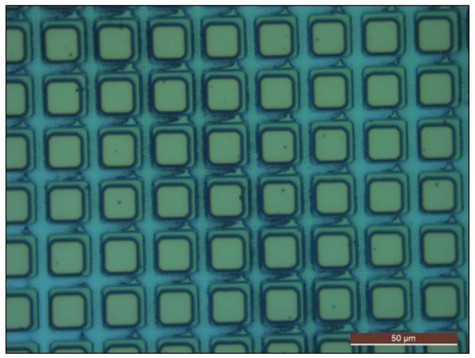
Student placements

Funds for 146 interns + 81 student travel

Strategic Program



MEMS inertial sensors - RCI



SWIR InP/InGaAs/InP - SSPL

10 DRDO & 6 ISRO labs

Facility used 3750 hours

14 ISRO-funded projects

6 workshops for DRDO

ToT

INCeNSE : Incubation @ CeNSE

INCeNSE is an incubator in CeNSE that enables entrepreneurs who can leverage CeNSE facilities for their startup requirements

Currently Incubated Startups at INCeNSE

AGNIT *by CeNSE Faculty	infab MEMS & Microfluidics Solution *by CeNSE Faculty	theranautilus *by CeNSE Faculty	Super Quantum
SILICON SOLUTIONS	μKrón Prototype Swiftly	INTERNATIONAL CENTER FOR NANODEVICES	Dense Power
ABX3 PV Perovskite Power: Innovative Energy Revolution	Gyrfalcon IntelliEdge Solutions	Meerkats.World SYNCHRONIZED INVENTION FOR A BETTER WORLD	MOLECULAR SEMICONDUCTORS
i2n Technologies	Path Shodh HEALTHCARE Inventing lifelines...	Qrera	GT Silicon Committed to Innovate

Graduated Startup

NUTAN LABS

Other Startups by CeNSE Faculty before 2017

THANK YOU