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Funding Agencies for Higher Learning and Research: An Overview

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Abstract

The Research is an important component in academic institution. The Research Scholars and Faculty members requires fund to do their research. To help the researchers several funding agencies in India and abroad provides funds to Young Researcher and Faculty Members that may be by Govt and non govt agencies. This paper discusses about government funding agencies in India such as Council of Scientific & Industrial Research(CSIR), Defence Research and Development Organisation (DRDO), Indian Council Medical Research (ICMR), Indian Space Research Organisation (ISRO), All India Council for Technical Education (AICTE), Aeronautics Research and Development Board (ARDB), Department of Electronics & Information Technology (Deity), Department of Atomic Energy (DAE), Department of Bio Technology (DBT) and University Grants Commission (UGC) to identify the research fundings and fellowships for their higher studies and Advancement of Research.

Key Words: Research, Funding Agency, Research Funding.

Introduction

Research in simple terms, refers to s search for knowledge. It is also known as a scientific and systematic search for information on particular topic or issue. It is also known as the art of scientific investigation. According to Clifford Woody, research comprises defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organising and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.

Role of Funding Agencies in Research

- Promotion
- Education
- Transparent Processes
- International Cooperation
- Ensure learning is embedded in collective memory.

Strategies of Promoting Research and Innovation

- Outcome based research financing.
- Liberal research grants for both social sciences and basic sciences.
- Setting up Incubation Centres with Seed Money to do innovative research
- Research leading to creation of intellectual property.
- Setting up Research Parks in central educational institutions.
- Joint appointments of faculty – enabling researchers to teach and teachers to engage in research.
- Inter-disciplinary research – Institutions must come together for creating new knowledge at the intersections of existing disciplines.

Research Funding Agencies

1. Council of Scientific & Industrial Research (CSIR) (<http://www.csir.res.in/>)

Council of Scientific & Industrial Research (CSIR), India, a premier national R&D organisation, is among the world's largest publicly funded R&D organisation. Human Resource Development Group (HRDG), a division of CSIR realises this objective through various grants, fellowship schemes etc. The CSIR Covering subjects of Aerospace, Biotechnology, Chemicals, Drugs & Pharmaceuticals, Energy, Food and Food Processing, Information Dissemination, Leather and Metal and Minerals & Manufacturing.

1.1 Fellowships

1.1.1 Junior Research Fellowship (JRF)

- The minimum qualifications are BS 4 years programme/BPharm/MBBS/Integrated BS-MS/MSc/BE/BTech.
- Twice a year in the following areas 1) Chemical Sciences, 2) Earth, Atmosphere, Ocean and Planetary Sciences, 3) Life Sciences, 4) Mathematical Sciences 5) Physical Sciences and 6) Engineering Sciences.
- First Year and Second Year per month Rs.12,000. Third Year Rs.14,000 per month.
- Applied Candidates are Scheduled castes/tribes/OBC, women and physically handicapped candidates.

1.1.2 Senior Research Fellowship (SRF)

The minimum qualifications (Under Research Scheme only) are:

- MSc, BE, BTech, BVSc, BPharm.
- ME, MTech or equivalent degree in Engineering/Technology.
- First year, Second year and Third year per month Rs.14,000.
- Applied Candidates are Scheduled castes/tribes/OBC, women and physically handicapped candidates.

1.1.3 Research Associateship (RA)

- The minimum qualifications are: Doctorate (PhD/MD/MS/MDS).
- First year per month Rs.36,000. Second year per month Rs.38,000. Third year per month Rs.40,000.
- Applied Candidates are Scheduled castes/tribes/OBC, women and physically handicapped candidates.

2. Defence Research and Development Organisation (DRDO) (www.drdo.gov.in/)

DRDO was formed in 1958 from the amalgamation of the then already functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO). DRDO was then a small organisation with 10 establishments or laboratories. Today, DRDO is a network of more than 50 laboratories which are deeply engaged in developing defence technologies covering various disciplines, Aeronautics, Armaments, Combat Engineering, Electronics, Life Sciences, Materials and Naval Systems.

2.1 Fellowships

2.1.1 Junior Research Fellowship (JRF)

- Graduate degree in Engineering and Technology, Post Graduate Research degree in Science, or Post Graduate degree in Fellow Psychology; in first division wherever Division or (JRF) equivalent grading is awarded.
- Age Limit 28 years
- Per month 16000/-

2.1.2 Senior Research Fellowship (SRF)

- Degree in Medical Science (MBBS), or Dental Science/ Research Surgery (BDS), or Post-Graduate degree in Engineering and Technology; in First Division , both at Graduate and SRF Post Graduate levels, wherever Division or equivalent grading is awarded.
- Age Limit 32 years
- Per Month 18000/-

2.1.3 Research Associate (RA)

- PhD in Science subjects, or MD/MS in Medical Science, Research or M.Tech/ ME with 02 years experience in research, Associate teaching, Design & Development. Degree should be in (RA) First Division wherever Division or equivalent grading is awarded.
- Age Limit 30 years
- Per Month 24000/-

3. Indian Council Medical Research (ICMR) (<http://www.icmr.nic.in/>)

The Indian Council of Medical Research (ICMR), New Delhi, the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world. The ICMR is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare. The ICMR covering discipline of Biomedical Science.

3.1 Fellowships

3.1.1 Senior Research Fellowships

- Senior Research fellowships provide opportunities to bright young men and women to pursue research and training invariably leading to Ph.D/MD etc.

- M.Sc. (Life Sciences), MA (Social Sciences), Master in Medical Social Work (MSW) degree holders with two years research experience.
- MBBS/ BDS/ MVSc./ M.Pharm/ M.E./ M.Tech degree holders.
- Age Limit 35 years

3.1.2 Research Associateship

- Research Associateships are awarded to encourage young research workers who already have good quality published work to their credit to pursue research work in biomedicine on specific research programmes as post doctoral fellows.
- Doctorate degree in Medicine namely M.D/MDS or Ph.D in any field.
- Age Limit 40 years

3.1.3 Emeritus Scientist Scheme

- The retired medical scientists and teachers, the Council offers the position of Emeritus Scientist to enable them to continue or take up research on specific biomedical topics.
- The Council also awards prizes to Indian scientists, in recognition of significant contributions to biomedical research.
- Age Limit 40 years.

4. Indian Space Research Organisation (ISRO) (<http://www.isro.gov.in/>)

Indian Space Research Organisation, formed in 1969, superseded the erstwhile INCOSPAR. Vikram Sarabhai, having identified the role and importance of space technology in a Nation's development, provided ISRO the necessary direction to function as an agent of development. ISRO develops and delivers application specific satellite products and tools to the Nation: broadcasts, communications, weather forecasts, disaster management tools, Geographic Information Systems, cartography, navigation, telemedicine, dedicated distance education satellites being some of them.

4.1 Fellowships

4.1.1 Junior Research Fellow (JRF)

- Post Graduate (PG) Degree in Basic Science with NET or equivalent qualification or Graduate Degree in Professional Course with NET /GATE.
- Per Month Rs.25,000.

4.1.2 Senior Research Fellow (SRF)

- Qualification prescribed for JRF with two years of research experience
- Per month Rs.28,000.

4.1.3 Research Associates (RA)

- Doctorate or equivalent degree in Science/Engineering/ Technology or having 3 years of research, teaching and design and development experience after ME / MTech with at least one research paper in Science Citation Indexed (SCI) journal.
- Per month Rs.36,000.
-

5. All India Council for Technical Education (AICTE) (<http://www.aicte-india.org/>)

All India Council for Technical Education (AICTE) was set-up in November 1945 as a national level Apex Advisory Body to conduct survey on the facilities on technical education and to promote development in the country in a coordinated and integrated manner. AICTE Academic Programmes of Architecture, Hospitality & Tourism Management, Information Technology, Management Studies, Pharmaceutical Education, Post Graduate Education and Research in Engineering and Technology, Technician Education, Board of Town and Country Planning, Undergraduate Studies in Engineering and Technology, Vocational Education.

5.1 Scholarship

- General Scholarships
- Direct Benefit Transfer
- Scholarship for students with Disabilities
- Sri Lanka Presidential Scholarships for PG Education

6. Aeronautics Research and Development Board (ARDB)

(<http://drdo.gov.in/drdo/boards/ardb/>)

Aeronautics Research and Development Board (AR&DB) is national body for co-ordinating and funding of futuristic research/development programmes in Aeronautics. AR&DB was the consequence of the Subramaniam Committee report and was constituted by Government of India in 1971. The ARDB covering various subjects of Aerodynamics, Aerospace resources, Materials and manufacturing and Systems engineering.

6.1 Scholarships

This scheme now includes the Aeronautical Engineering Undergraduate and Post Graduate Level.

6.1.1 B.Tech AR&DB Scholarship

- B.Tech AR&DB Scholarship Provides only 50 students.
- The scholarship amounts to Rs 5000/- p.m. for a period of 4 years.

6.1.2 M.Tech AR&DB Scholarship

- M.Tech AR&DB Scholarship Provides only 25 students.
- The scholarship amounts to 25% more than the MHRD scholarship p.m. for a period of 2 years.
- Must have at least 60% marks in undergraduate degree.

7. Department of Electronics & Information Technology (DeitY) (<http://deity.gov.in/>)

To promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

7.1 Fellowships

7.1.1 Full Time PhD Candidates

- Fellowship : 31,500p.m.(I & II yr); 35,000(III to V yr)

- Annual Contingency Grant support @ Rs. 30,000/- per year for consumables etc.
- Reimbursement of Rent for those PhD candidates who are not provided accommodation or choose not to avail the accommodation provided by the institution.
- Support for attending international conferences (1000 supports @ up to Rs. 50,000 per conference)
- The duration of scheme would be for a period of five years

7.1.2 Part-time PhD Candidates

- One time incentive of Rs. 2,50,000 on completion of the PhD
- The duration of scheme would be for a period of five years.

7.1.3 Young Faculty Research Fellowship

- Fellowship @ Rs. 20,000 per month in addition to the regular income
- Annual grant of Rs. 5,00,000 for research expenses and presenting research work, to be granted for a period of up to 5 years.

8. Department of Atomic Energy (DAE) (<http://www.dae.nic.in/>)

The Department of Atomic Energy (DAE) came into being on August 3, 1954 under the direct charge of the Prime Minister through a Presidential Order. According to the Resolution constituting the AEC, the Secretary to the Government of India in the Department of Atomic Energy is ex-officio Chairman of the Atomic Energy Commission. DAE covering various disciplines of Nuclear power technology, Radiation technologies, Agriculture, Medicine and Industry. It also supports eight institutes of international repute engaged in research in basic sciences, astronomy, astrophysics, cancer research and education.

8.1 Fellowships

8.1.1 Teacher Fellowships:

- These fellowships are offered to college or university teachers who are working towards their Ph.D. and have already made some progress.
- The fellowships are for a maximum period of three years.

8.1.2 Post-Doctoral Fellowships:

- The Post-Doctoral Fellowships is given to mathematicians below the age of 35.
- For postdoctoral research work, scholars who have submitted their dissertations for a Ph.D. degree are also eligible to apply.

8.1.3 Research Award for Ph.D Studies:

- The award is meant for students wishing to do a Ph.D. in any branch of mathematics.
- Students applying for this Award should have a Master's degree in mathematics, physics or statistics.
- The award is granted initially for one year and is renewable for a period of up to five years.

9. Department of Bio Technology (DBT) (<http://www.dbtindia.nic.in/>)

The DBT covering various subjects like, Basic Research, Medical Biotechnology, Agriculture Technology, Food and Nutrition, Bio resources, Environment and Bio energy, Animal Biotechnology, Aquaculture and Marine biotechnology, Bio Informatics, International Collaborations and Human Resource Development.

9.1 Fellowships

9.1.1 Junior Research Fellowship (JRF)

- The department provides fellowships to biotechnology students to pursue doctoral research in universities/research institutions across the country.
- The students are selected through Biotechnology Eligibility Test (BET) now being co-ordinated by the National Centre for Cell Sciences.

9.1.2 Research Associateship (RA)

- The department provides fellowships for post doctoral research in frontier areas of biotechnology and life sciences at premier institutions in India.
- The Research Associateship programme is being implemented by the Indian Institute of Science, Bangalore.
- The fellowship is initially awarded for a period of two years and the support can be extended for 1 to 2 years based on review of progress.

9.1.3 Khorana Program for Scholars

- This program of scholarship is an Indo-US collaborative effort to create an effective scientific contact between the biotechnology students of India and the biotech students of the United States of America.
- The scholarship allows Indian students of B Tech, M Tech and M Sc to undertake research internship in Wisconsin-Madison University of USA.
- The programme has now been expanded to some other universities of USA like Minnesota, Michigan, Iowa, Indiana and Georgetown.

10. University Grants Commission (UGC) (<http://www.ugc.ac.in/>)

In 1952, the Union Government decided that all cases pertaining to the allocation of grants-in-aid from public funds to the Central Universities and other Universities and Institutions of higher learning might be referred to the University Grants Commission. Consequently, the University Grants Commission (UGC) was formally inaugurated by late Shri Maulana Abdul Kalam Azad, the then Minister of Education, Natural Resources and Scientific Research on 28 December 1953.

10.1 Fellowships

Sl. No	Name of the Fellowship	Scholarship	JRF	SRF	Qualification
1	Maulana Azad National Fellowship for Minority Students	--	Rs.25,000/- p.m. for initial two years (JRF)	Rs.28,000/- p.m. for remaining tenure (SRF)	Completed Post Graduate Degree

2	Rajiv Gandhi National Fellowship for SC Candidate	--	Rs.16000/- p.m. for initial two years	Rs.18000/- p.m. for remaining tenure	Completed Post Graduate Degree
3	Post-Graduate Indira Gandhi Scholarship for Single Girl Child for PG Programs	Rs.3100/- p.m.	--	--	Completed Undergraduate Degree
4	Post-Graduate Merit Scholarship for University Rank Holders for PG Programs	Rs.3100/- p.m.	--	--	Under Graduate Degree Rank Holder
5	Post Doctoral Fellowship to SC/ST Candidates	1 st Year Rs. 16,000/-p.m, 2 nd Year Rs. 38,800/- p.m, 3 rd Year Rs.46,500/- p.m.	--	--	Completed Doctorate Degree
6	Post Graduate Scholarships for Professional Courses for SC/ST Candidates	Rs.7,800/- p.m.	--	--	Completed Under Graduate Engineering Course
7	Post Doctoral Fellowship to Women Candidates	Rs.18,000/- p.m. after two years Rs. 20,000/- p.m	--	--	Completed PhD
8	Emeritus Fellowship	Rs. 31,000/- p.m. from UGC. for two years	--	--	Teachers of Universities, colleges
9	Junior Research Fellowship in Engineering & Technology	Rs.14000/- p.m for initial two years	--	--	Completed Post Graduate Degree
10	Rajiv Gandhi National Fellowship for Students with Disabilities	--	Rs.16000/- p.m. for initial two years	Rs.18000/- p.m. for remaining tenure	Disability Student Completed Post Graduate Degree
11	Dr. S. Radhakrishnan Post Doctoral Fellowship in	1 st year rs.38,800 p.m 2 nd year	--	--	Completed Doctorate Degree

	Humanities and Social Sciences	rs.40,300 3 rd year rs.41,900 p.m			
12	Swami Vivekananda Single Girl Child Scholarship for Research in Social Sciences	1 st and 2 nd years rs.12,400 p.m. 3 rd and 4 th year rs.15,500 p.m.	--	--	Completed Post Graduate Degree in Social Science Subject
13	National Fellowship for OBC Candidate	--	Rs.25000/- p.m for initial two years,	Rs.28000/- p.m. for remaining tenure	Completed Post Graduate Degree
14	National Fellowship for Higher Education of ST Students	--	Rs.25,000/- p.a for initial two years.	Rs.28,000/-pa for remaining tenure.	Completed Post Graduate Degree

Conclusion

Research is being the important in higher education. The Government of India provides the opportunity for the development of research in higher education institutions. Now research funding is very much available in Govt of India and other sources but our research scholars and faculty members to aware of the funding agency and also the time of funding, fellowship can be applied. Hence all the higher learning institutions can setup the research information system to know more about funding and research.

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