Institutional Research Ecosystem and Research Management Support System

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International Journal of Research (IJR)

IJR Journal is Multidisciplinary, high impact and indexed journal for research publication. IJR is a monthly journal for research publication.

Big Leap of India in Research Publication

THE TIMES OF INDIA

India is world's 4th in research output, but ranks 9th in citations

Hemali Chhapia / TNN / Mar 23, 2023, 02:06 IST

SHARE AA FOLLOW US

- India attained 4th position in research output (publication during 2017-2022)
  - China (4.5 million)
  - USA (4.4 million)
  - UK (1.4 million)
  - India (1.3 million)

India's research output grows, but quality of papers remains a challenge

- India's research output grew by 54% vs global average of 22%
- India's citation 8.9 million
- International collaboration 19%

- Mediocrity in research and a lack of research culture in India are considered among major factors
- India ranks 9th in research citation despite producing double the global average in research output.
- “This shows that a lot of research being done is not as impactful and relevant as it is expected to be. It is a matter of concern as the purpose of research is to contribute to the existing pool of knowledge and benefit the society at large,”

Status of Medical Research in India

J Assoc Physicians India. 2019 Apr;67(4):71-73.

Medical Research in Medical College in India: Current Scenario and Ways to Improve it

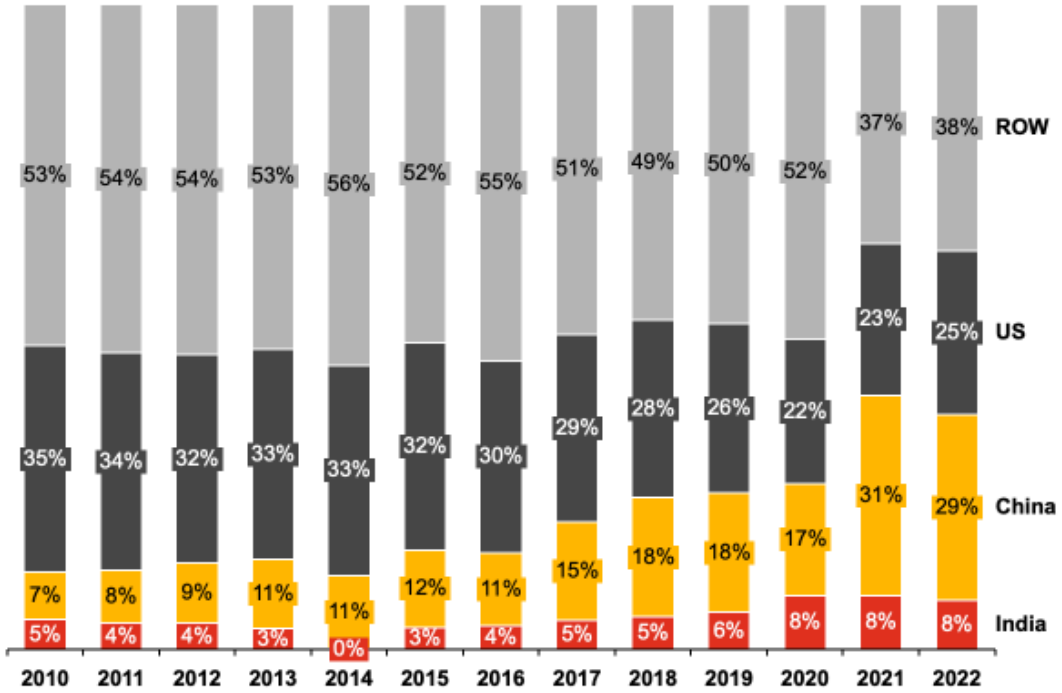
Kanjaksha Ghosh [1], Kinjalka Ghosh [2]

- Articles published 1990's onwards.
- 6-10 medical colleges (out of 450) publish >60% of research papers in indexed journals.
- Reasons of very little or poor quality research in medical colleges.
  - Poor mentorship
  - Severe patients load
  - Lack of research interest
  - Lack of funding and
  - Lack of multicentric co-ordinated research activity
  - Lack of incentive for research…….

Despite India's position as the second most populous country, the global clinical trial participation has been significantly low as compared to other countries

Key takeaway: While India's contribution to the global clinical trials has been ~4% in the last decade, top 20 pharma activity has increased by 10% since 2013

Trial Initiations, Top 20 Pharma Sponsored Trials
(India, China, US; 2010-2022)



1. Contribution to the global clinical trials

4% Despite of its large population, India's contribution to the global clinical trials has averaged at ~4% per year from 2010 to 2022

10% Top 20 pharma sponsored trials in India has increased by 10% since 2013 following multiple regulatory reforms

2. Trial participation

3% Of all the trial participants globally, India's contribution is only 3% as compared to 30% in the US

3. Industry sponsored trials

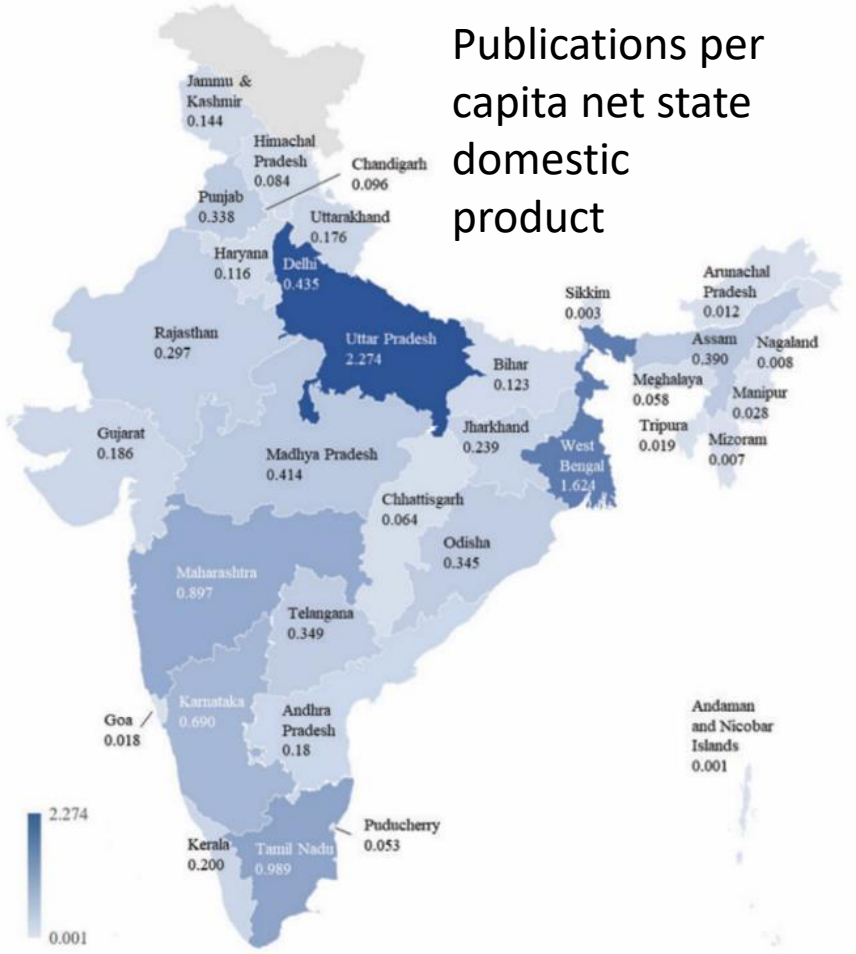
Top 5 Amongst the top 20 pharma, AstraZeneca, Novartis, Eli Lilly, Pfizer, and J&J are the top sponsors of clinical trials in India

Clinical Trial Opportunities in India, Feb 2023, PWC

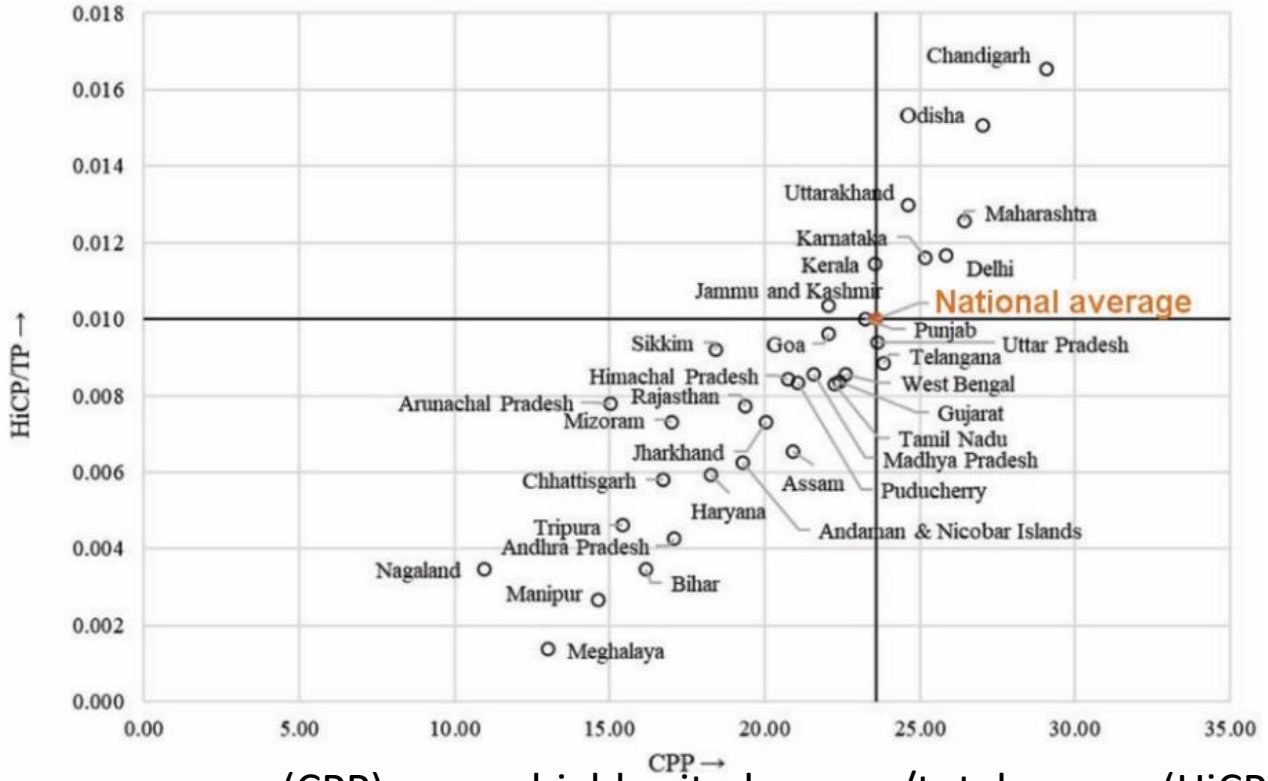
Mapping the research output from Indian states

*Anurag Kanaujia, Abhirup Nandy, Prashasti Singh and Vivek Kumar Singh**

2001-2020



Publications per capita net state domestic product



Citations per paper (CPP) versus highly cited papers/total papers (HiCP/TP)

CURRENT SCIENCE, 2023; 124 (11): 1245-1255

The National Medical Journal of India
on the frontline of Indian Medicine

Editorial
35(3);129-131
doi:10.25259/NMJI-35-3-129

Medical research in India: Fit and fine or frail and vulnerable?

N.J. GOGTAY

Indian Journal of RHEUMATOLOGY

PERSPECTIVE

Improving Research Milieu in the Medical Colleges in India

Challenges and Solutions

Batmanabane, Gitanjali; Maiti, Rituparna[1]

Indian Journal of Rheumatology 17(Suppl 2):p S287-S291, December 2022. | ***DOI:*** 10.4103/0973-3698.364669

Make India leading power in medical research, health care: President

"It was the hard work of doctors, nurses and other medical professionals which ensured India could vaccinate such a huge population speedily against the disease," she said

President Droupadi Murmu

Perspectives in Clinical Research

OPINION

Does India need more medical scientists?

Sharma, Suhasini

Perspectives in Clinical Research 10(3):p 106-107, Jul–Sep 2019. | ***DOI:*** 10.4103/picr.PICR_114_18

Medical Institutions in India

Purposes

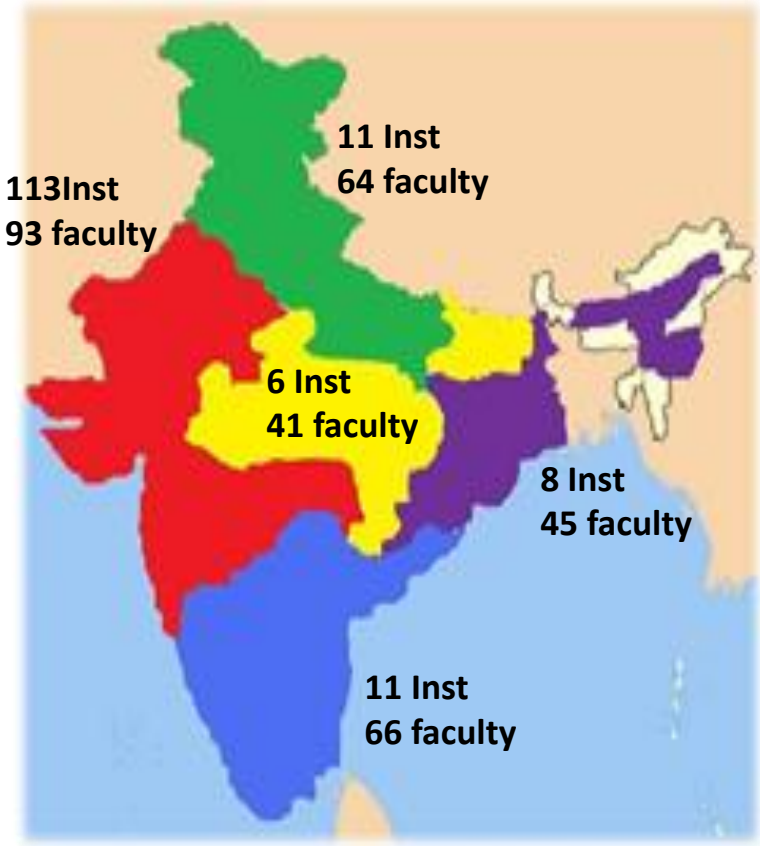
- Health care
- Education and innovations in education
- **Research**
- Quality
- Contribution to public health and policy

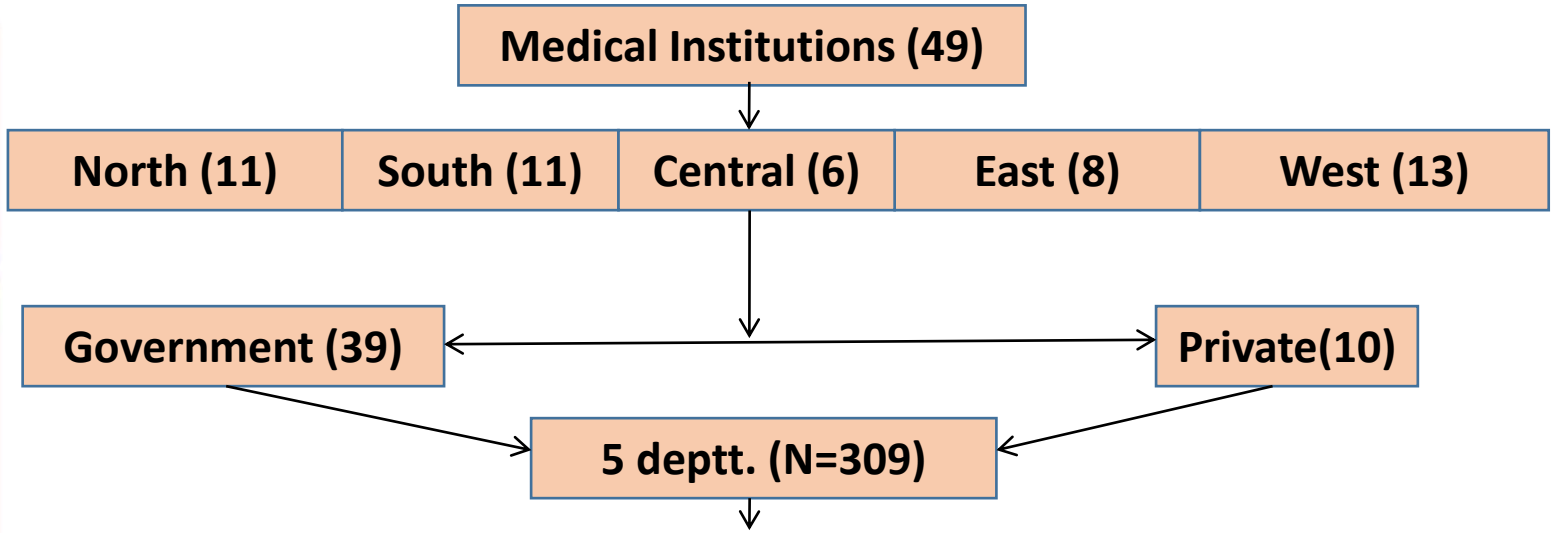
राष्ट्रीय आयुर्विज्ञान आयोग
NATIONAL MEDICAL COMMISSION

Aim of the National Medical Commission

(i) improve access to quality & affordable medical education;
(ii) ensure availability of adequate & high quality medical professionals in all parts of the country;
(iii) promote equitable & universal healthcare that encourages community health perspective & makes services of medical professionals accessible to all citizens;
(iv) encourages medical professionals to adopt latest medical research in their work and to **contribute to research**;
(v) objectively assess medical institutions periodically in a transparent manner;
(vi) maintain a medical register for India;
(vii) enforce high ethical standards in all aspects of medical services;
(viii) have an effective grievance redressal mechanism.

Research Capacity of Medical College Faculty in India (Maternal, Neonatal, Child Health and Nutrition) (INCLEN, 2010-11)





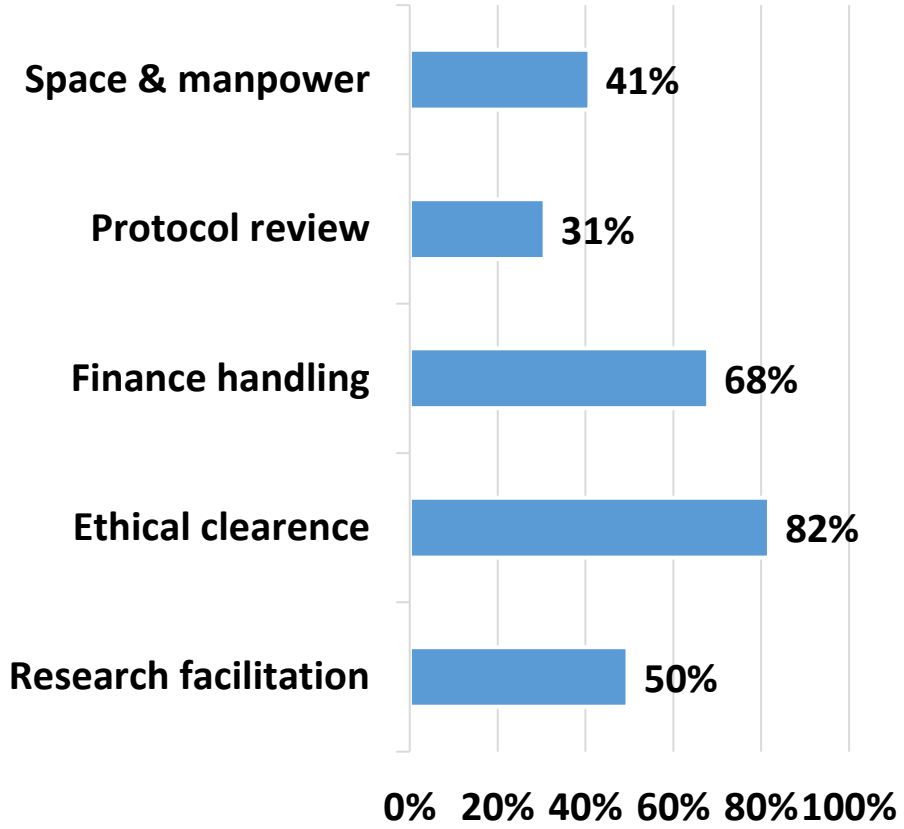
- Faculty member from Pediatrics, Obstetrics/Gynecology, Community Medicine, Neonatology and Nutrition
- 1 senior and 1 junior faculty member per department; 1 each from neonatology & Nutrition

Research support in the institutions

Availability of Research Cell/Unit

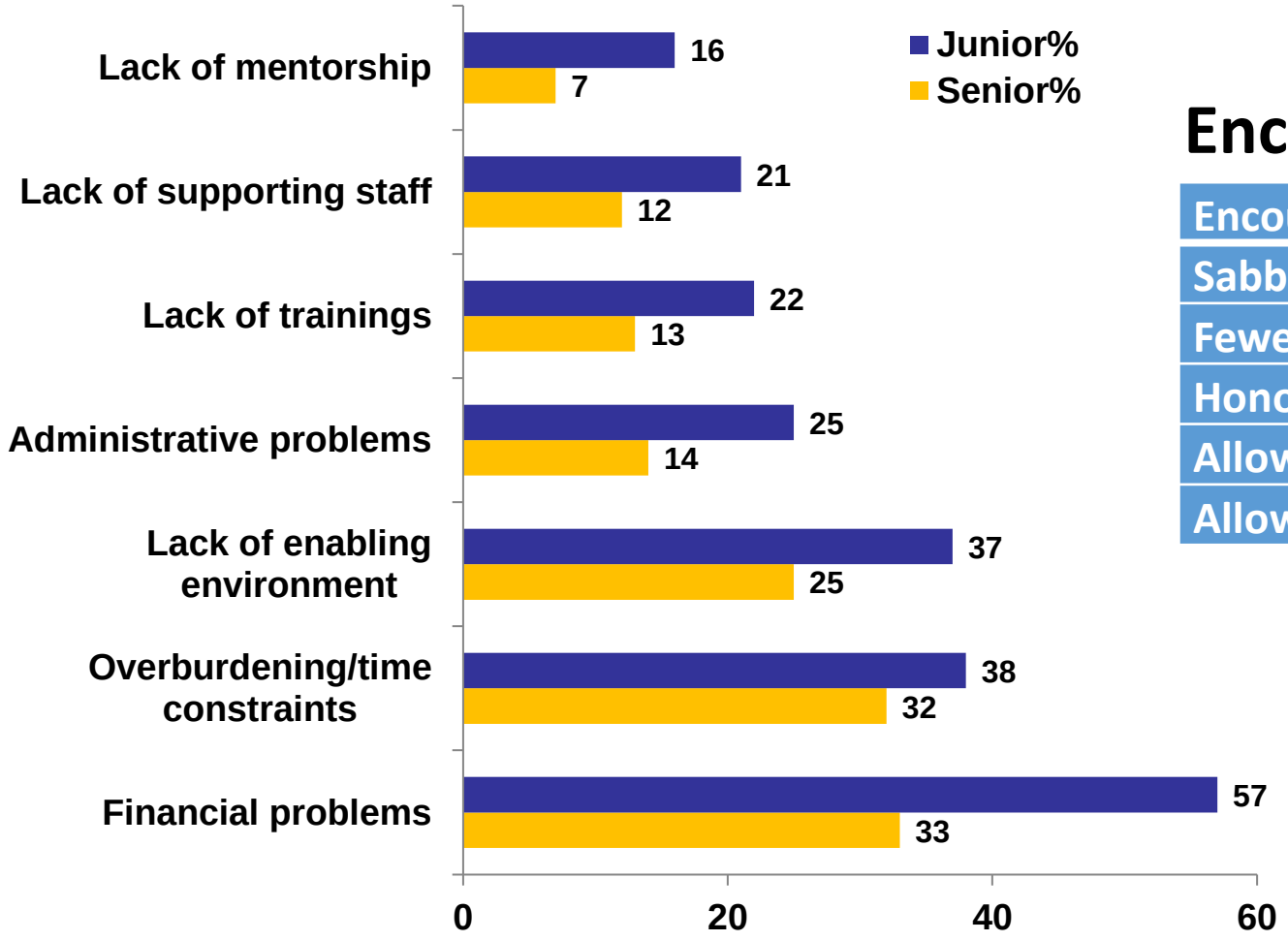
Zone	Govt.	Pvt.	Pooled
North	7/10 (70%)	1/1 (100%)	8/11 (72.7%)
South	5/7 (71.4%)	3/4 (75%)	8/11 (72.7%)
Central	1/5 (20%)	0/1 (0%)	1/6 (16.7%)
East	0/7 (0%)	0/1 (0%)	0/8 (0%)
West	5/10 (50%)	3/3 (100%)	8/13 (61.5%)
Total	18/39 (46.2%)	7/10 (70%)	25/49 (51%)

Perceived activities of Research Cell



INCLEN study on Research Capacity of Medical College Faculty in India (2010-11)

Perceived barriers for pursing research

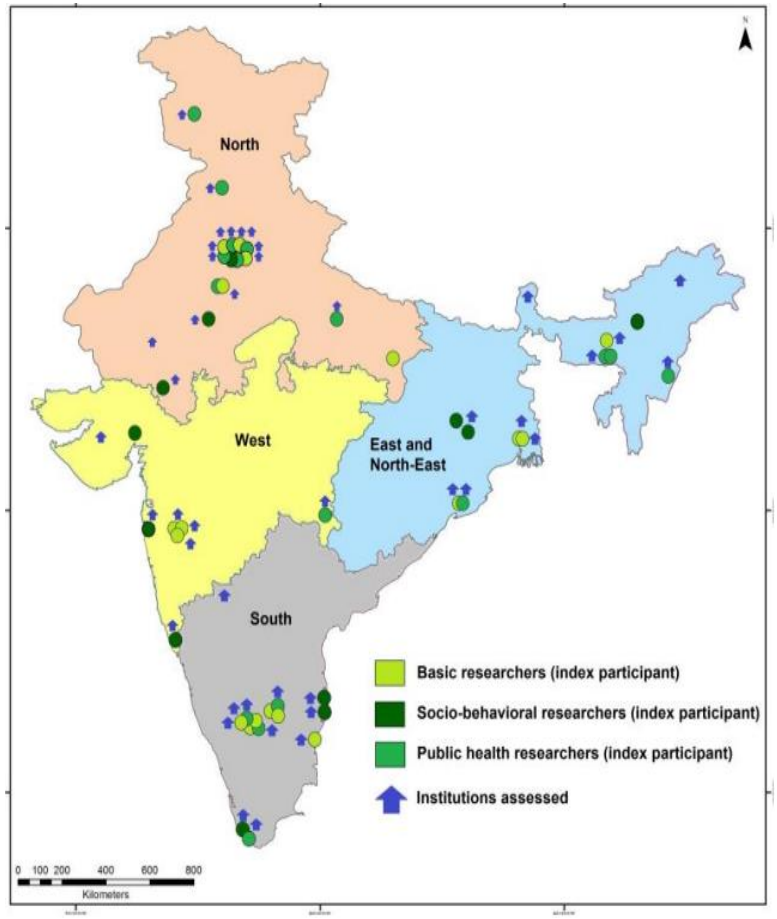


Encouragement for research

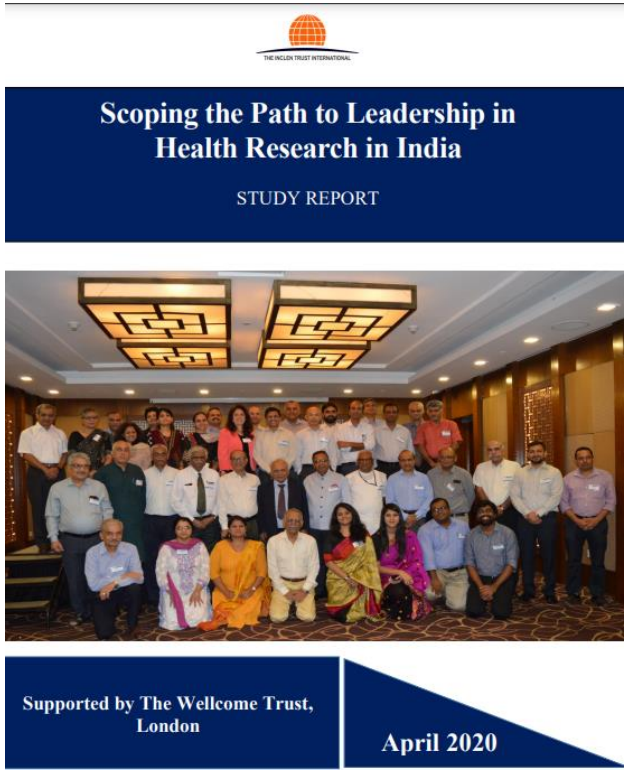
Encouragement	Govt.	Pvt.	Pooled
Sabbatical/leave	89.7%	30%	77.6%
Fewer clinical/admin tasks	35.9%	40%	36.7%
Honoraria/ Incentive	38.5%	50%	40.8%
Allow for national conf.	71.8%	20%	61.2%
Allow for international conf.	48.7%	30%	44.5%

INCLEN study on Research Capacity of Medical College Faculty in India (2010-11)

Scoping the Path to Leadership in Health Research in India (2020)

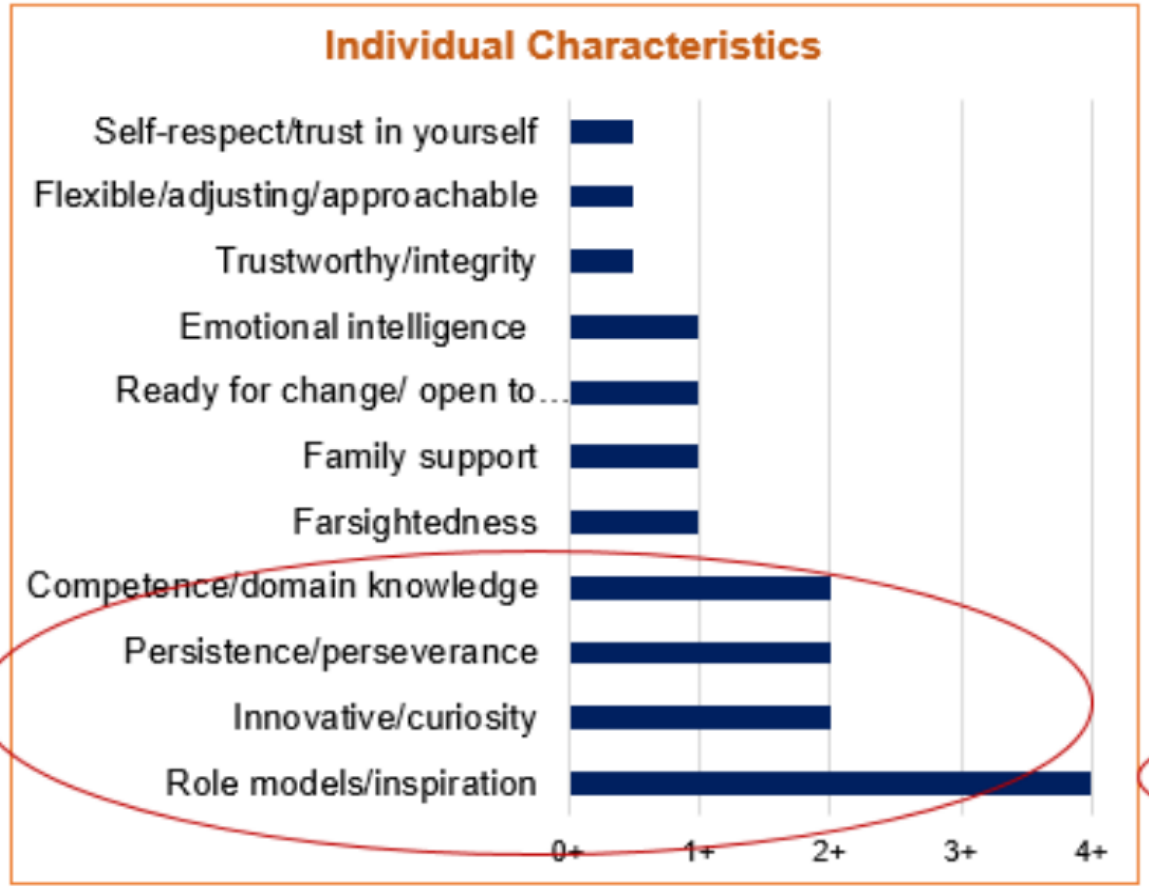


- 43 institutions
- 283 researchers, department heads, research administrators
- 6 international researchers working in India



Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

Factors contributing to evolution as a ‘researcher’



Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

Institutional Research Ecosystem- Opinion of Researchers

- *"Systems are not in place, life for researchers is not smooth in our country."*

- *"A research conducive infrastructure in terms of manpower support and financial management support, all that needs to be specifically inclined towards research. Clubbing research management with the general administration does not make it work."*

Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

Perceptions of International Researchers on research ecosystem in India

- While collaborating, they assess the potential investigator and the research institute suitability.
  - *“It is not just the enquiry of the person; it is the enquiry of the ecosystem in which they have to perform and how the systems are willing to change…….”*

- The bureaucratic, administrative and financial procedures were perceived to be challenging. Procurement processes, though ethical and strict on one hand, were considered cumbersome and time consuming.
  - *“Doing research in India is hard; it is hard anywhere and in India it is doubly hard!.”*

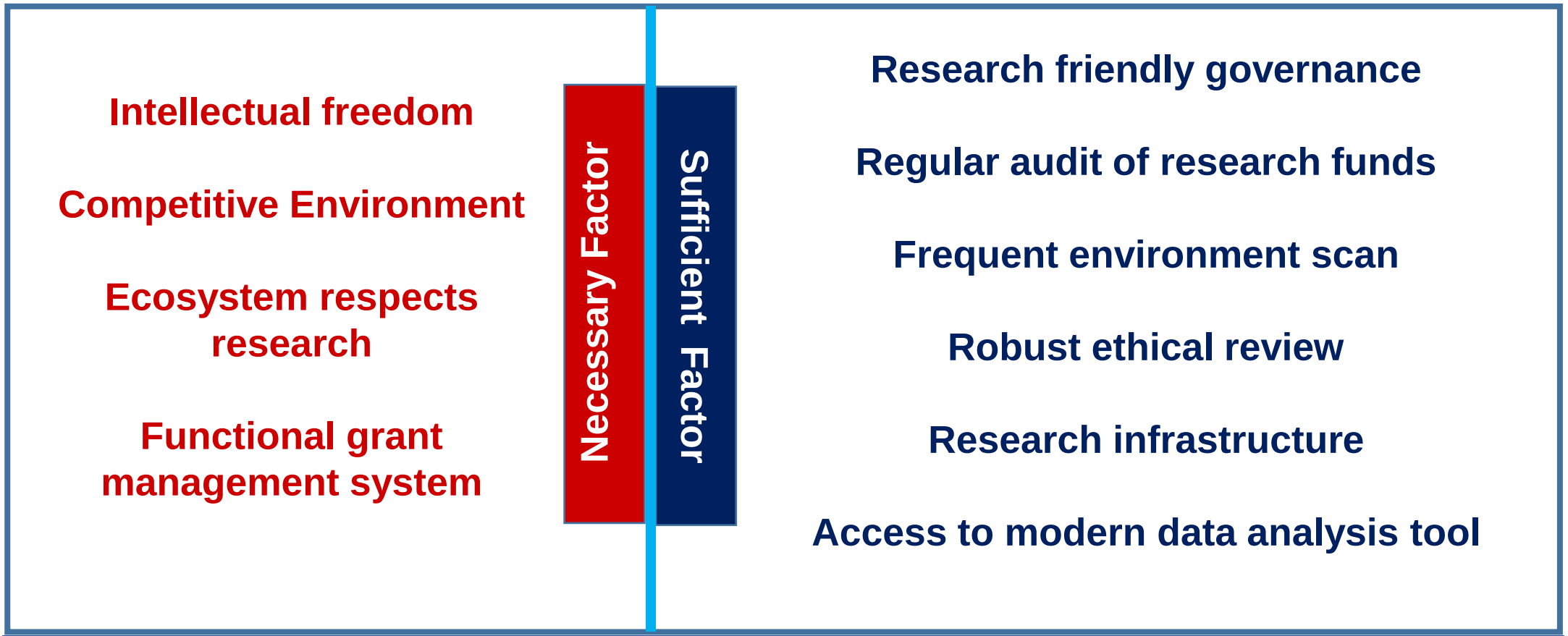
Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

Research ecosystem of high & low performing institutions

Parameter	High performing institute	Low performing institute
Institutional ecosystem respects research	92.3%	50%
Research infrastructure	89.7%	25%
Functional research cell for grant management	92.3%	50%
Audit of research grants is part of the institute audit process	87.2%	50%
Research/grant opportunity search/notification	71.8%	25%

Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

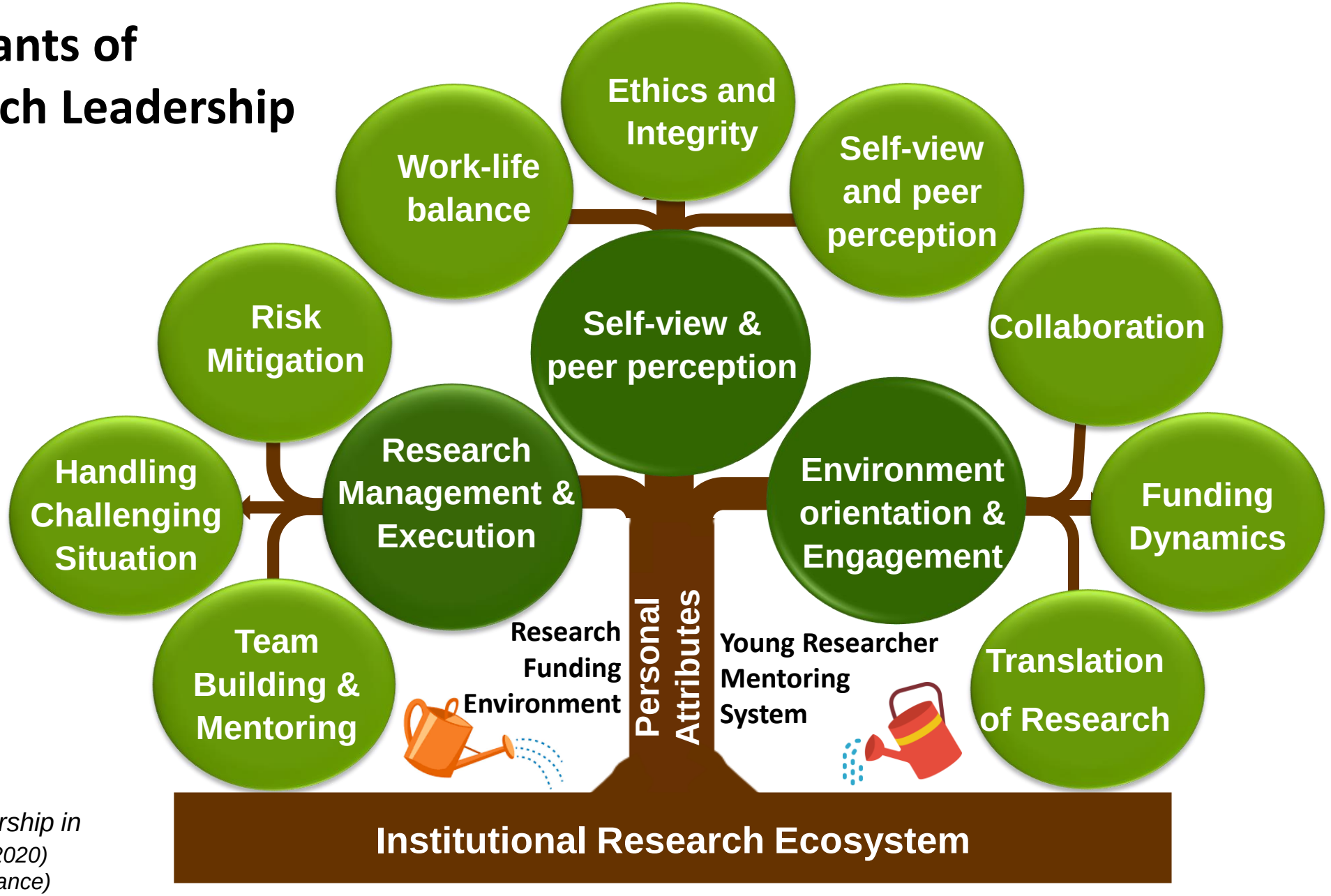
Attributes of a supportive institutional ecosystem for research*



***Primary responsibility lies with Institutional authorities and policy making bodies. Researchers can at best influence and augment their functioning.**

Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

The determinants of Health Research Leadership in India



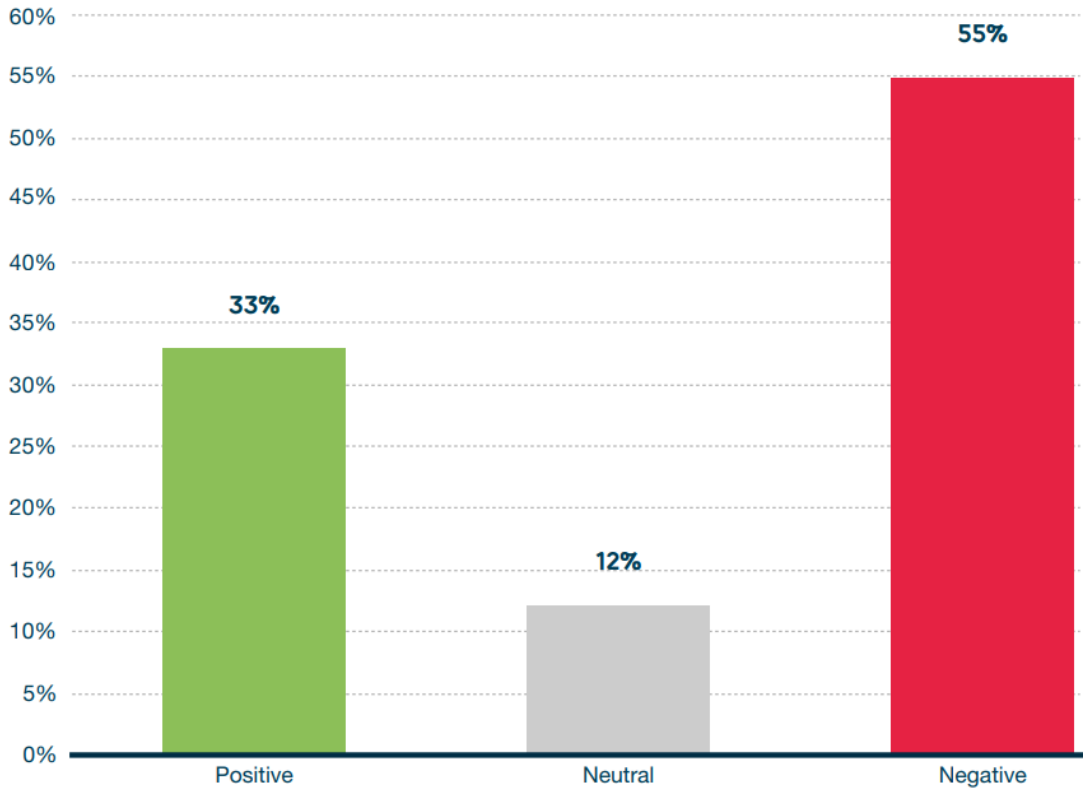
Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

THE INCLEN TRUST

Research culture- as perceived by Researchers

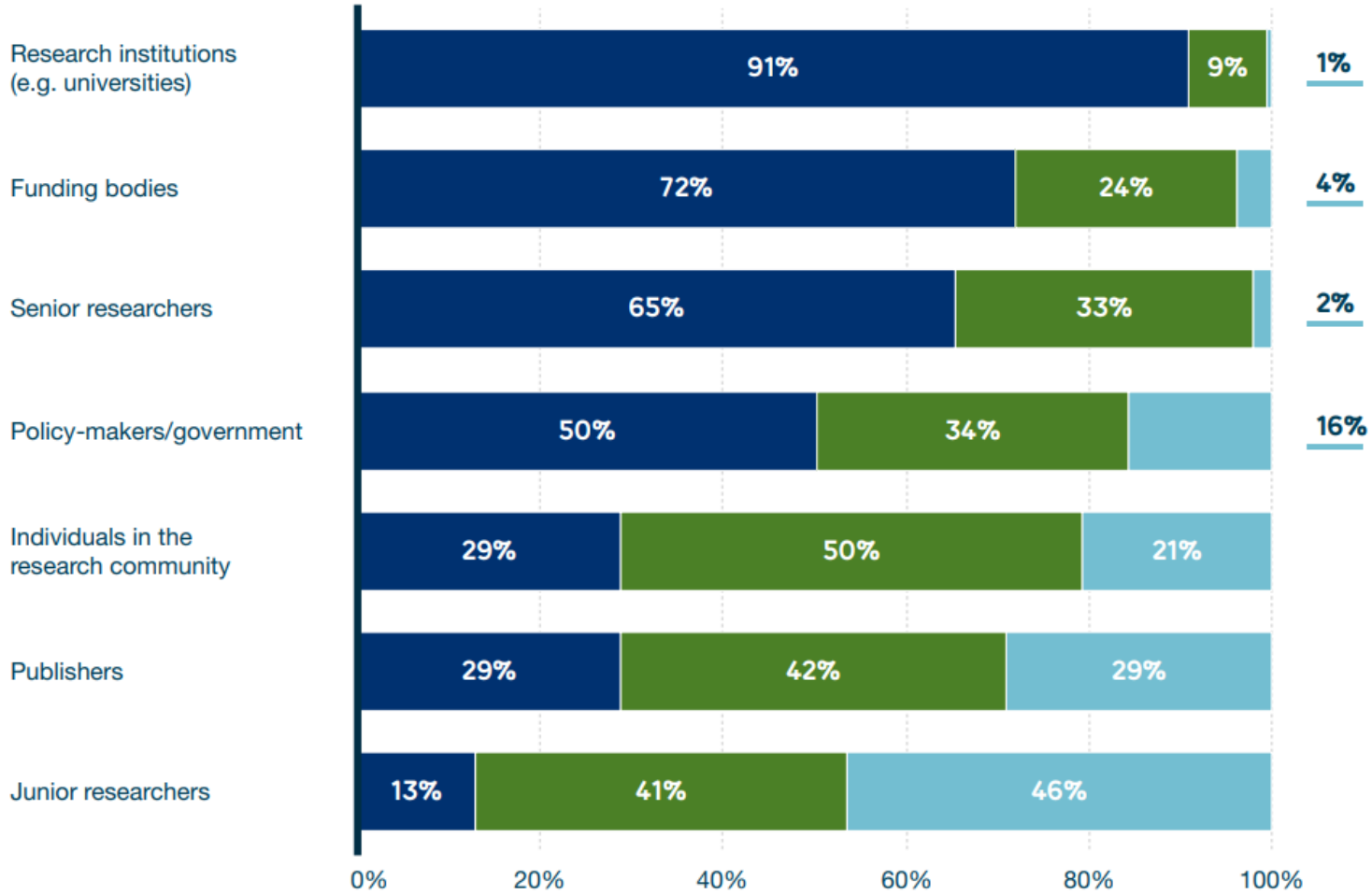
Sentiment of researchers for research culture

(n= 2839, research community, UK & international)



What Researchers Think about the Culture they work in, Wellcome Trust, 2020

Research culture responsibility: Researcher's perspective



(n= 4110, research community, UK and international)

What Researchers Think about the Culture they work in, Wellcome Trust, 2020

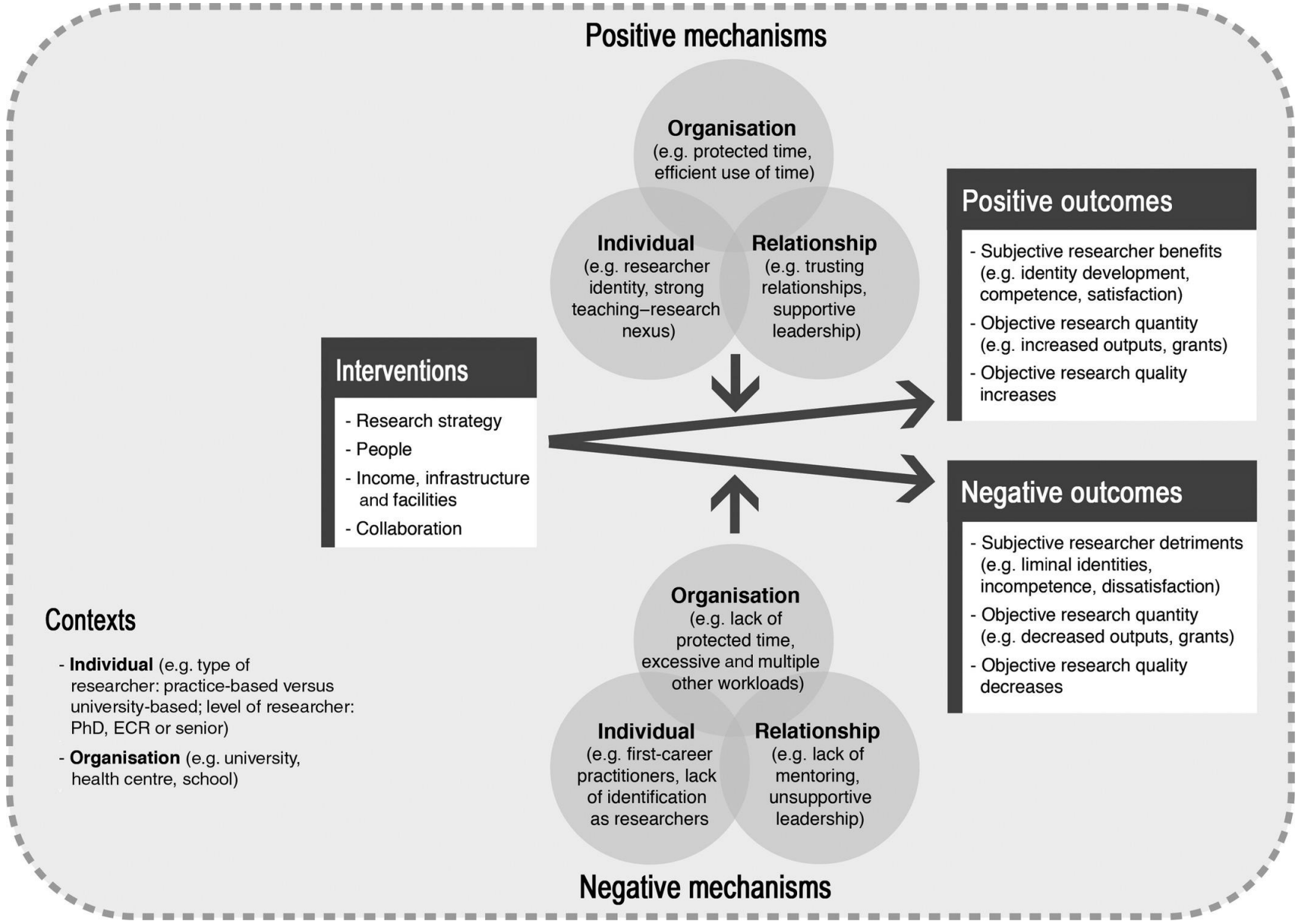
Research as Culture

What's wrong with research culture?

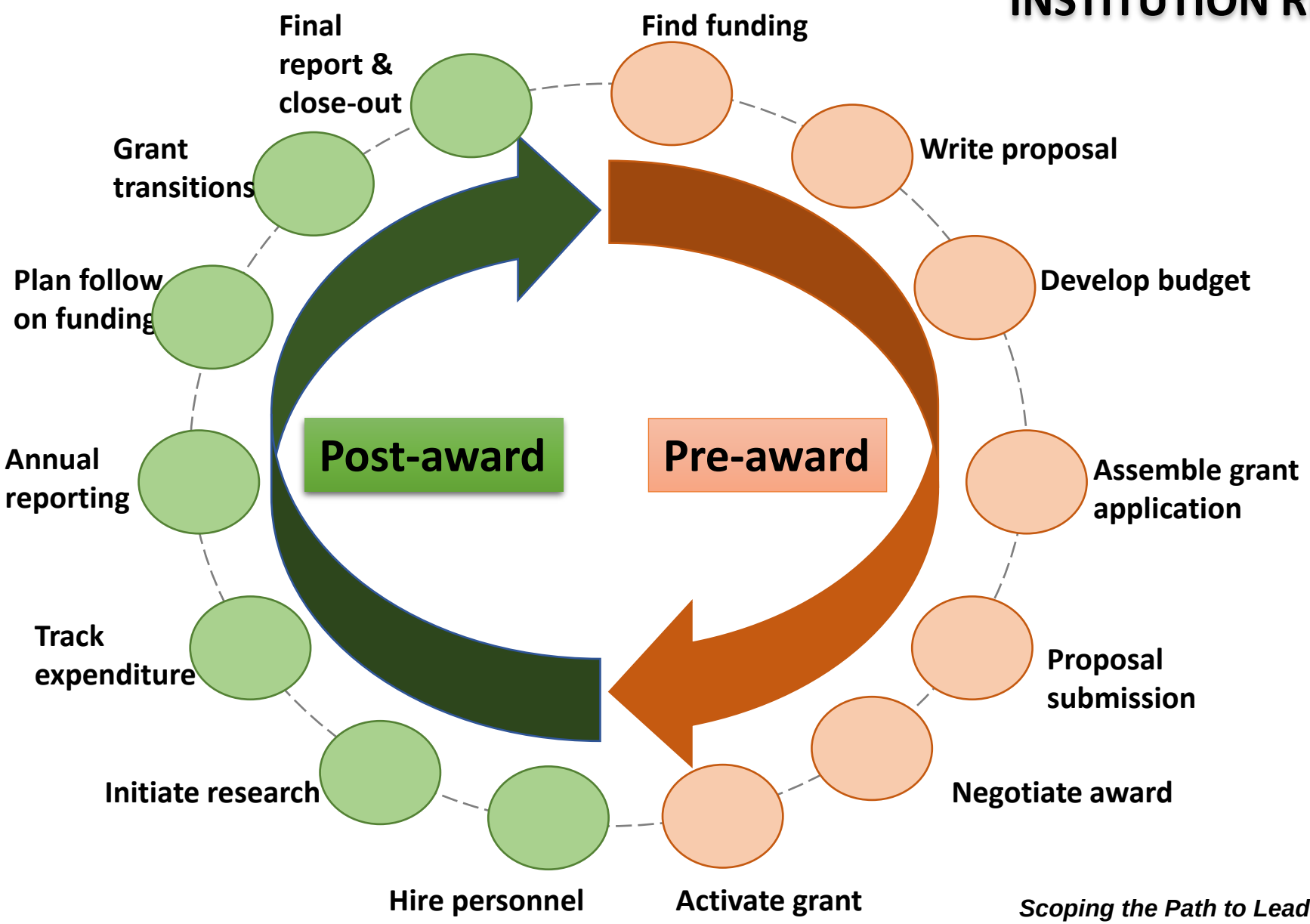
What really matters for successful research environments

Key cross-cutting mechanisms: time, identity and relationships

Ajjawi R. Medical Education 2018: 52: 936–950



INSTITUTION RESEARCH MANAGEMENT SUPPORT

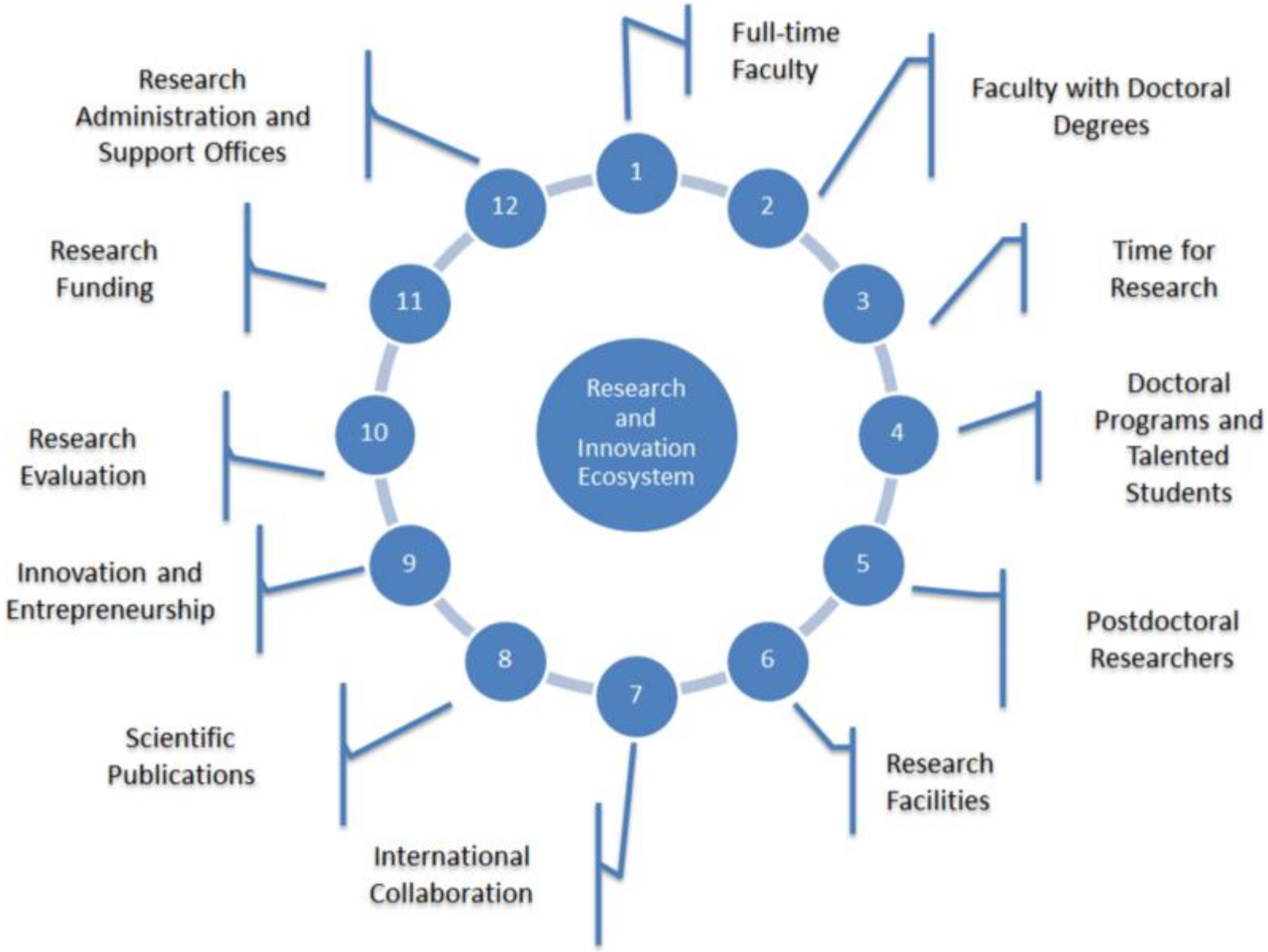


- Partnership building
- Pre-award support: funding opportunities, grants advice, funder outreach, due-diligence on papers, award negotiation
- Ethics Secretariat
- IP Office
- Program Management
- Science communication and public engagement
- Post-award grant management

Scoping the Path to Leadership in Health Research in India (2020)
(Funded by Wellcome-DBT Alliance)

Research Ecosystem

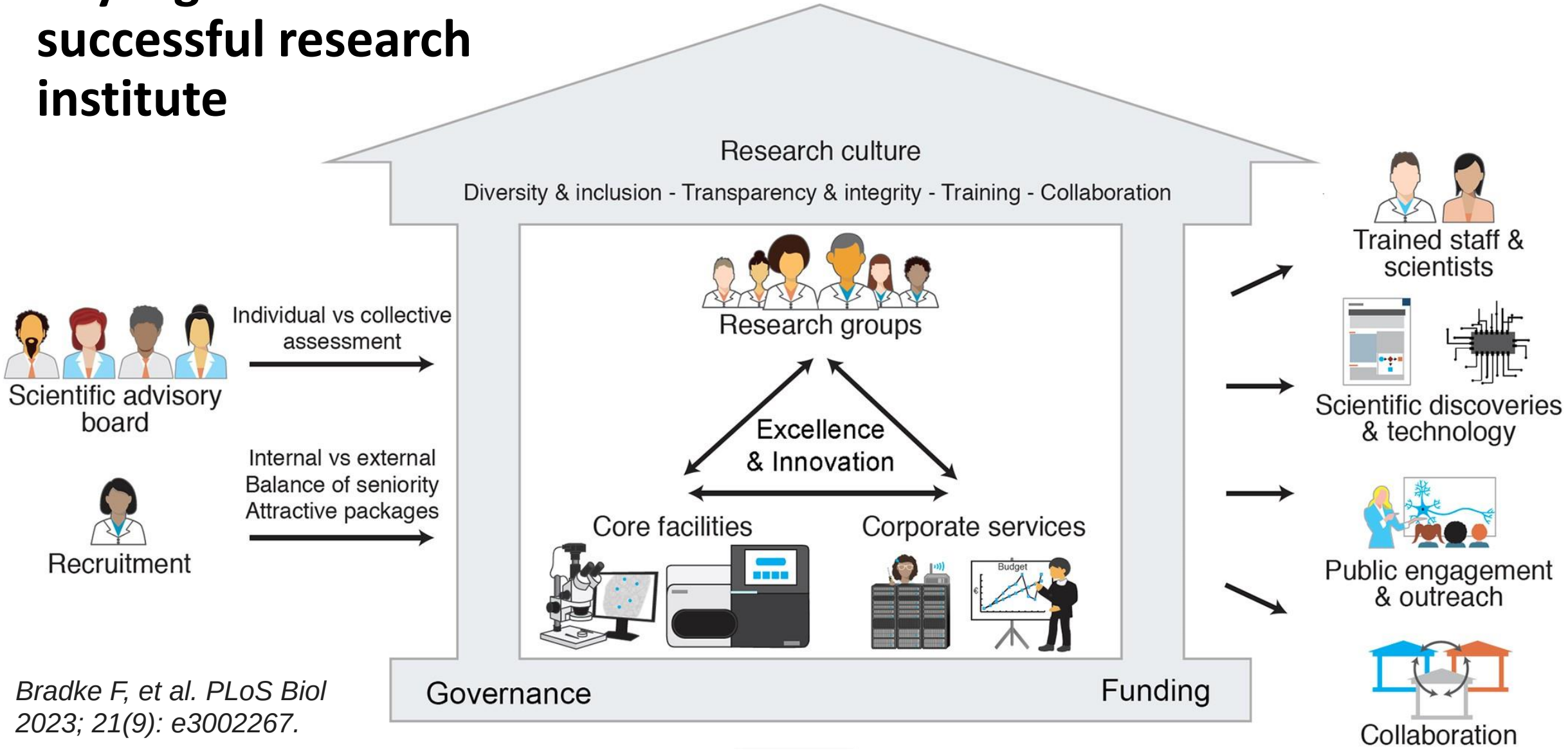
It is much more than the Research Cell or Unit.



Key attributes of a Successful Research Institute

Organisational component	Key ingredients	
Funding review process	• Review designed to promote collaboration & inter-disciplinarity	• Transparent and clear process
Administrative services	• Proactive service mind-set • Clear two way communication	• Fast turn around and agility • Transparency in performance
Core facilities & services	• Sharing of facilities/equipment • Data sharing and access	• Fair governance • Commitment for training opportunity
Training	• Provision of training at all levels • Holistic skill development options	• Research methods and cutting technology
Recruitment	• Transparency and merit based	• Long term and short term considerations
Institute culture	• Transparency in management • Promote collaboration and open research culture • Commitment from the top and buy-in from senior members	• Monitor and manage negative behaviours • Support needs of diverse groups • Monitor the research performance

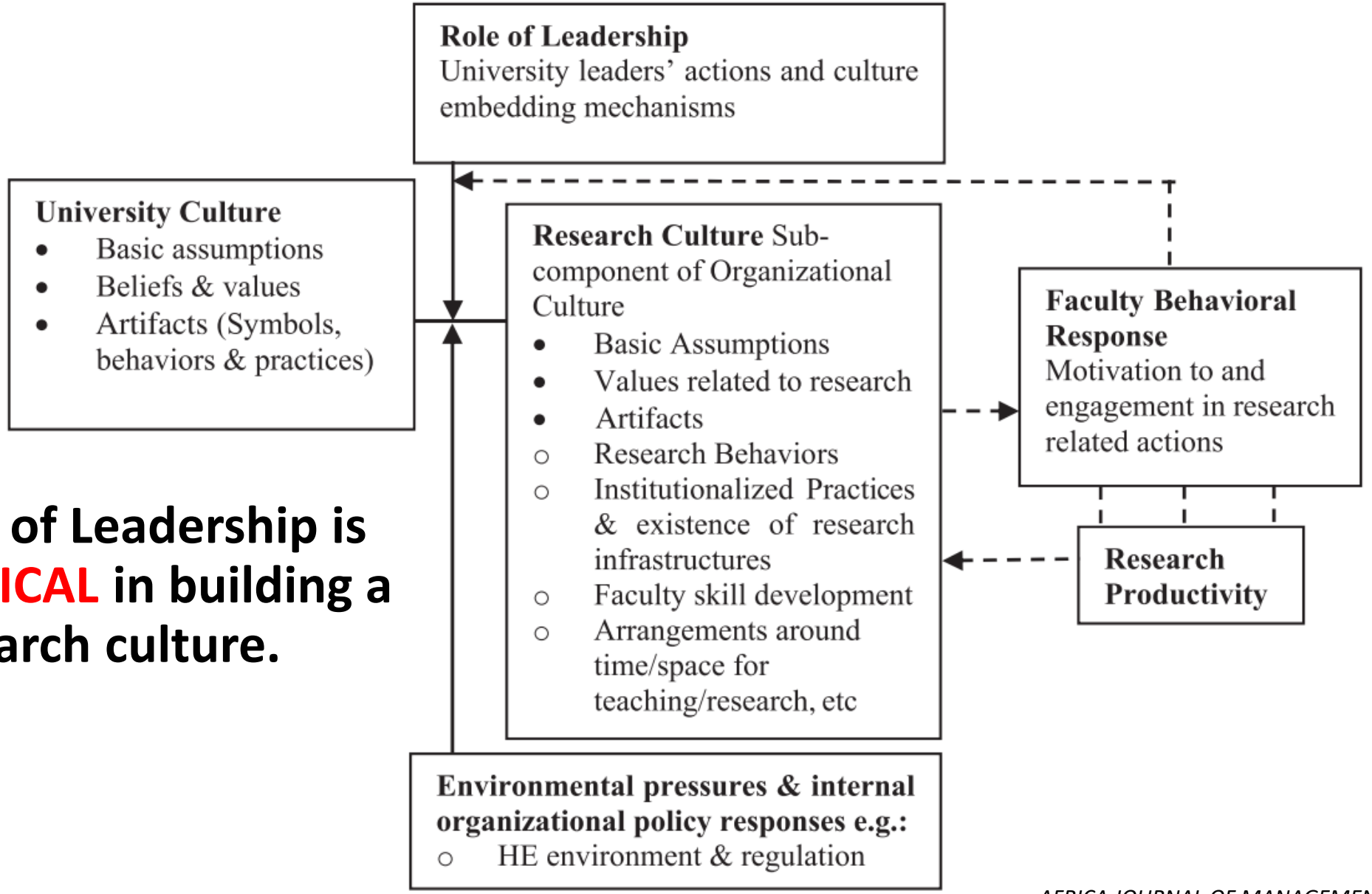
Key ingredients for a successful research institute



Bradke F, et al. PLoS Biol 2023; 21(9): e3002267.

Key considerations for a successful research institute

- **Listen, inside and out:** effective feedback mechanisms, both internal and external, to continuously evolve and optimize organization and science.
- **Enable scientists to focus on the science:** effective, proactive, and communicative administration with understanding of research culture
  - Balance between the desire of scientists for freedom with the administrative necessity of managing budgets and applying regulations and governance norms
  - Administrative staff- needs speed, flexibility, rapid and nimble responses, SOP clarity
  - Bottom-up, proactive administration culture + top-down organizational strategy
- **Promote "plug and play" research:** Effective, agile & operational core facilities, infrastructure, with state-of-the-art equipment
- **Build a holistic research environment:** supportive research culture that empowers scientists to develop and realize their potential & promotes creativity
  - Capacity building, skill retention, technology transfer & sharing, inclusivity



Role of Leadership is CRITICAL in building a research culture.

AFRICA JOURNAL OF MANAGEMENT 2022; 8 (2): 171–193

Strengths, Opportunities, Aspirations, and Results (SOAR) Analysis

Assess your institution's Research Ecosystem
(score 1-5, 1 lowest and 5 highest for each aspect)

- Administrative system efficacy
- Project management system efficacy
- Team building efforts
- Mentoring of young members
- Hard research skills
- Effective collaboration for research
- Advocacy and translation of research
- Following of funding dynamics
- Research ethics and integrity
- Research publication

Assess your own institute status and processes in terms of the attributes and note down changes you expect in your institute to make your organization/institution a research-oriented organisation.


THE CULTURE OF RESEARCH AND THE FUTURE OF THE SCIENCE SYSTEM
ANNE-MARIE CORIAT
THERE ARE CHALLENGES AROUND HOW RESEARCH IS MEASURED.
WE CAN DRIVE BEHAVIOUR TO GET THE BEST RESEARCH
THE 3 ASPECTS OF THE ECOSYSTEM
EMPLOYER
PROVIDE STRUCTURE & SPACE
PERSON / SELF
FUNDER
SIR PHILIP CAMPBELL
MAKE SURE YOU PRO
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THE REDESIGNED SYSTEM
TECH EUTOPIA
EMBRACE OPEN ACCESS!
& EMBRACE PUBLIC
COLLABORATION
MULTIDISCIPLINARY
OPENNESS
CREATIVITY
REWARD & RECOGNISE GOOD PEER REVIEW
FRAMEWORK
POST DOC
REF:
WE NEED A TRANSPARENCY PROCESS TO HELP FACULTY AND FUNDERS RECOGNISE POST DOCS
THE PROCESS OF R
N AND THE PUBLIC GOOD
MUNICATE
OLISTIC
ERSTANDING
IENCE
WE HAVE A DUTY TO SHOW THE TAX PAYER HOW THEIR MONEY IS SPENT
CURRENTLY RESEARCHERS ARE MORE GENERALIST
NOT ALL RESEARCHERS WANT TO BE PI's
THERE should be A GREATER RANGE OF RESEARCH CAREERS
HAVING PEOPLE SPECIALISE IN DIFFERENT TASKS will make for a MORE EFFICIENT Workforce
RECOGNISE that the SKILLSET CHANGES
FLEXIBLE PEOPLE WILL SUCCEED!
PEOPLE AND CAREERS