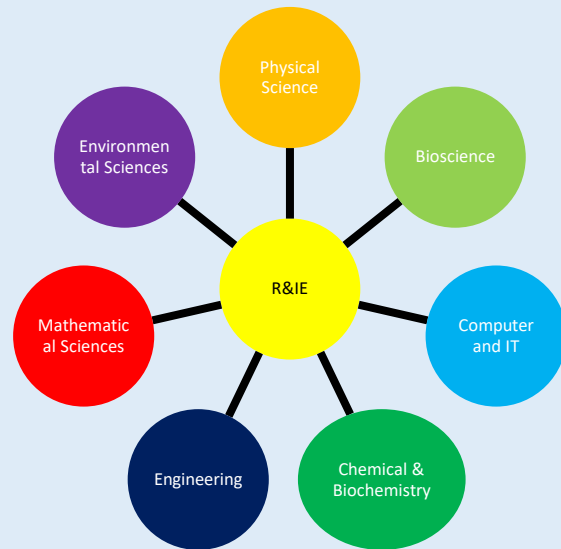




Department of Higher Education Govt. of JK (UT)

An initiative of creating
Research & Innovation Ecosystem
in
Jammu & Srinagar



Research and Innovation Ecosystem (R&IE)

VISION



HED envisioned to;

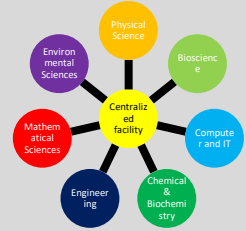
- create centralized Research & Innovation centers, equipped with state-of-the-art research facilities and an innovation-to-commercialization expertise, in Jammu and Srinagar.
- facilitate the science faculty at all Govt. Degree Colleges of JK to carry forward research work on thrust areas of socio-economic problems in JK (UT) and India.
- To inculcate the Research & Scientific temper among UG/PG students by introducing short-duration research projects in their general curricula.

Mission



- To emerge as one of foremost Union Territory/ State of India in providing technological solutions to the most pressing socio-economics problems faced by JK (UT) and country through Research & Innovations in Major thrust areas.
- Train the young researchers/students for advances in Science and Technology with ethos.

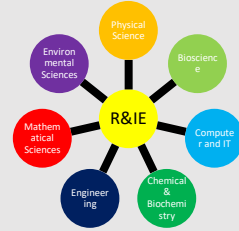
Screening Committee (SC) role and responsibilities



- **Administrative Secretary** Chairperson
- **Director Colleges** Convenor
- **Nodal Principal of the division** Member
- **Two renowned Professor of** Member (Subject Experts)
from universities/institute within JK (UT)
- **Director-R&EI** Member Secretary

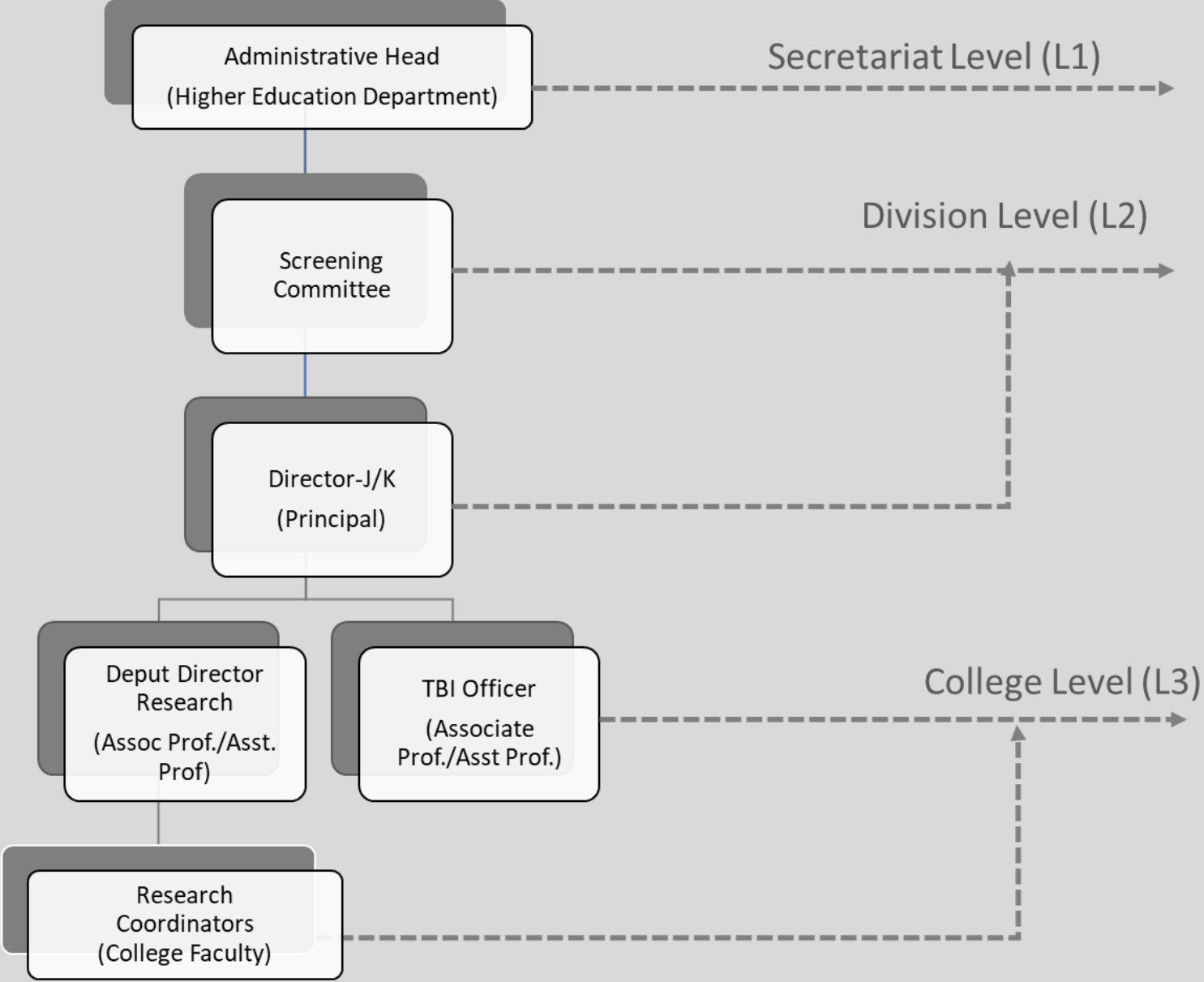
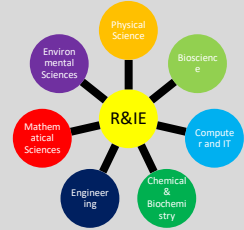
The SC committee, headed by AH, shall have very significant role in the beginning of RF. The SC shall appoint two administrative units, one for each Jammu and Kashmir Division, with administrative positions such as Director, Deputy Director (DD), Technology-Business Incubation (TBI) Officer, Research Co-ordinator (RC) and support staff for both the the organizational structure of HERF. The main roles of the SC are to appoint/nominate the administrative officers, set terms and conditions for the operational modalities of HERF and review and recommendation of research proposals for financial support from the HED based on set terms and conditions (T&C).

Objectives and Goals



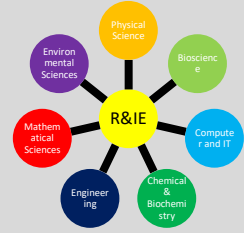
- To establish a research ecosystem in the college whilst creating a state-of-the-art research facility, operational 24/7, for the fundamental and advanced research in interdisciplinary/Multidisciplinary science areas with major thrust in identified fields.
- To develop and disseminate advanced scientific/technological knowledge and skills among the students, researchers and faculty at college level.
- To empower the college students to become future leaders in science and technology through interactive academic-industry collaborative research platform,
- To promote scientific environment through the multidisciplinary research ecosystem in the colleges and popularization of socially, economical relevant and viable research focusing on inclusive growth of our nation.
- To facilitate the all institutions in JK to emerge as interdisciplinary/multidisciplinary research institute.
- Short-term skill development training/conference/workshop/seminars/webinars on front line technologies.
- To build a nationally recognized Research-User-Facilities in the Union territory of Jammu and Kashmir (UTJK) that will serve academia and industry within an outside UT of JK.

Organization Structure



Organization Structure

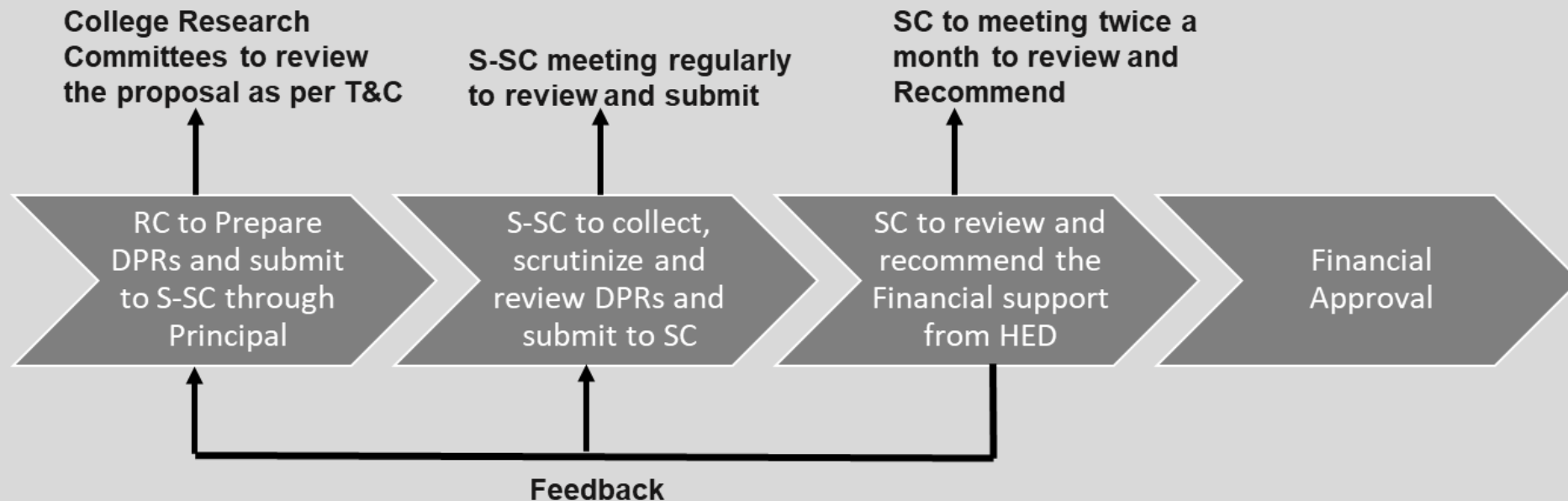
Sub-Screening Committee



•A three member committee called **Sub-Screening Committee (S-SC)** will also be constituted, to collect, scrutinize and review the detailed project reports (DPRs) as per the set T&C and submit to SC for final decision. The S-SC committee shall have following members;

- Director-J/K**
- Principal of the Concerned College**
- Deputy Directors Research- J/K**
- TBI-Officer**

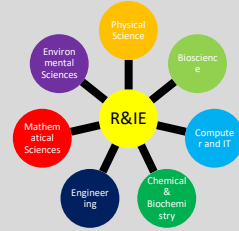
The DPRs must follow the following process path;



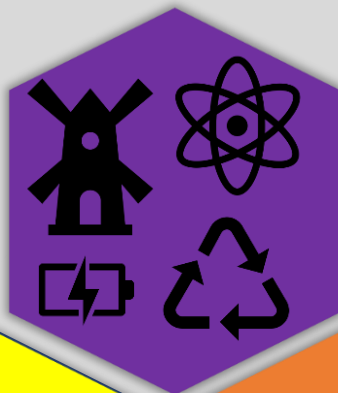
•*S-SC will ensure that the RC of the college must prepare DPRs in concurrence with the concerned Principal and research committees of the college fulfilling all the T&C and submit it to S-SC.*

Proposed Research Areas

(with Priority for Societal Needs)



Taxonomy of Machine Learning

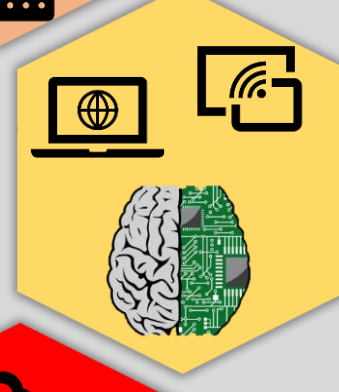


Machine Learning (IOT)/Deep Learning

Cross Language Info Retrieval

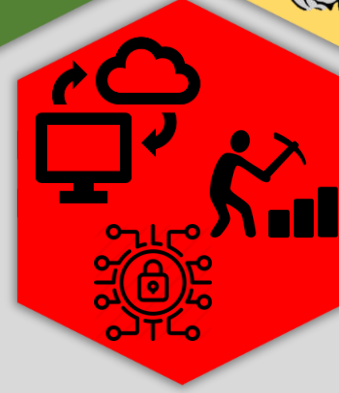
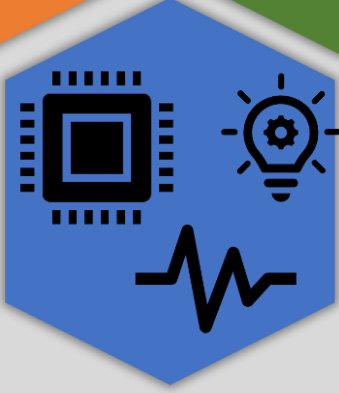
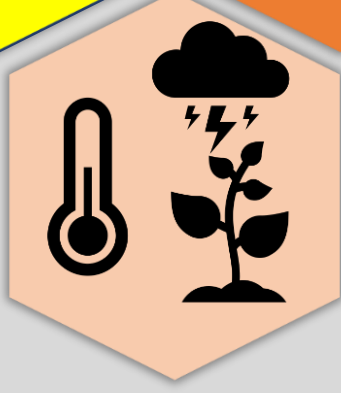
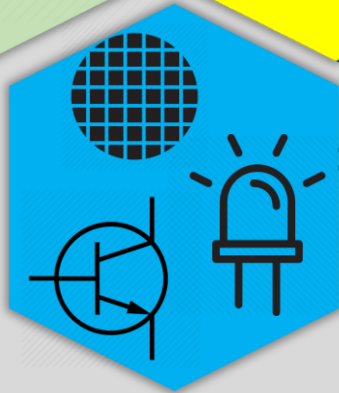


Multidisciplinary Research



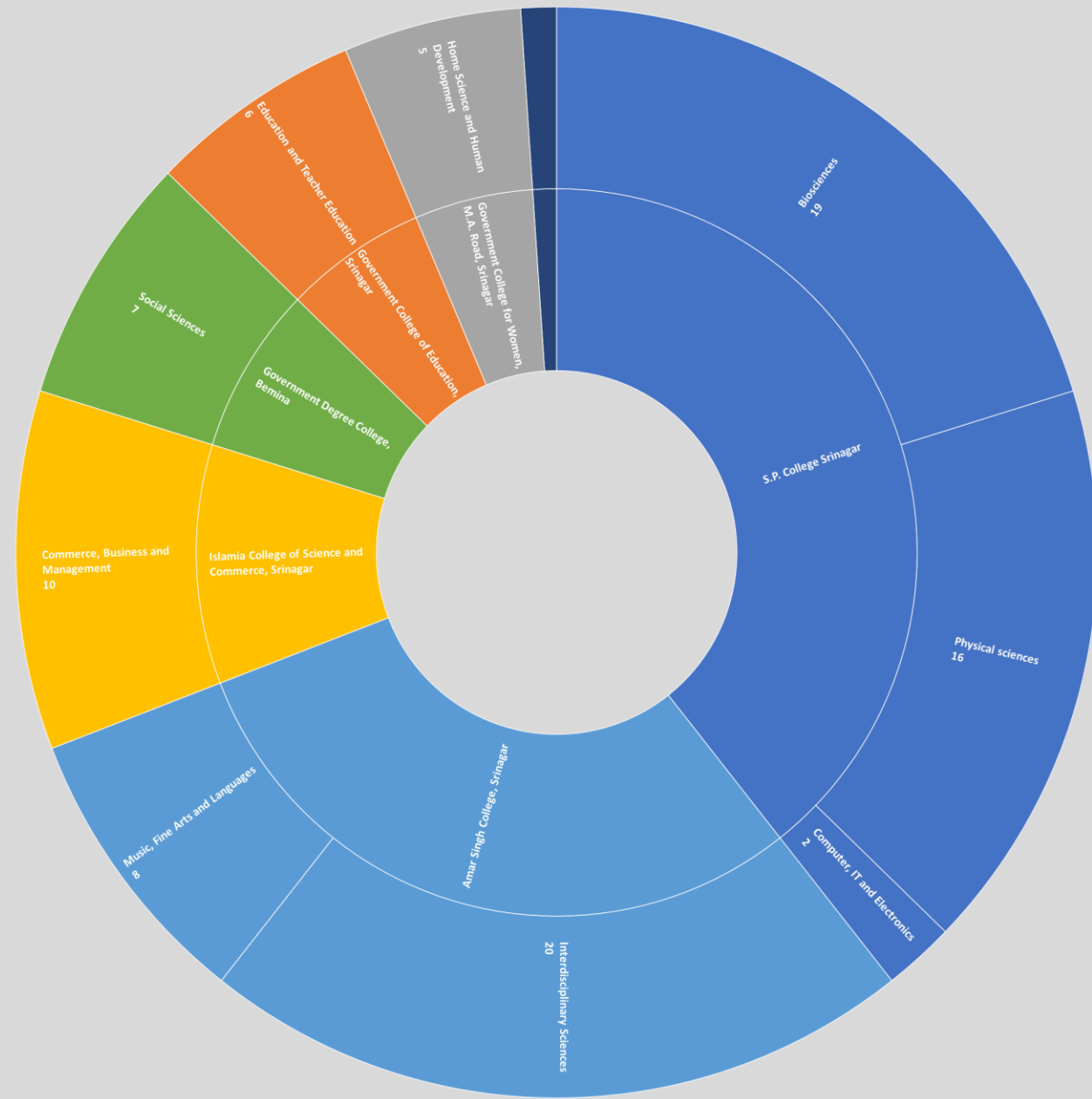
Human-Computer Interface

Nanoelectronics Optical Devices



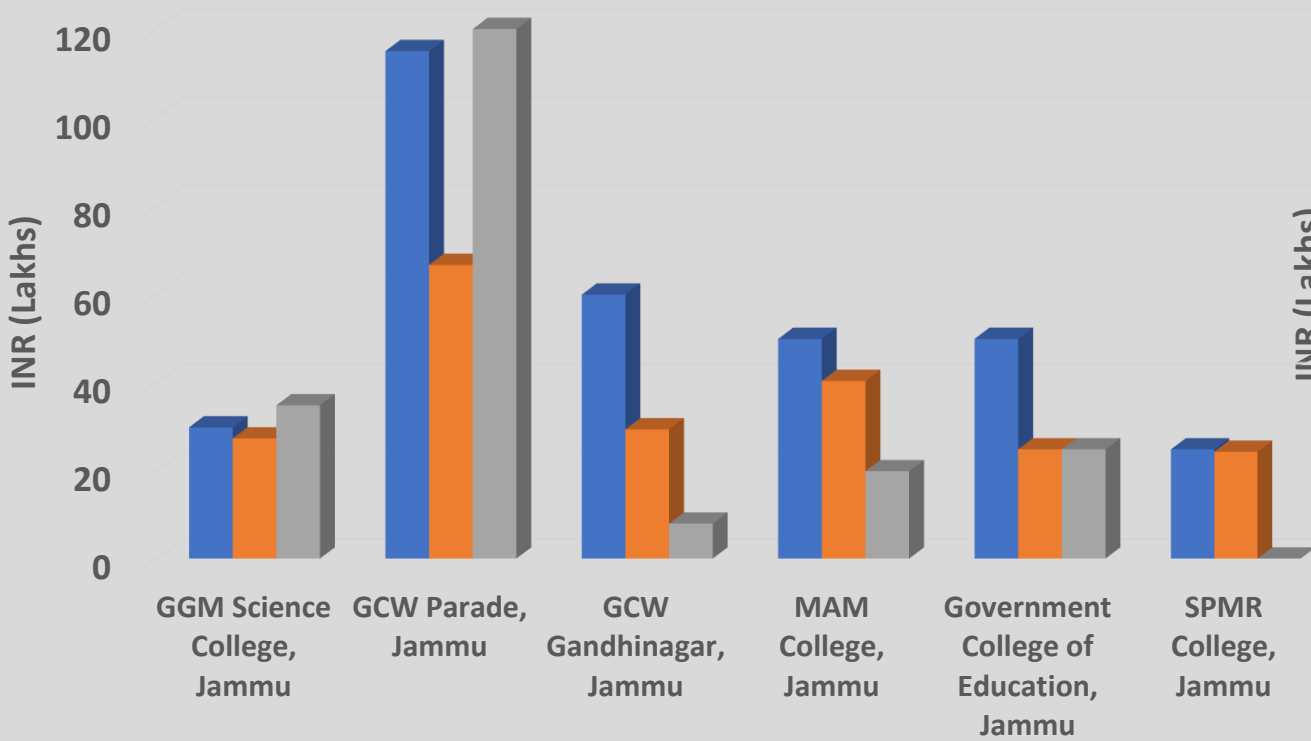
Cloud Computing
Data mining
Cyber security

Research Centres at HuB Colleges of Jammu & Kashmir Division

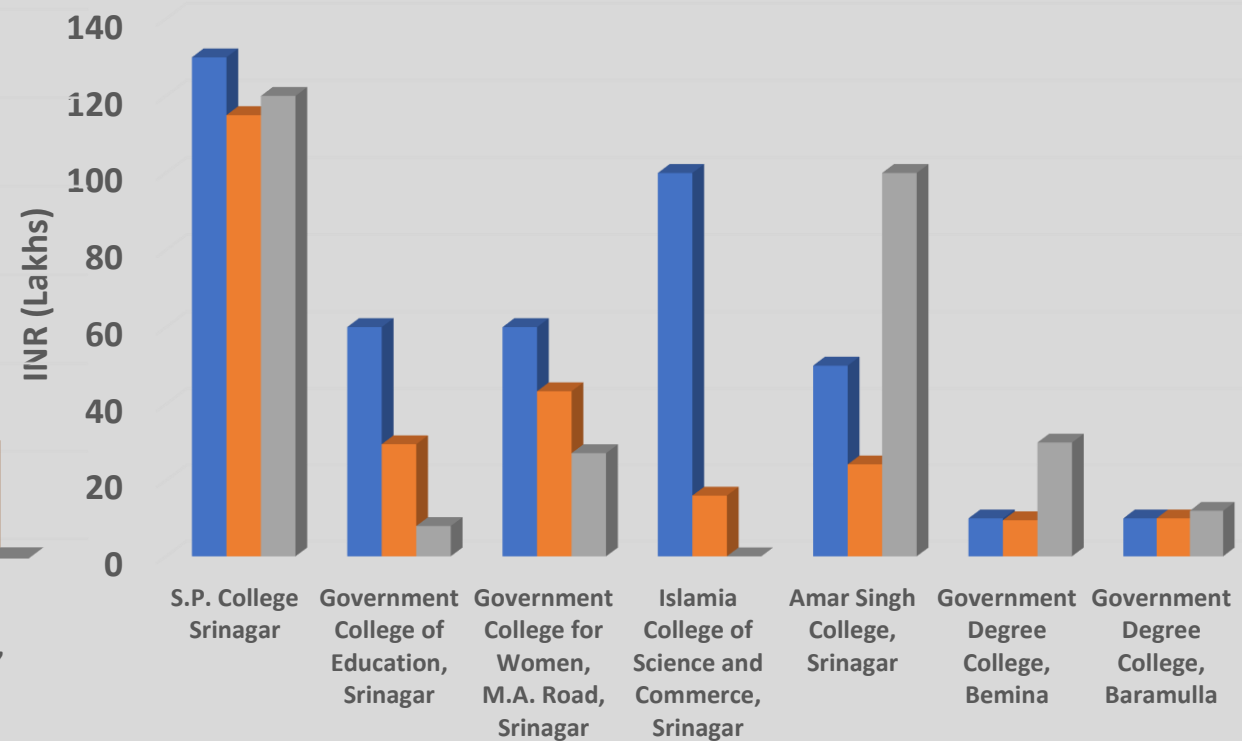


Hub Colleges Research Expenditure 2020-21

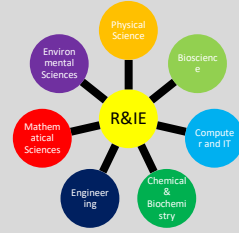
Expenditure of Hub Jammu College over 2020-21



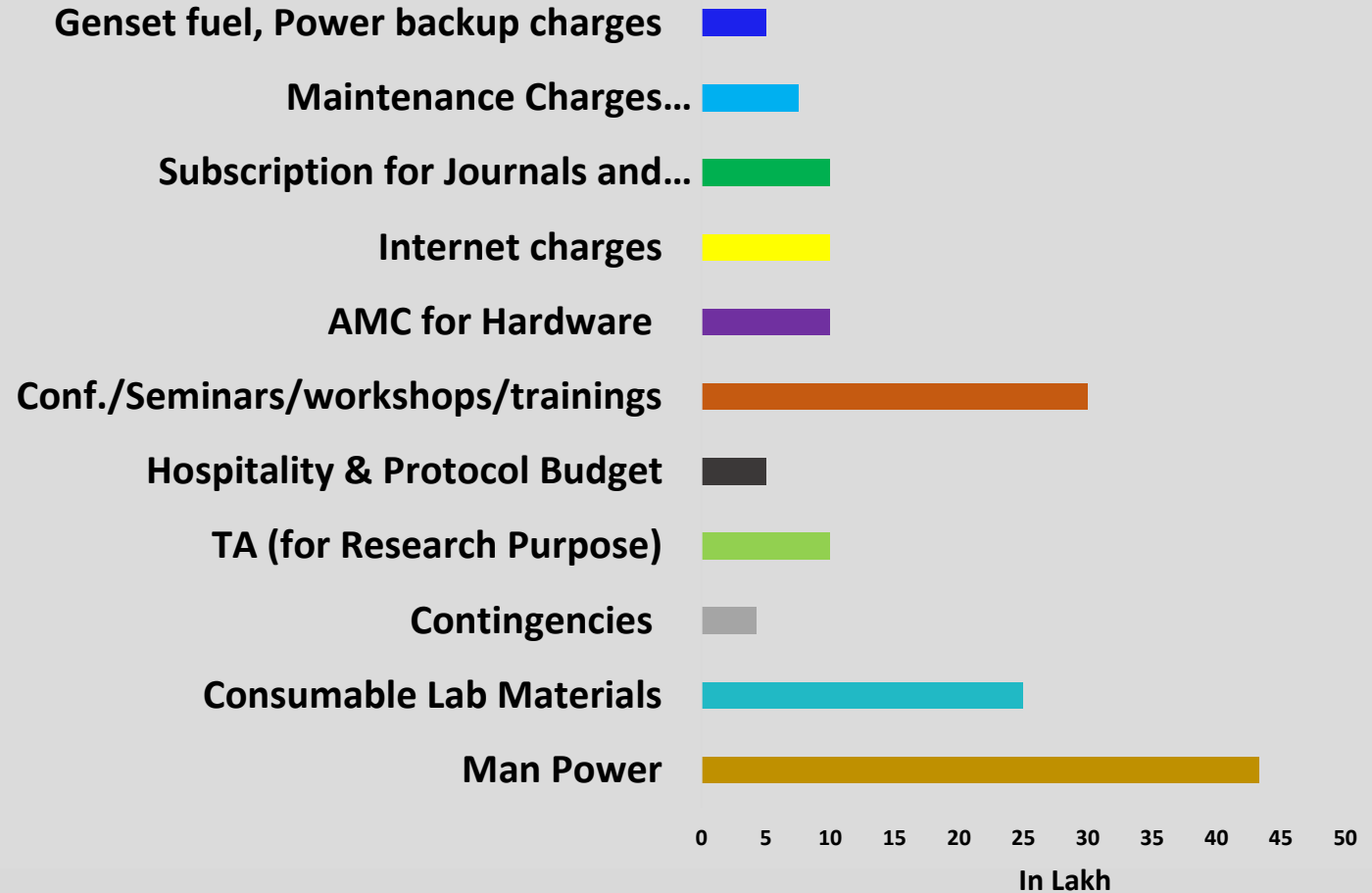
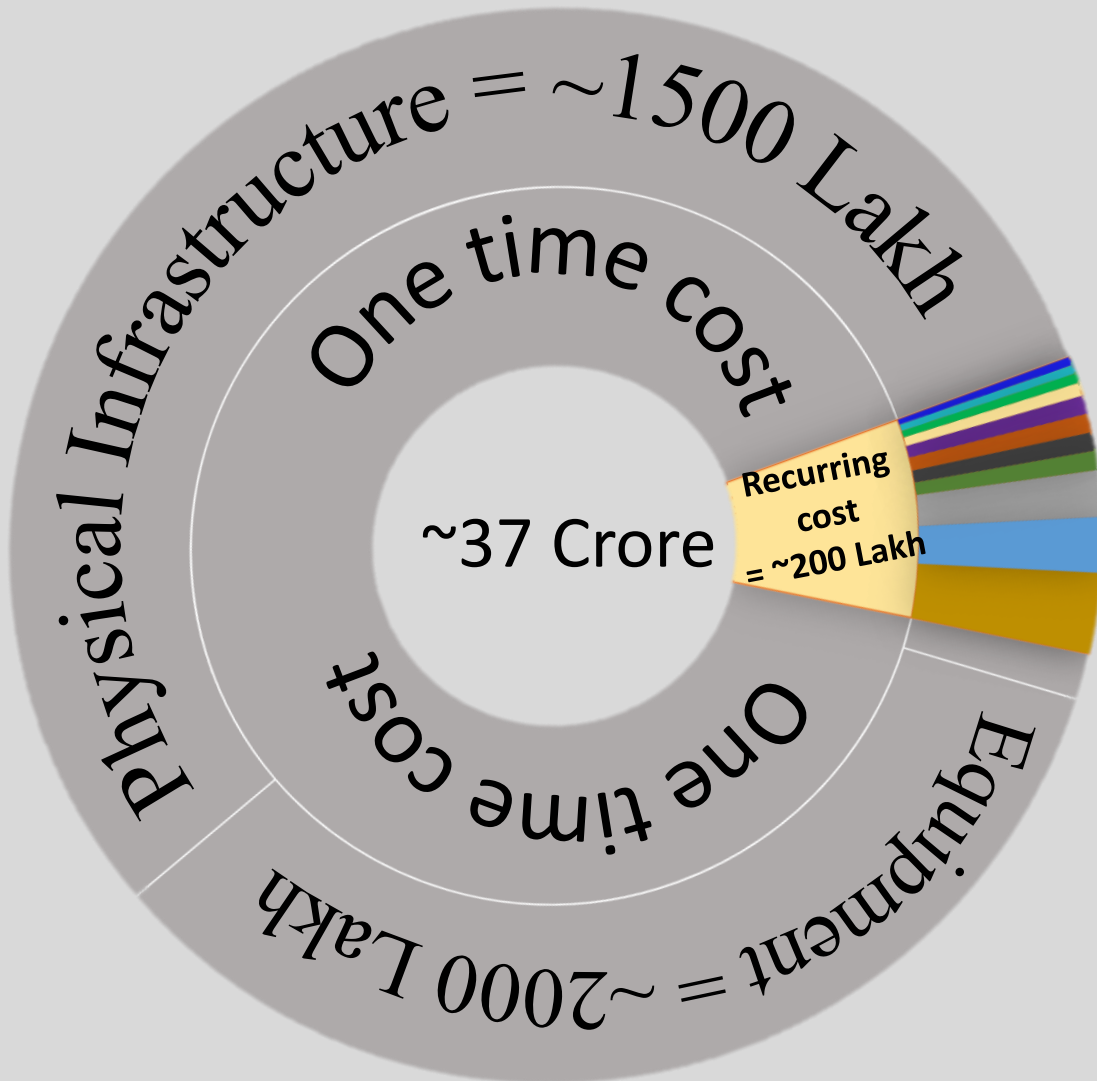
Expenditure of Hub Colleges Kashmir



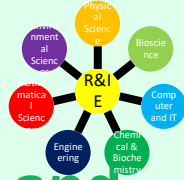
Tentative Budget for a Building Research and Innovation Centre in One Division



Recurring cost = ~200 Lakh/Year

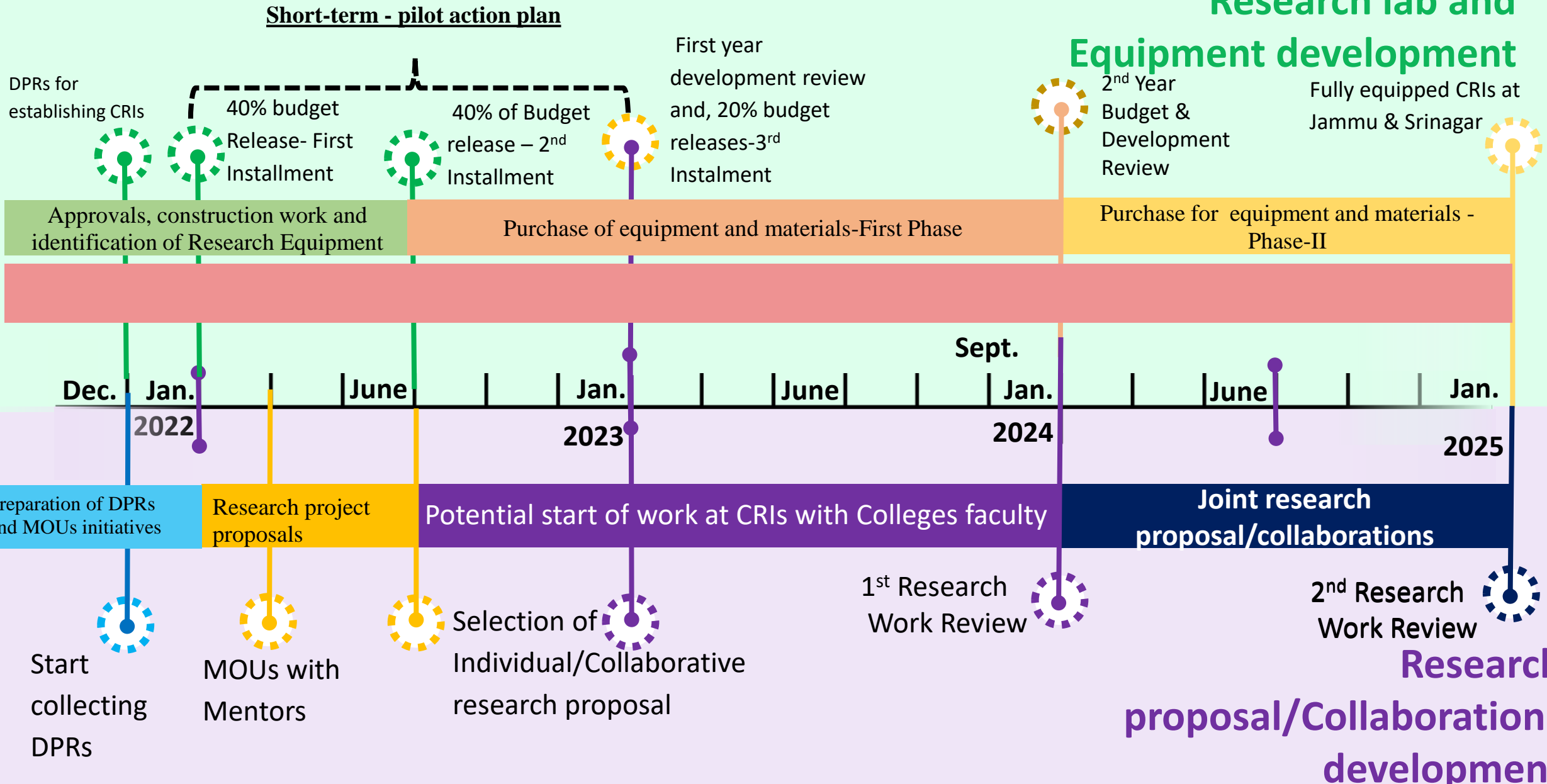


Development Road Map (5 Years-Plan of Action)

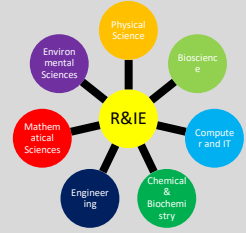


Research lab and

Equipment development



Challenges to Mitigate...



- **Administrative flow**

- Framing of Administrative and Operational teams with identified roles
- Operational Policy Framework for R&IE
- DPRs framing, collection of estimates from construction agencies, Administrative Approvals and Technical Sanctions, e-tending, start of construction work

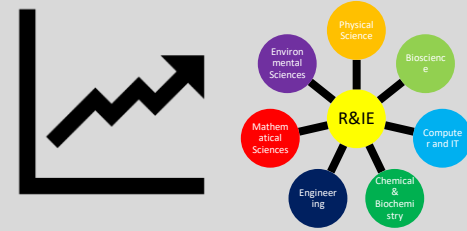
- **Allocation of Budget to colleges to initiate the Basic research**

- **Procurement of Materials Required for Research Labs**

- Include Civil Work required for Lab establishment new construction/renovation.
- Instrument indent raising, Procurement, Installation, Stock of consumables required,
- Training and Equipments Maintenance.
- Receipt of indented instruments as per specifications within allocated time frame.

- **Motivation to sustain Mentor – Mentee relations**

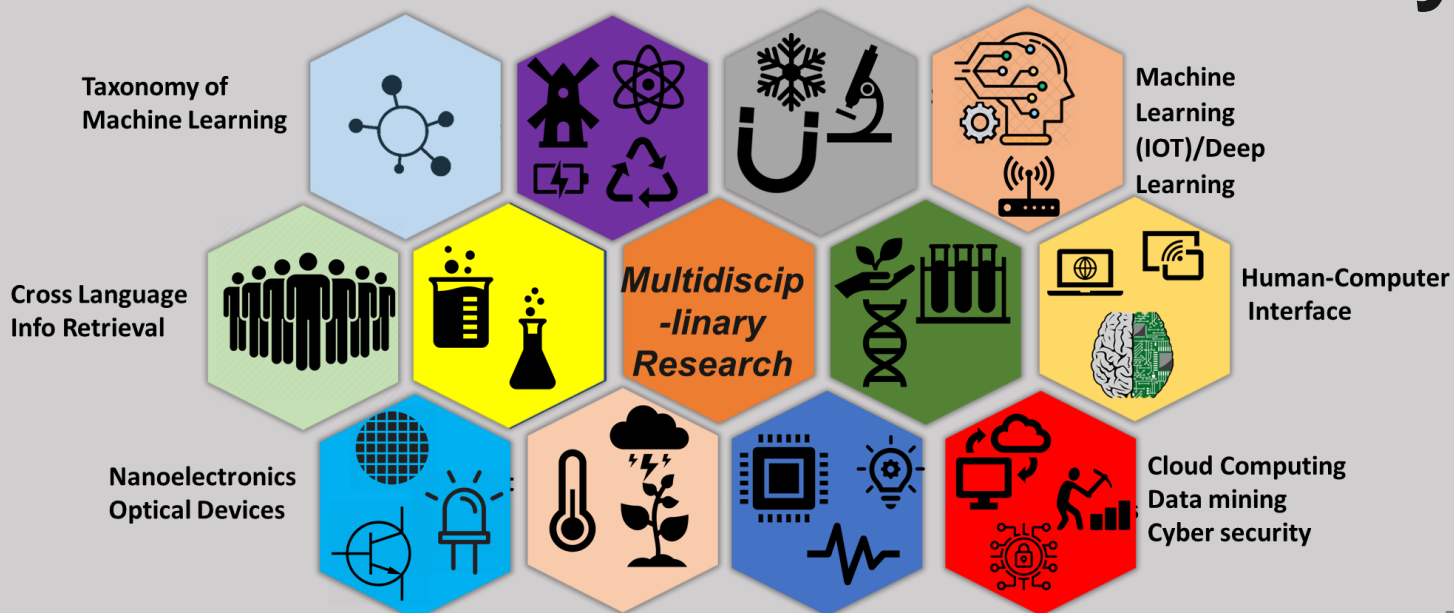
- Universities and technical intuitions need to response positively



Potential Research Outcomes

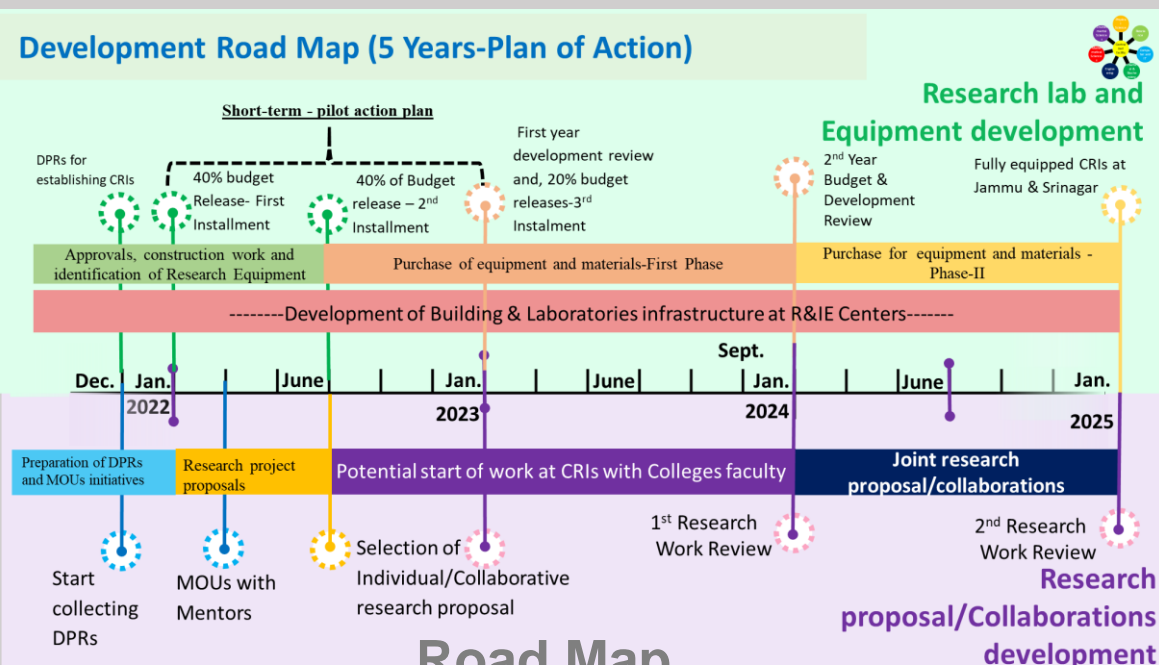
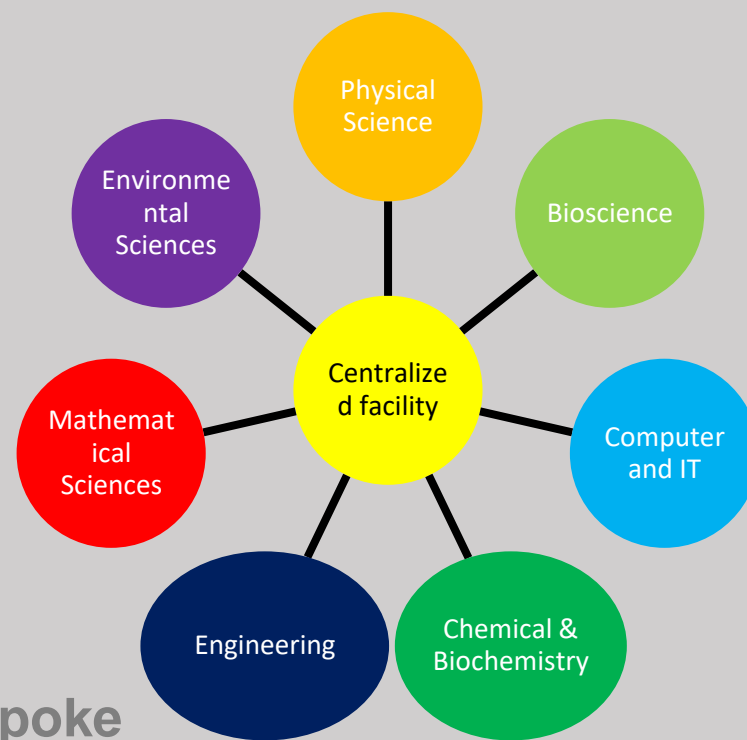
- Career Progression of College Teachers
- Developing of critical thinking in students
- Impact of Research on College's NAAC Assessment
- Dissemination of advanced interdisciplinary scientific/technological knowledge and skills among the students, researchers and faculty at college level.
- Establish a strong with local small-scale or large-scale industry to provide them technological hand to enhance their production yield and reduce the industrial waste affecting the environment.
- Validation of Research work through research publications and presentation in peer reviewed journals, conferences, and seminars/webinars of national and international repute.
- Incubation of Research results and their potential transformation from research lab to commercialization.
- Research collaborations and joint research proposals with research groups working in national laboratories (e.g., CSIR, DRDO, UGC, DST, IITs, Central/State Universities within and outside of the UT-JK) and international academic institutions.
- Later, setting a roadmap to evolve CRIs as “Centre(s) of Excellence (CoE)” in the J & K (UT).

Summary



Research Areas with Societal Thrust

Hub-Spoke



Your feedback & valuable suggestions Please

????

S. No.	Name of college	Funds received in 2020-21 (INR in Lakh)	Expenditure (INR in Lakh)	Funds proposed in 2021-22 (INR in Lakh)
1	GGM Science College, Jammu	30	27.5	35
2	GCW Parade, Jammu	115	66.71	120
3	GCW Gandhinagar, Jammu	60	29.56	8
4	MAM College, Jammu	50	40.50	20
5	Government College of Education, Jammu	50	25	25
6	SPMR College, Jammu	25	24.44	NIL

Key Features of R&IE



- CRI center/facility may be established in the Campus of GGM Science College, Jammu-One of the epicenter for all top merit students of Jammu and is also located at the most convenient place in the city of Jammu.
- Location and Space has already been identified in the college for a multi-story building for Research and Innovation/Incubation center during the year 2020-21- Capex budget sanctioned for this project.
- The estimates for the building infrastructure has already been submitted by the Principal GGM Science College to JKPC in the year 2020-21.
- Alternatively, CRI facility building can also be identified outside any College campus like IIT Jammu Paloura Campus- However, the cost of building hiring and maintenance may go equal to the recurring cost of center.
- CRI may have an independent administrative unit and policies working directly under the Administrative Head of the Department of Higher Education, JK(UT)
- The prime focus of the CRI center will be to collaborate with industry to foster research potential of Govt. colleges for working on the thrust areas of socio-economic problems.

Key Features of R&IE



- The CRI will collaborate with Universities and technical institutions of JK (UT) and other states/UTs of India, through MOUs, for collaborative research projects and work involving the exchange of research students and college faculties.
- The CRI will have its own Technology and Business Incubation Center (TBIC) and Intellectual Property Rights protection Units for technology transfer and commercialization of laboratory research.
- The CRI will also be open to national/international academic and industrial collaborations to co-develop the technology and license the co-owned technology or commercialization of the same.
- The CRI will sign MOUs with Cluster Universities of Jammu Division for joint/collaborative research programs wherein the student register with any university could perform experimental work at CRI under the proper supervision of collaborating faculties and degree shall be awarded by the parent University/Institute.
- The Researchers at CRI will be supported through administrative department for their research grants/project grants applications from Center on special grounds of raising the Research and Development Bar in JK through the dedicated efforts of HED.