

Research Opportunities for Women Scientists in India

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Abstract: Women should also be an important part of workforce in society. Unless women scientists succeed in their scientific careers, they cannot serve as decision makers and role models for future developments in research and scientific programmes. Unfortunately, achievements and recognition of women is poor in the all fields including science and technology. While women undertake education at graduation, post graduation and doctoral levels, most of them are not actively engaged in further research. In order to avoid gender inequality and to address the needs, analysis was made to identify the various funding agencies that support research schemes exclusively for women. University grants commission (UGC), Department of Biotechnology (DBT), Science and Engineering research Board (SERB) Department of Health research (DHR) and Department of science and technology (DST) have launched separate schemes exclusively for women having aptitude towards research in science and technology. The details were obtained from the websites. The information about each award including the eligibility criteria, tenure, nature of financial assistance and other conditions are given in this review article.

Keywords: research, women, Science, technology

1. Introduction

There are various schemes launched by the government of India to encourage women researchers. The applicant should identify a specific area for research and should develop a project proposal. University grants commission (UGC), Department of Biotechnology (DBT), Science and Engineering research Board (SERB) Department of Health research (DHR) and Department of science and technology (DST) have launched separate schemes exclusively for women having aptitude towards research in science and technology. The details were obtained from the websites.

The host institution should be chosen by the applicant and prior permission should be obtained before submission of the proposal. If needed, the applicants short listed will be called for an interview or interface meeting. The funding agency will closely monitor the progress of the sanctioned project. Annual progress report should be submitted at the end of each year and project completion report should be submitted at the end of the tenure of the project. The principal investigators of the project are encouraged to apply for patents, publish and present their findings in conferences and seminars with acknowledgement of the funding agency. The details about each award including the eligibility criteria, tenure, nature of financial assistance and other conditions were obtained from the respective websites of the funding agencies during December 2016. However the information given in this review is subject to changes.

A) University Grants Commission (UGC)

Award: Post Doctoral Fellowship to Women Candidates

To accelerate the talented instincts of the unemployed women candidates holding Ph.D. degree in their respective subject areas to carry out the advanced studies and research. The objective of this award is to provide an opportunity to carry out the advanced studies and research in science, engineering and technology, humanities and social sciences in Indian Universities and Colleges recognized under

Section 2 (f) and fit to receive assistance under section 12(B) of the UGC Act 1956/Institutes of National Importance established by the Central/State Government.

Eligibility

- 1) The candidate must have a doctorate degree in the relevant subject preferably with published research work to their credit.
- 2) In case of general/open category, 55% marks at UG level and 60% of marks at PG level.
- 3) For reserved categories (SC/ST/OBC/PH) candidates, 50% at UG level and 55% at PG level.
- 4) The upper age limit for applicants is 55 years for the candidates belonging to general/open category and 60 years for SC/ST/OBC/PH/Minority communities, as on 1st July on the year of application.

Nature of Assistance (Table 1)

The number of slots available: 100 per year

Tenure: 5 years with no provision for further extension.

Table :1 The financial assistance available under the scheme is as follows:

Fellowship	Rs. 38,800/-p.m.
	Rs. 46,500/- p.m. after two years
Contingency	Rs. 50,000/-p.a. for five years
Escorts/Reader	Rs. 2000/- p.m. (fixed) in cases of Person with disability

Website: http://www.ugc.ac.in/ugc_schemes/

B) Department of Biotechnology (DBT)

Award: DBT: Biotechnology Career Advancement and Re-orientation Programme (Bio-CARE) for women Scientists.

In an attempt to enhance the participation of Women Scientists in Biotechnology Research, the Department of Biotechnology launched a Biotechnology Career Advancement and Re-orientation Programme (Bio-CARE) for women Scientists. The purpose is to build capacities for women Scientists employed fulltime in Universities and

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small research laboratories or unemployed women Scientists' after a career break so as to help them undertake independent R&D projects.

The scheme is open for all areas of Life Science / biology (including agriculture, veterinary science and medicine).

Eligibility

- i. M.D/M. Tech /Ph. D/Equivalent degree in any branch of Life Sciences.
- ii. Women Scientists who are employed or unemployed or are desirous of coming back after a break.
- iii. Women Scientists for whom it is the first grant.
- iv. Women Scientists up to 55 years of age

Nature of Assistance

All research related expenses are to be booked under Equipment, Consumables, Manpower, Contingency, Travel etc. The budget is restricted to Rs. 60.00 lakhs for 3 years for RGO and Rs.40.00 lakhs for ECS. This includes manpower to be hired (PA/JRF/SRF/RA for RGO and PA for ECS) in the project.

Website: <http://www.dbtindia.nic.in/>

C) Science and Engineering Research Board (SERB)

Award: SERB Women Excellence Award

Eligibility

Women scientists below 40 years of age who have received recognition from any one or more of the following national academies such as Young Scientist Medal, Young Associate etc.

Nature of Assistance

These women researchers will be supported with a research grant of Rs.5.00 lakhs per annum for a period of 3 years. Women Scientists who have received the award earlier are not eligible to apply again.

Website: www.serb.gov.in/women.php

D) Department of Health Research (DHR) -ICMR

It is a programme specifically for women: Short /Long term training in Indian institutes followed by fellowship to women candidates who have had a break in their career but having demonstrable aptitude towards health research in front line and emerging areas (Table 2).

Eligibility

- 1) Only Indian women citizen and presently unemployed and having qualifications as prescribed for category A or category B will be eligible in respective category.

- 2) The woman scientist shall be submitting the research plan in either of the identified area through any medical college/bio-medical research institute under one faculty member.
- 3) Candidate already in job or registered for Ph.D. or having any other fellowship or support are not eligible.
- 4) Candidate having research publication in indexed journals will be given preference.
- 5) Women of 30-50 years of age as on last date of receipt of application are eligible.

Website:

<http://icmr.nic.in/dhr/hrd/GUIDELINESHRDSCHEME.pdf>

E) Department of Science and Technology (DST)

The scheme is meant to encourage women in S&T domain, preferably those having a break in career and not having regular employment, to explore possibility of re-entry into the profession. Following three categories of fellowships, with research grants, are available for Indian citizen (Table 3):

- 1) **Women Scientist Scheme-A(WOS-A):** Research in Basic/Applied Science
- 2) **Women Scientist Scheme-B (WOS-B):** S&T interventions for Societal Benefit
- 3) **Women Scientist Scheme-C (WOS-C):** Internship in Intellectual Property Rights (IPRs) for the Self-Employment

Website: <http://www.dst.gov.in/>

The minimum age to apply in WOS-A & WOS-B is 27 years and maximum age is 57 years. Age relaxation of 5 years would be given to candidates belonging to SC/ST/OBC and physically challenged category. This scheme will provide a research grant for a well-defined project proposal (under WOS-A and WOS-B) for a period of maximum three years. This grant will provide the fellowship of the applicant and cost of small equipments, contingencies, travel, consumables, etc. Institutional overhead charges will be extra. Applications are invited throughout the year for WOS-A & WOS-B.

2. Conclusion

The potential of women researchers are underutilized as they stay away from doing research. Due to gender many of the well qualified women get left out of the science and technology. Therefore the number of women with doctoral and post doctoral research experience is comparatively lower than expected. The schemes mentioned in this review article gives a comprehensive view on the various research opportunities available for doing research exclusively for women in India.

Table :2 Nature of Assistance (ICMR)

Category A. Women Holding M.D./ M.S./ M.D.S. or MBBS/ BDS/ MVSc/ M.Sc./ M.Pharma/ M.Tech with Ph.D in bio-medical sciences	Fellowship (for 3 years)	
	For medical persons	Rs. 60,000/- per month
	For non medical persons	Rs. 50,000/- per month
	Contingency grant	Rs.10,00,000 per year
Category B Women holding MBBS /BDS or M.Sc. /M.Tech. /M.Pharma in bio-medical sciences and having at least 2 years working experience in bio-medical field.	Fellowship (for 3 years)	
	For medical persons	Rs. 50,000/- per month
	For non medical persons	Rs. 42,000/- per month
	Contingency grant	Rs.10,00,000 per year

Table :3 Eligibility and Nature of Assistance (DST)

Programme	Qualifications	Amount of Fellowship per month	Total Cost of the Project not exceeding
Women Scientist Scheme-A (WOS-A)	Ph.D. in Basic or Applied Sciences or equivalent degree	Rs.55,000/-	Rs.30 lakh
	M.Phil/M.Tech/M.Pharm/M.VSc or equivalent degree	Rs.40,000/-	Rs.25 lakh
Women Scientist Scheme-B (WOS-B)	M.Sc in Basic or Applied Sciences/B.Tech/MBBS or equivalent degree	Rs.30,000/-	Rs.20 lakh
Women Scientist Scheme-C (WOS-C)	Ph.D. in Basic or Applied Sciences or equivalent degree	Rs.30,000/-
	M.Phil/M.Tech/M.Pharm/M.VSc or equivalent degree	Rs.25,000/-
	M.Sc in Basic or Applied Sciences/B.Tech/MBBS or equivalent degree	Rs.20,000/-

References

- [1] http://www.ugc.ac.in/ugc_schemes/
 [2] <http://www.dbtindia.nic.in/>
 [3] www.serb.gov.in/women.php
 [4] <http://icmr.nic.in/dhr/hrd/GUIDELINESHRDScheme.pdf>
 [5] <http://www.dst.gov.in/>