

Research as a Career: A Perspective From Young Scientists

Dr. Pradeep Kumar Dabla
MD, PGDHA, PGDBA

NABL Assessor ISO 15189:2012

Chair, IFCC Task Force for Young Scientists (TFYS)

IFCC Task Force for Young Scientists (TF-YS)

TF-YS

- International Federation of Clinical Chemistry & Laboratory Medicine (IFCC) has assembled Task Force Young Scientists (TF-YS) in 2010
- Chair: Dr. Pradeep K. Dabla

AIM

- Medical/Science graduate- <40 years of age
- To involve YS- with IFCC & Laboratory Medicine
- To face ongoing changes

OBJECTIVES

- To identify
- Networking
- Training
- Participation
- Multidisciplinary exchanges- different fields & different ideas

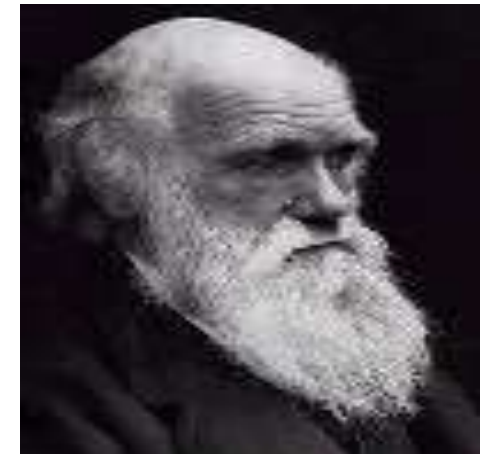
Research

It is understood as systematic, controlled, empiric and critical investigation of hypothetic statements on supposed relationships among phenomenon. It is a process in which thinking is dominant.

Carl Sagan (exobiologist looking for extraterrestrial life)

Science is composed of aggregated facts from which one can create general laws and Conclusions.

Charles Darwin



Phases of research process



Conducting research comprises a series of logical sequential steps: planning, searching, discovery, reflection, synthesis, revision, and learning.

Outline

- Career options for budding medical biochemists
- Why choose a research career?
 - Rewards & challenges
- What does it take to be a researcher?
- Opportunities in India
- Opportunities in abroad
- Final word...

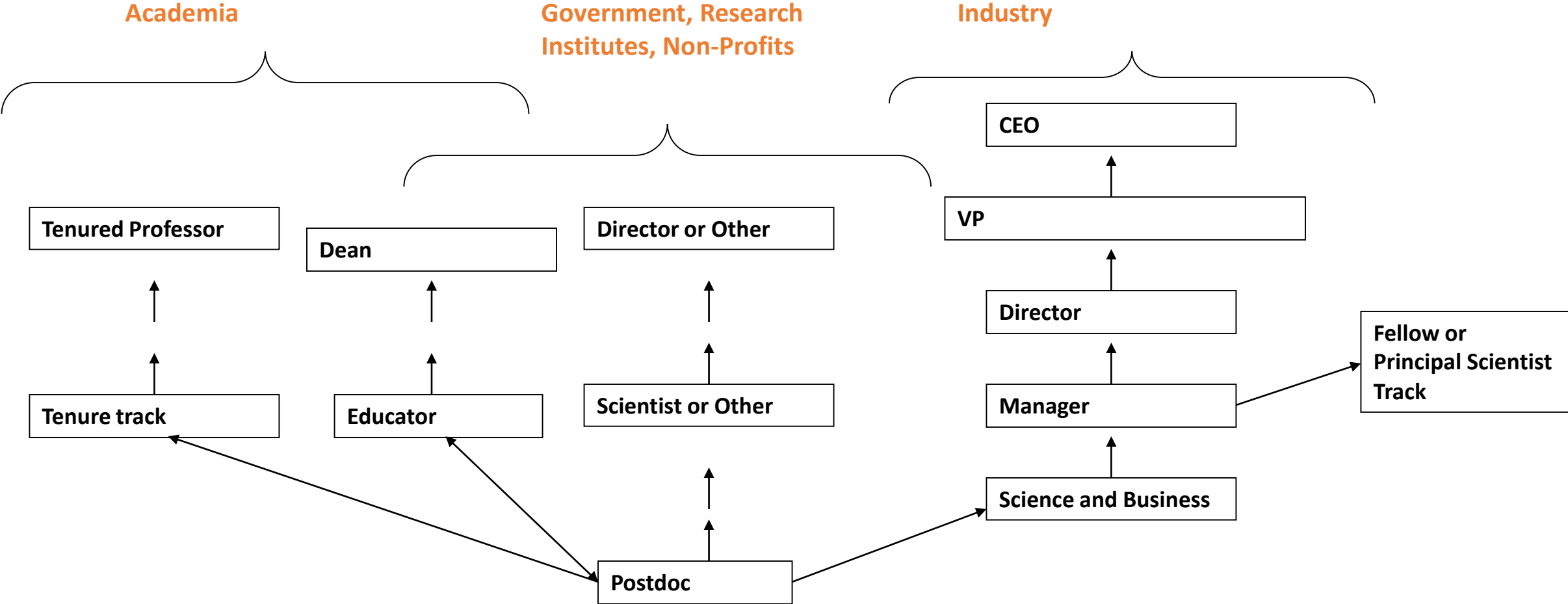
What is Clinical Biochemistry?

- Diagnostic Medicine: Patient Care
- Teaching / Academics
 - Medical Students
 - Residents
 - Graduate / Postgraduate Students
 - Fellow Physicians
- Basic and Clinical Research

What else?

- Why you chosen science?
- Where is the current market trend and where we fit in those science industries?
- What are your best competitive skills?
- What are your most important career considerations?

Career Paths



Faculty Member in Medical Institute

- Most commonly opted
- Noble profession
- Exciting and challenging
- Satisfaction of moulding
- Good salaries
- Get chance for lab practice research



Faculty Member in Medical Institute – the other side of the coin

	No.
• Long working hours	
• Promotions ?	
• Status of demand and supply	
• Choice of institute / place	
• Fierce competition	
• Exploitation in Private Institutes	
Medical colleges	381
With MD Biochemistry	201
MD Biochem seats	497
Faculty in Biochemistry	3225

Source: Medical Council of India

Why Choose a Research Career?

- Rewarding and exciting
- Work on bigger problem
- The exhilaration of putting a story together
- Expert in your field
- Standing out from the crowd
- Teaching – academic environment
- Travel
- Prestige/honor/fame



Is there a downside?

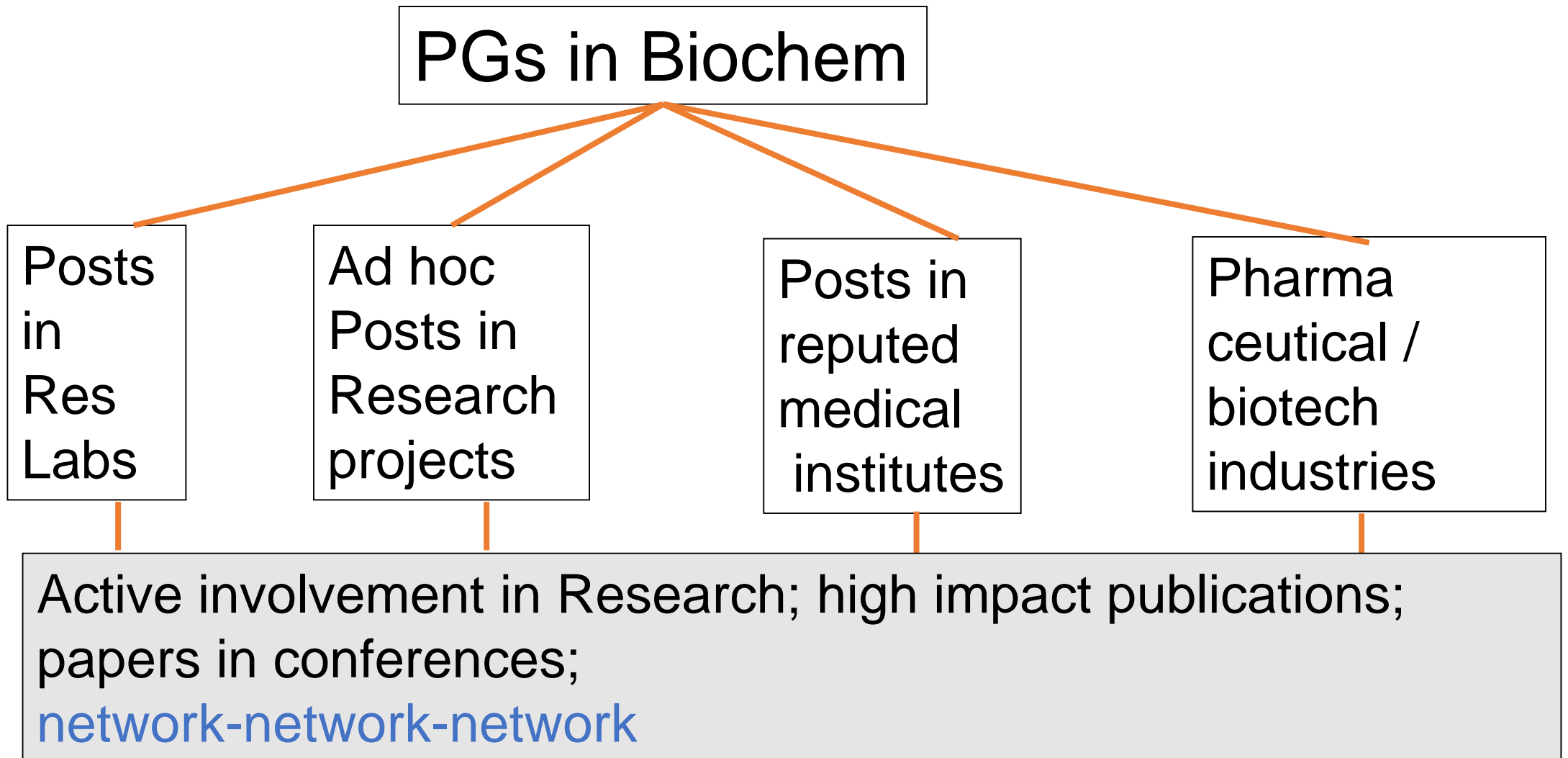
- Perception of peers
- Use it or lose it - clinical Skills
- Financial rewards
 - Low in the beginning
- Uncertainty in promotions
- Roller-coaster ride
- Publish or perish
- Funding



Research skills

- Hard work, intelligence & desire.... **also good luck**
- Target early success - a high impact paper as a MD or PhD student / junior postdoc is boon
- Take time to define in detail the research question
- Clear direction with proper order & timings
- Pause for thought
- Leading / contributing to several projects
- Raising research profile (meetings, networking, social media...)

Scope for Research Career in India



Opportunities in India: Funding agencies & relevant schemes

Department of Health Research (DHR)

- Establishment of Multi- Disciplinary Research Units in GMCs and Govt. Research Institutes
- 80 units in 2013-15; 503.85 cr (INR). Budget

Indian Council of Medical Research

- Research Associate-ships
- Postdoctoral fellowships
- Posts in ad hoc Research Projects



Opportunities in India: Funding agencies & relevant schemes

Department of Biotechnology

- Several autonomous institutes
- R & D projects
- Human genetics & genome analysis
- Bioinformatics



Department of Biotechnology
Ministry of Science & Technology,
Government of India

Department of Science and Technology

- Extra Mural Research Funding (Individual Centric)
 - Biochemistry, Molecular Biology & Microbiology
 - Health Sciences
- Start-Up Research Grant (Young Scientists) – project grant + fellowship; eligibility: PhD/ MD/MS



सत्यमेव जयते
Department of Science and Technology
Government of India

Opportunities in India: Funding agencies & relevant schemes

Council of Scientific & Industrial Research

- CSIR Research Associateships (RA)
- Senior Research Associateships (Scientists pool) in in the area of healthcare, drugs & pharmaceuticals for MD/MS/MDS



University Grants Commission

- Research Awards for faculty
- UGC - Faculty research promotion schemes (FRPS)

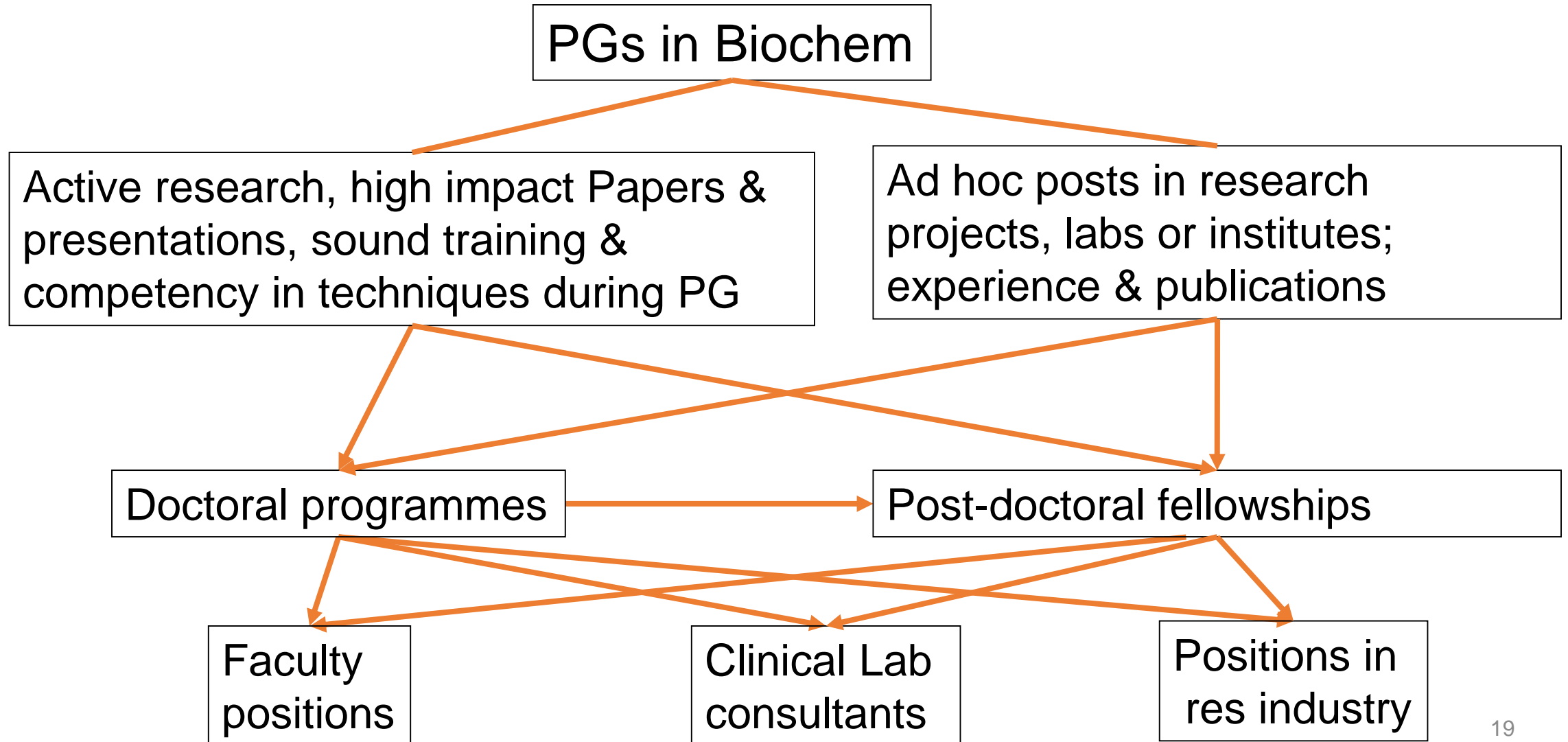


Opportunities in Abroad

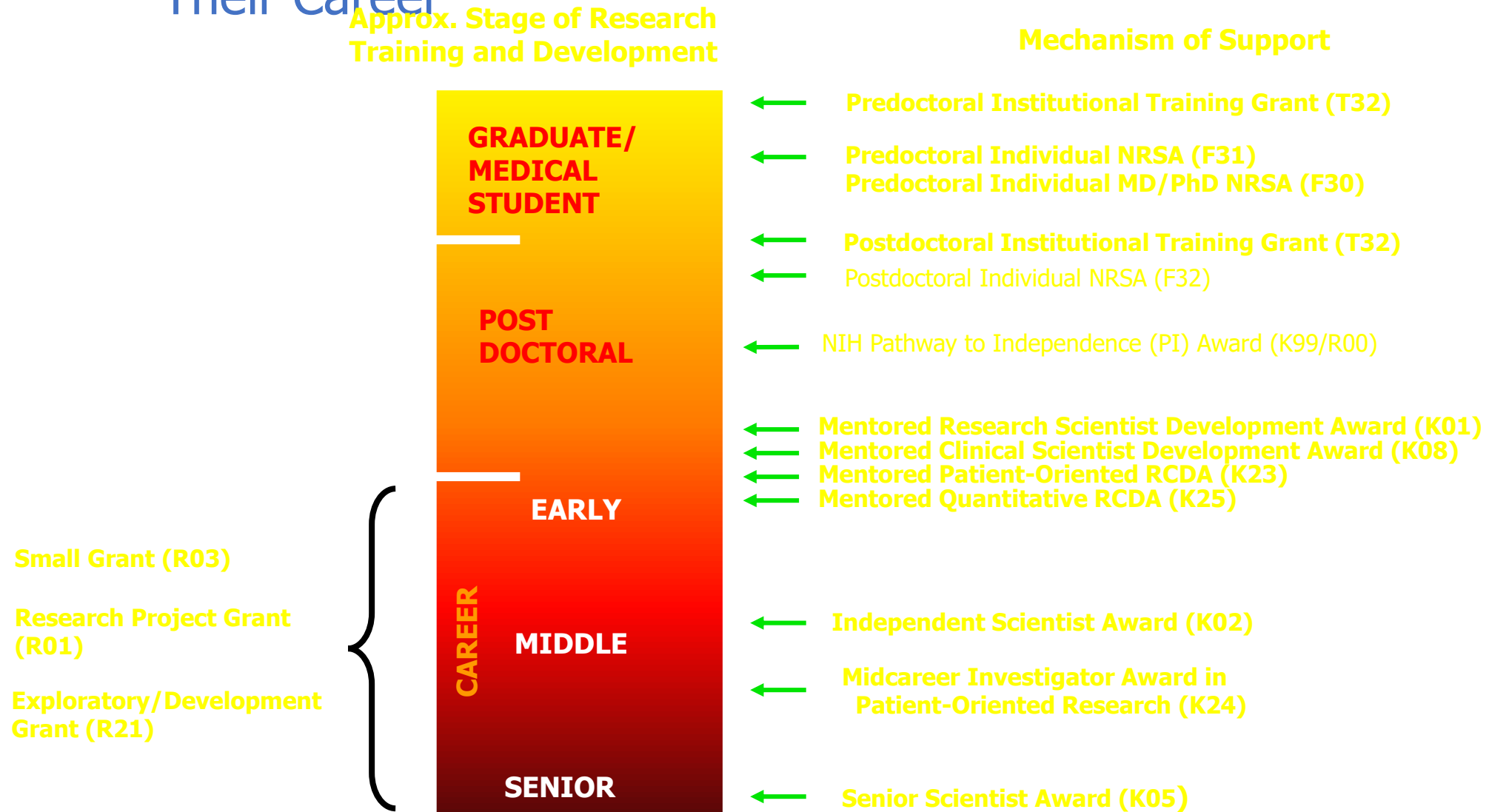
- Substantial benefit of academic research
- New expertise & critical input
- Foster long-term collaborations
- Financial rewards
- Important factor for academic progression



Scope for research career in abroad



NIH Offers Funding Programs to Support Scientists at Every Stage of Their Career



*Graph represents a small sample of NIH funding mechanisms available.

Now what?



Identify the Career Path You Want & Find Positions That Fit You

Do your research

- Internet job sites
- Professional and trade organization websites
- Biotech industry news
- Career Opportunities in Biotechnology– Toby Freedman

Get up-to-date training

- Cross-functional training
- Navigating a Career Change in Biotechnology

Network

- Professional organization meetings
- Local community and friends
- Informational interviews

Find ways to volunteer

- Professional organizations
- Academic institutions
- Other nonprofits

The Future of the Life Sciences Remains Promising

- Significant unmet medical needs remain
 - Neurological disorders
 - Cancer
 - Infectious diseases
 - Diabetes
 - Obesity
 - Cardiovascular diseases
- Aging population
- Tremendous market opportunity in China and India
- Energy

*“Dream is not what you see in sleep. It is the thing
which does not let you sleep”*

– Dr APJ Abdul Kalam
Former President of India

Health Research needs you

Thank you

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