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# Funding Opportunities for R&D

Department of Science and  
Technology (DST) ([dst.gov.in](http://dst.gov.in))

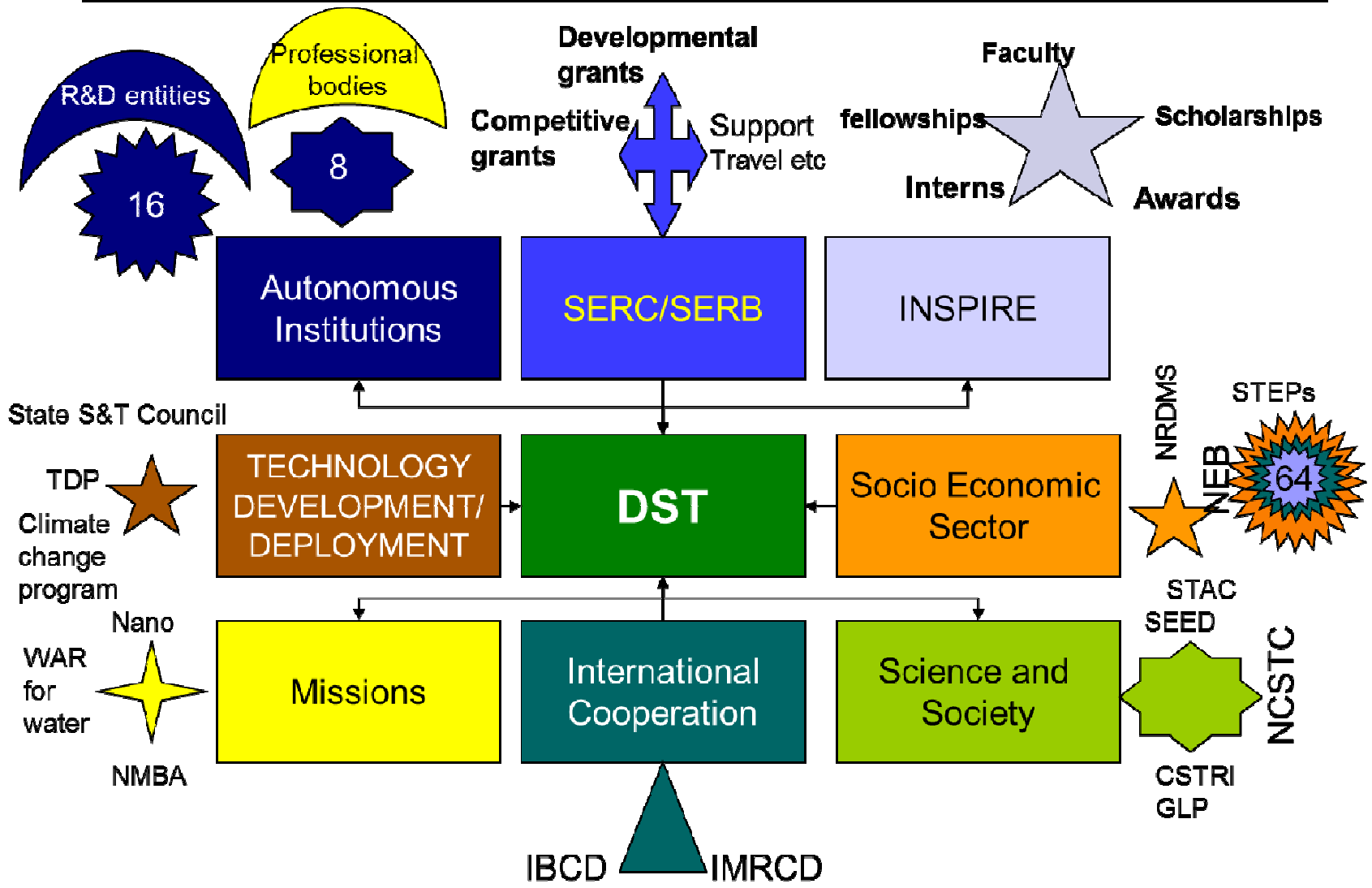
Other Central Agencies



## DST: Objectives and Functions

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- **Formulate Science, Technology and Innovation Policy and other enabling Policies for R&D**
- **Strengthening Basic Research and Expanding R&D base - Human Capacity**
- **Strengthening Basic Research and Expanding R&D base - Institutional Capacity**
- **Implement Technology Development Programs**
- **Societal Interventions of S&T**
- **S&T Co-operation/Partnerships and Alliance**





## Schemes of importance

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- Extra Mural R&D funding to individual researcher (SERB project)
- Young Scientists Scheme
- Women Scientist Scheme
- Visiting Fellowship Scheme
- International Travel support Scheme
- Seminar/Symposia Scheme
- Technology Application Oriented Programmes



## Other Schemes

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- Nano Mission
- Technology Development Programs
- Funds for Improvement in Science and Technology Infrastructure
- INSPIRE (Innovation in Science Pursuit for Inspired Research)
- International Collaboration Programmes



# Science and Engineering Research Board (SERB)

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- Autonomous body for funding Research (similar to global funding agencies like NSF)
- Competitive mode of funding in all areas of S&T
- Has administrative and financial flexibility



# SERB: Extramural R&D Funding to individual researcher

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- Granted to individual/group of researchers.
- Principal Investigator (PI) and Co-PI hold a regular position
- Proposals are peer reviewed and PI is invited for interaction with a committee of experts to arrive at a recommendation.
- Support towards manpower, equipment, consumables, travel and contingencies can be sought.
- Institute gets overhead.
- Average cost Rs 33 lakh.



## SERB: Submission of proposals

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- Use appropriate format
- Download format and guidelines from SERB website ([www.serbonline.in](http://www.serbonline.in))
- PI/Co-PI register for online submission
- Proposals can be submitted any time of the year



# SERB: Young Scientist Programmes

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- To provide support to young scientists to pursue bright ideas
- Granted to researcher:
  - a. National-Post Doctoral Fellowship
  - b. Early Career Research Award
- N-PDF allowed Fellowship (Rs 55,000 pm, Rs 35,000 pm after submission of thesis) and funding of Rs 3 lakh per year
- ECRA within 2 years of joining as faculty/researcher—Grants upto Rs 50 lakh
- Proposal in the prescribed format to be submitted against call (usually on quarterly basis)
- Ph D essential for Science/Engg. discipline



## Basis for consideration of proposal

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- Ideas: Novel
  - Mere extension of Ph D/PDF work not encouraged
- Competence: Publications, Patent, preliminary work
- Well formulated (in prescribed format)
- Budget is not important



## Writing proposal:

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- Peer-reviewed before called for presentation
- It should convey clearly what the PI wants to achieve (objectives), how (methodology), and novelty (National/International status)
- Focused Objectives (4-5 points)
- Literature Survey
- Detailed methodology with structure, equation, schemes, diagrams, etc
- Care be taken to avoid spelling and grammatical error, follow uniform reference pattern, list out all the authors in the list of publications
- Budget (realistic): Manpower, equipment, consumables, travel and contingency are provided. Institution will get overhead.
- Follow the Principles of Research Integrity



# SERB: Strengthening Extra Mural Research support in the country

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- **No of proposals received has more than doubled over the last 5 years**
  - **Increased from 250/year to more than 625/year**
  - **Quantum of the grants increased by 250%**
- **SERB has become operational**
- **Supported extended:**
  - 2011-12: Rs 200 Cr, 2012-13: Rs 400 Cr**
  - 2013-14: Rs 500 Cr, 2014-15: Rs 565 Cr**
  - (2015-16: Rs 680 Cr)**
- **Made changes in R&D funding modes through rationalization of budget heads, grants to scientists with proven track record, etc.**
- **De-bureaucratization of R&D funding is the major goal of SERB**



# DST: Funds for Infrastructure in Science and Technology(FIST)

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Three levels of support for taking up R&D

- Level-0: Colleges with PG Courses
- Level-1: Moderate support to Departments in University/Deemed to be University
- Level-2: Considerable support to Departments in Premier Institution for advanced research



# Strengthening Institutional Capacity for Basic Research

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## Improvement of Infrastructure in S&T

- 1440 departments supported, about 90 Postgraduate colleges supported. Share of university sector > 66%
- Special packages for NER, J&K
- PURSE scheme based on output parameters designed and delivered
- CURIE for women only universities delivered for all six women universities



# Women Scientist Scheme

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- ❖ This scheme enables Women Scientists, who had break in their career, to come back to mainstream of Scientific activities.
- ❖ Three categories of Fellowship are given for Women Scientists(WoS) to provide opportunities to pursue:
  - \* Basic Research
  - \* Society Related Scientific activity
  - \* S&T based Self employment

**Supported 3000 fellowships(since 2003)**



## Visiting Fellowship

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- Support to scientists/academicians from less endowed institutions/to work in a reputed Institution.
- Hold regular position
- Should be less than 50 years
- Awarded for a period of 3 months
- One time TA/DA, Fellowship of Rs.6000, and contingency are provided



## Seminar/Symposia Scheme

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- Support to organise national/ international conference/Seminar
- Support is provided for TA/DA to the participants, and preconference printing.
- Support varies from Rs 75,000 to a few lakhs of Rs
- Application in format to reach in 2 months in advance.



# International Travel Support

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- Return airfare, visa fees and airport tax to present a paper in an international conference
- Registration Fee allowed to young researchers (below 35 years).
- No per diem provided.
- Application in prescribed format to reach 8 weeks in advance.



# SUMMARY

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- SERB/DST supports all areas of S&T. It is the only agency which support all disciplines.
- SERB/DST has scheme for everyone (X+ to retired scientist)
- Major schemes of importance to researcher:  
Extramural Research Support to individual researcher, Start up grant to Young Scientist, FIST, Women Scientist Program, Intl Travel support, etc.
- SERB/DST funding helped to augment research capability and undertake frontier research
- The peer review system of SERB/DST is well recognised by the S&T community



# Rejuvenation of Research in University Sector

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- Promotion of University Research and Scientific excellence (PURSE)
  - Based on number of publications over 1996-2006 period (Scopus data base) and h-index, 14 Universities were selected for research incentive grant based on evidence based reward system.
  - Budget outlay is Rs 201 crores for three years.
  - The grant provides flexibility for the university for enrichment of programmes



# Rejuvenation of University Research

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- “CURIE” (Consolidation of University Research for Innovation and Excellence in Women Universities) to support women universities for improving R&D infrastructure has been launched



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# Technology Development Initiatives (DST)

New Paradigm

Seeking convergent solutions  
rather than demonstrating a  
technology element



# Programmes for convergent technology solutions (DST)

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- Big Data Initiative
- Clean Energy Research Initiative
- Climate Change
- Cognitive Science Research Initiative
- Drug and Pharma Research Programme
- Instrument Development Programme
- National S&T Management Information System
- Nano Science and Technology
- Science&Technology for Yoga &Meditation (**SATYAM**)
- Science and Society Intervention
- S&T Communication
- Technology Systems Development
- Water Technology Initiative



# Other Funding Agencies

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## **Dept of Atomic Energy: BRNS** ([daebrns.gov.in](http://daebrns.gov.in))

- Regular Projects
- Special Projects
- Young Scientists Research Award

## **Dept of Biotechnology** ([dbtindia.nic.in](http://dbtindia.nic.in))

- Basic R&D, Biotech Parks and Incubators
- Societal Development
- Women Scientists Programme
- Young Scientists Programme

## **Ministry of Commn and IT: Dept of Elecs &IT** ([deity.gov.in](http://deity.gov.in))

- Electronics: Industrial, Medical, Strategic, Telemedicine, etc
- IT: Bioinformatics, Computer Cognitive Behaviour Therapy, Free and Open Source S/W, High Performance Computing, Innovation and IPR, etc



## Other Funding Agencies (Contd...)

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### **Dept of Scientific and Industrial Research** ([dsir.gov.in](http://dsir.gov.in))

- Industrial R&D Programmes and Industrial Tech Studies
- Promote Innovation in Individuals, Start-ups and MSMEs, etc

### **Dept of Space: RESPOND** ([isro.gov.in/respond](http://isro.gov.in/respond))

- Space Science, Space Technologies and Space Applns

### **Ministry of Defence: Defence R&D Orgn** ([drdo.gov.in](http://drdo.gov.in))

- Aeronautics and related areas
- High Energy Materials, sensors, armament related areas, etc
- Naval Applications
- Biological, Bio-energy, Bio-medical, Food Science &Tech, etc

### **Ministry of Drinking water and sanitation** ([mdws.gov.in](http://mdws.gov.in))

- Technology Development for Water Resources
- Improvements in Water Pumping and Distribution Systems
- Appropriate Technologies for Rural Sanitation



## Other Funding Agencies (Contd...)

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### **Ministry of Earth Sciences** ([moes.gov.in](http://moes.gov.in))

- Atmospheric Sciences, Earth System Sciences, Geosciences
- Hydrology and Cryosphere
- Ocean Sciences and Resources

### **Ministry of Env, Forests & Climate Change** ([envfor.nic.in](http://envfor.nic.in))

- Environment Protection and Management
- Ecosystem Resource Program
- National Natural Resources Management System
- Socio-Economic issues of Environment

### **Ministry of Food Processing Industries** ([mofpi.nic.in](http://mofpi.nic.in))

- Development of New Products and Cost Effective Techns
- Preservation and Packaging Practices
- Standardisation of Additives, Coloring, Preservatives, Pesticide Residues, etc



## Other Funding Agencies (Contd...)

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**Ministry of Health and Family Welfare: Dept of Ayurveda, Yoga and Naturopathy, Unani, Sidha and Homoeopathy** ([Indianmedicine.nic.in](http://Indianmedicine.nic.in))

--Promotion of Various Indian Systems of Medicine and Treatment

**Ministry of New and Renewable Energy** ([mnre.gov.in](http://mnre.gov.in))

--Solar Photovoltaics and Solar Thermal

--Alternate Fuels: Hydrogen, Bio-fuel and Synthetic fuel

--Green Initiatives for Future Tech (GIFT)

--Energy Recovery from Waste Materials and Effluents

--Grid Interactive Electrical Systems (MW scale)

**Ministry of Water Resources** ([wrmin.nic.in](http://wrmin.nic.in))

--Efficient Management and Conservation of Surface Water and Ground Water

--Effect of Climate Change on Water Resources & related areas



## Other Funding Agencies (Contd...)

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### **All India Council for Technical Education** ([aicte-india.org](http://aicte-india.org))

- Research Promotion Scheme (RPS)
- Modernisation and Removal of Obsolescence (MODROB)
- Faculty Development Program
- Support for Travel and Seminar
- Technical Education Quality Improvement Program (TEQIP)

### **Council of Scientific and Industrial Research** ([csir.res.in](http://csir.res.in))

- Extra-Mural Research Grants
- Fellowships (JRF/SRF/Res Assoc)

### **University Grants Commission** ([ugc.ac.in](http://ugc.ac.in))

- Faculty Development/Re-charge Programs
- Minor/Major Research Programs
- Special Assistance Program
- Fellowships/Awards: JRF, Women, Disabled, SC/ST, Minorities



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**Thank You**