

NAAC Presentation

October 2018



DEPARTMENT OF ZOOLOGY UNIVERSITY OF DELHI

[Estb. 1947]



Overview



- Vision & Mission of the Department
- Department Profile and Highlights /Achievements of the Department
- Curricular Aspects
- Teaching-Learning
- Student Support and Progression
- Research, Innovations and Extension
- Infrastructure and Learning Resources
- Institutional Values and Best Practices

Department of Zoology

Microbes to Human



Vision

To develop a world class center of excellence in education, training & research in the field of Zoology where teaching and research encrust detailed understanding from microbes to human.

Mission

- To impart holistic understanding of Zoology by “redefining Zoology” to students of every age so that they develop interest in Science.
- To develop teaching and research programmes that has relevance to the society and employability.
- To continuously evaluate our performance against National and International benchmarks and to develop dynamic programmes according to the need of the society leading to global tie-ups to meet our stakeholder students’ requirements.



Established as a Premier Centre of Teaching and Research in Animal Sciences in 1947



Department

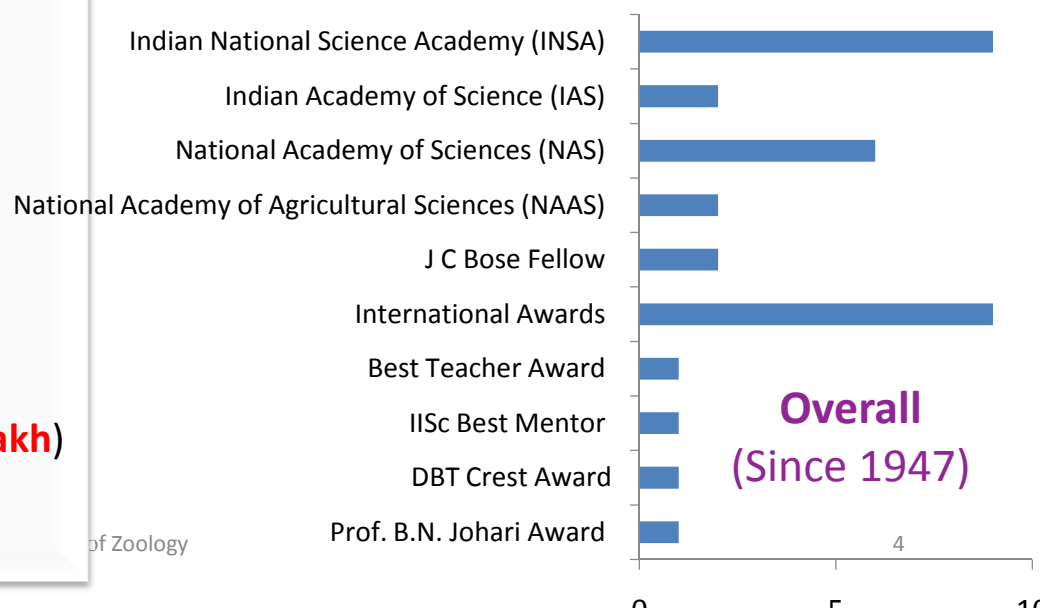
- Centre for Advanced Studies (since 1963 till date)
- DST-FIST
- DST Purse Grants

Students are well placed: **85%** (during 2012-2017)

- In teaching both at school and
- At college/university level- **60%**
- Research institutions- **21%**
- In R&D of drug companies -**2%**
- GOI-**2%**

Faculty (during 2012-2017)

- Elected Fellows of number of Scientific Academies and Scientific Bodies -**13**
- Members of Editorial Boards of Scientific Journals-**9**
- Committee members Academy Boards/ Committees of several Institutions-**All**
- Individual Extra –mural Grants- (≈**Rs. 2600 lakh**)
- Collaborative Research-**14** (≈**Rs. 1200 lakh**)
- Good Publications- **323**



of Zoology

PROGRAMMES OFFERED



- I. M.Sc. in Zoology
- II. M.Phil. in Zoology
- III. Ph.D. in Zoology

Course details at: <http://zoology.du.ac.in>



M.Sc. Zoology Syllabus Revision

under CBCS scheme

[Syllabus-M.Sc Zoology Under CBCS Scheme 2018.pdf](#)

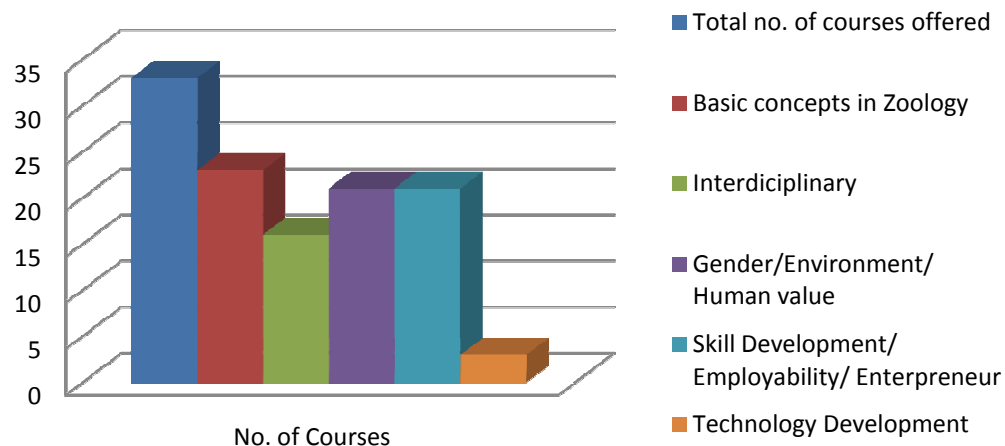
Type	Number	Semester	To be selected
Core	10	I,II,III	ALL
Electives/ Open E	6/ 1	III	2/ 1
Electives (in stream)	16 (4 in each stream)	IV	4 (1 stream)
Dissertation	Optional , student depending on their interest can opt for it.		

Recent advances in Zoology from organismic to reductionist biology

Understanding the **challenges of society and the country** that falls into the realms of Zoology

Program Objective

such as Aquaculture, Reproductive health, Physiology, Neurobiology, Behavior and Biological time keeping, Cancer Biology, Microbiome and their roles in health and diseases, Bioremediation of pollutants and pesticides, Environment and animal interaction, etc.





M.Phil/Ph. D. Course Work

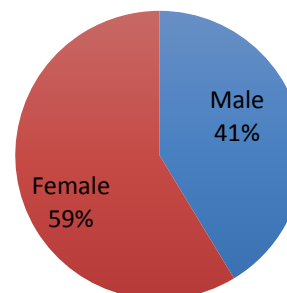
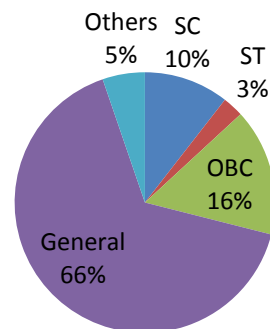
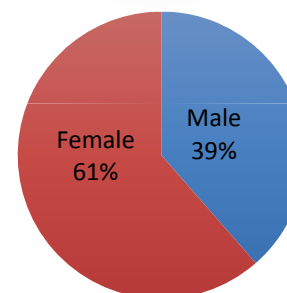
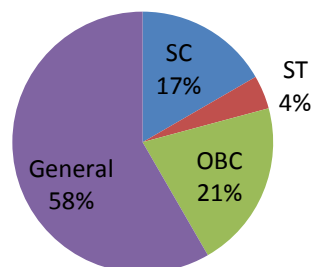
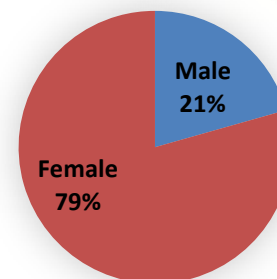
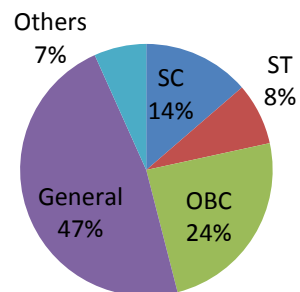
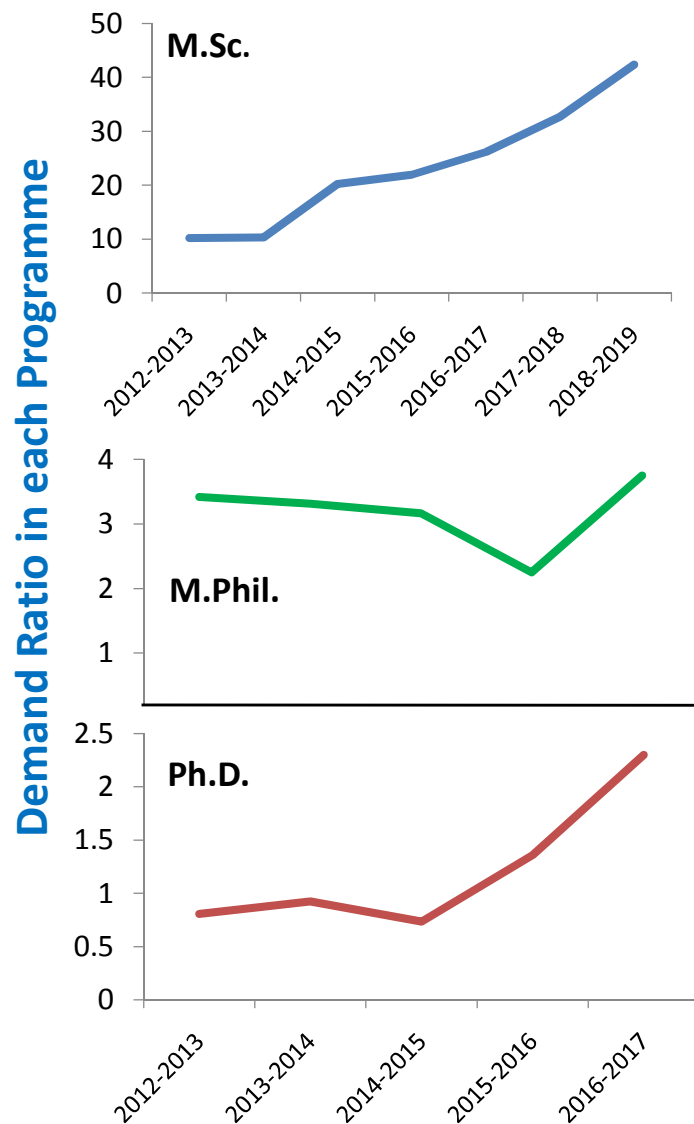
Revised in 2017-2018

Paper	Name
PAPER I	Basic Research Methodology
Paper II	Advanced Research Tools And Techniques
Paper III	Recent Trends In Zoology

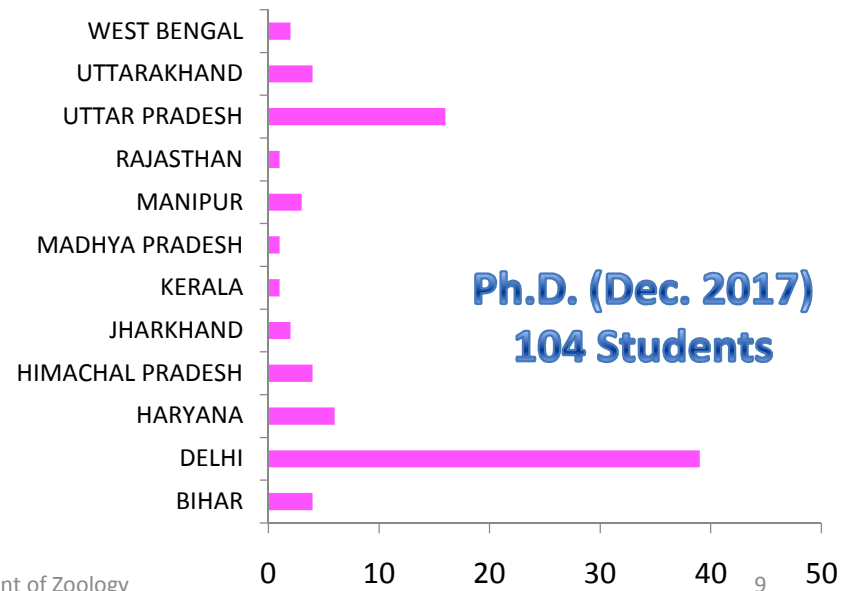
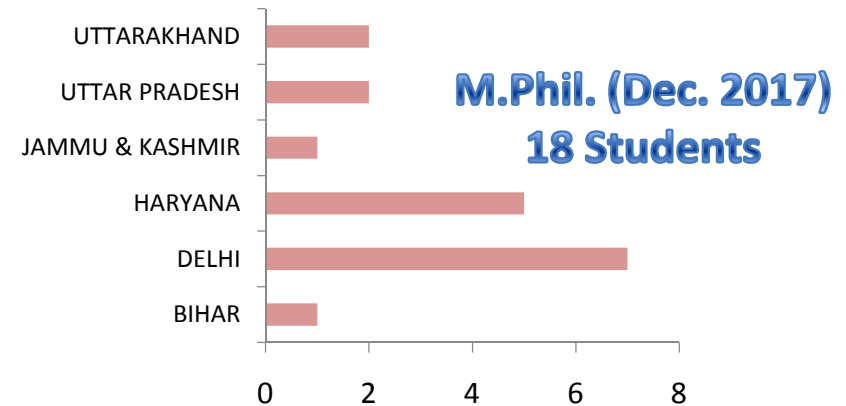
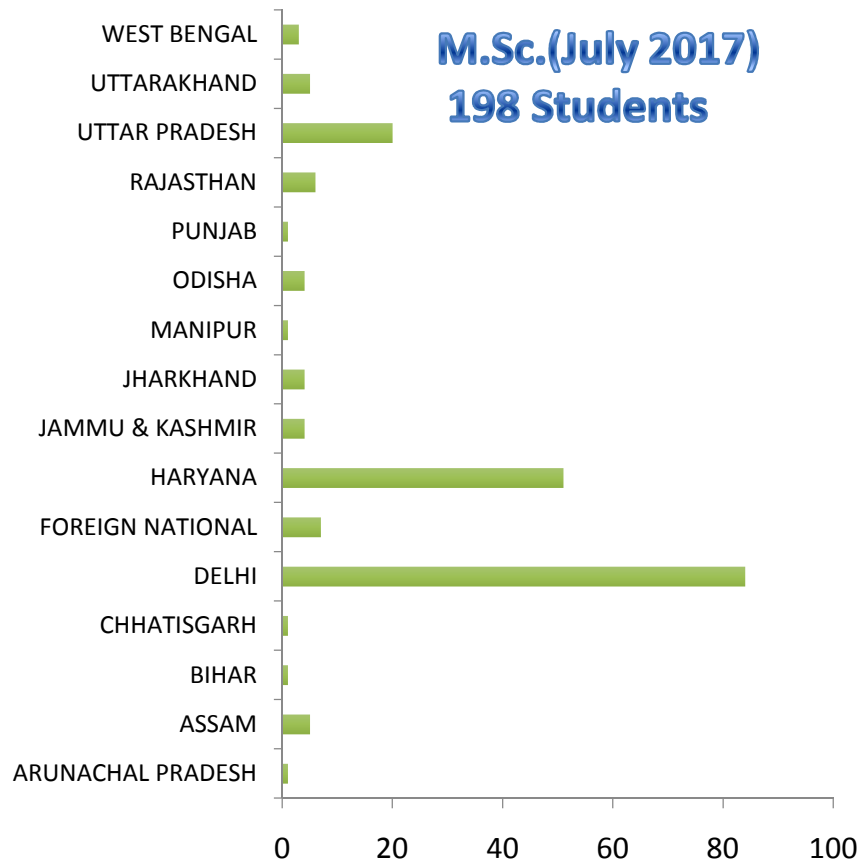
Followed by submission of 'Research work' in the form of dissertation or thesis for M.Phil. And Ph.D., respectively following Ordinance VI of Delhi University.

Areas of research offered: Details @ Department Website

PROGRAMME OFFERED & DEMAND (2012-2017)



Demographic distribution of students on roll in various programmes





Teaching-Learning

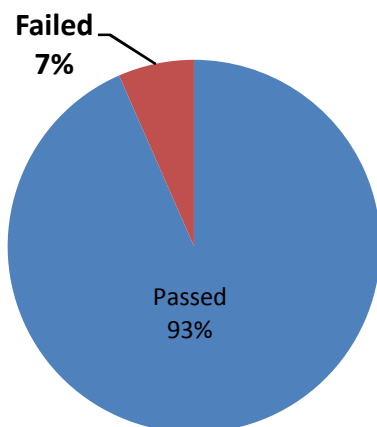
- Academic Calendar of teaching and learning process well in advance of sessions
- Student centric learning through extensive use of ICT tools
- Blending learning with e-resources through available free access to Library internet
- Shown videos and simulations for biological phenomena
- For experiential learning -Mandatory practical class -hands on experience in various techniques
- Field and project work in more than 90% courses
- Students are encouraged to discuss recent developments with the faculty members
- Students are encouraged for seminar presentations
- Exposing the students to internationally as well as nationally renowned scientists
- For student evaluation we conduct internal assessment test during mid semester and finally end of semester exam.
- For slow learners- encourage students to meet the teachers in spare time to clear their doubts. If need be extra classes are organized.

Student Support & Progression

M. Sc. awarded during 2012-2017



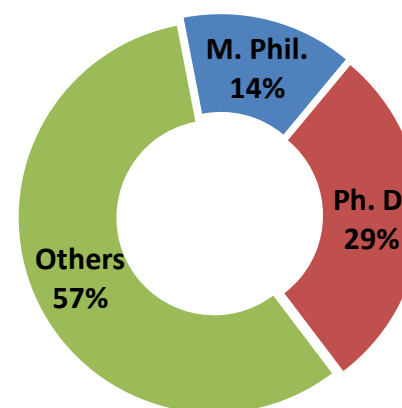
M.Sc. Pass percentage



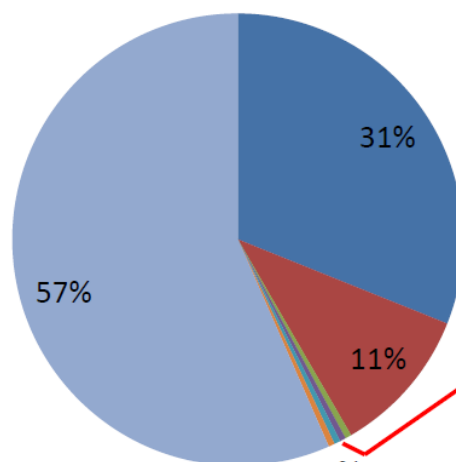
Appeared - 486
Passed M.Sc.- 454



After M.Sc.



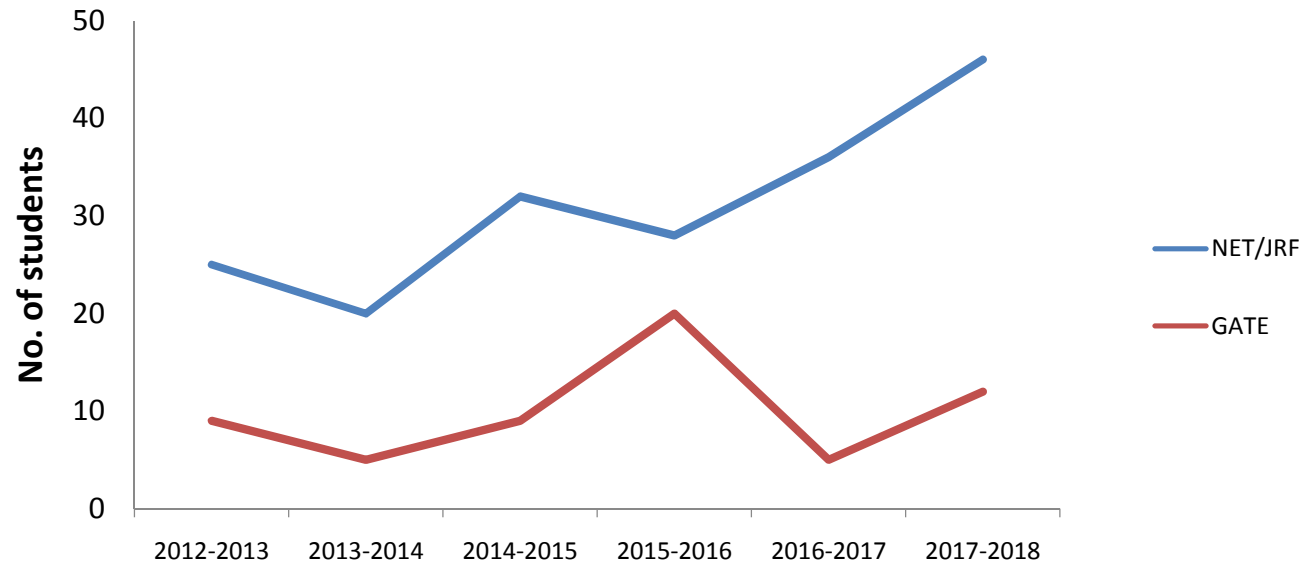
**Competitive Exams
qualified by M.Sc. Students**



NET-JRF-	141
GATE-	48
GMAT-	02
TOFEL-	02
Civil Services-	02
Others-	257

Department of Zoology

Students qualified **NET-JRF/GATE**

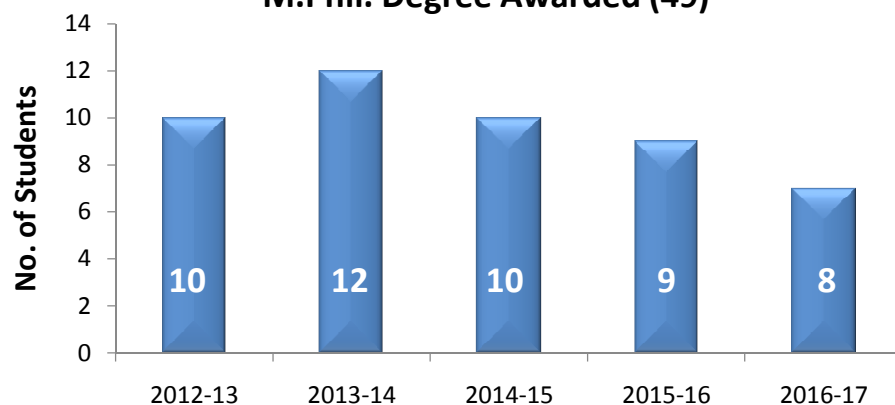


Student Support & Progression

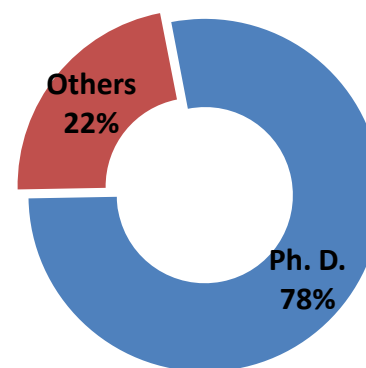
M.Phil. and Ph.D. awarded during 2012-2017



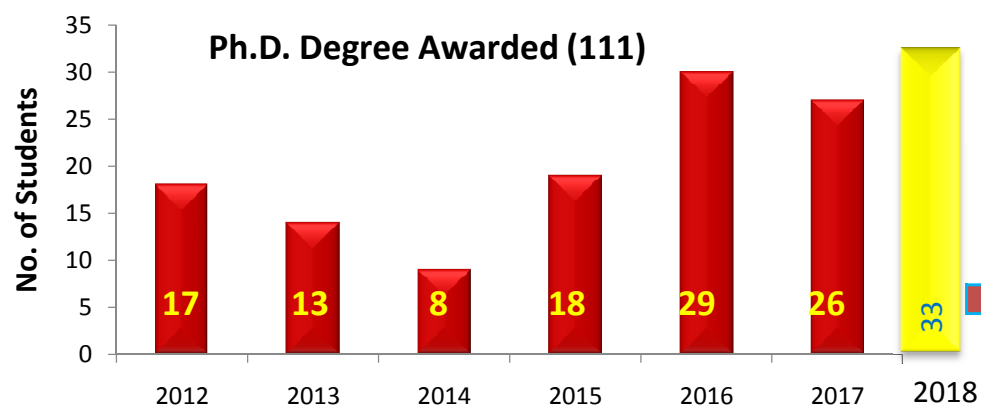
M.Phil. Degree Awarded (49)



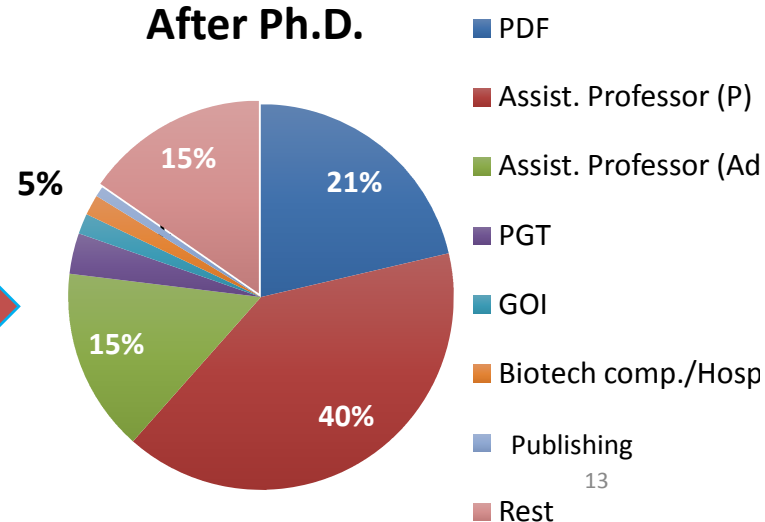
After M.Phil.



Ph.D. Degree Awarded (111)



After Ph.D.

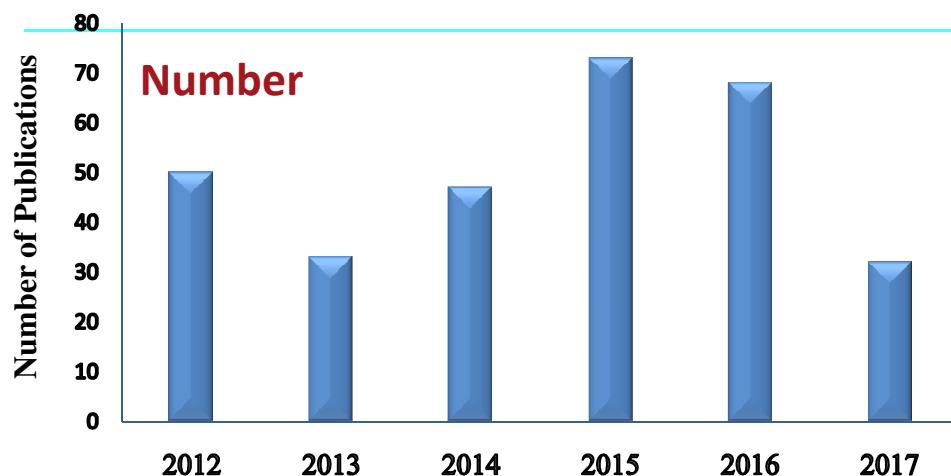


Research, Innovation & Extension:



- Publications Profile
- Grants
- Conferences
- Committees, Editorial Boards

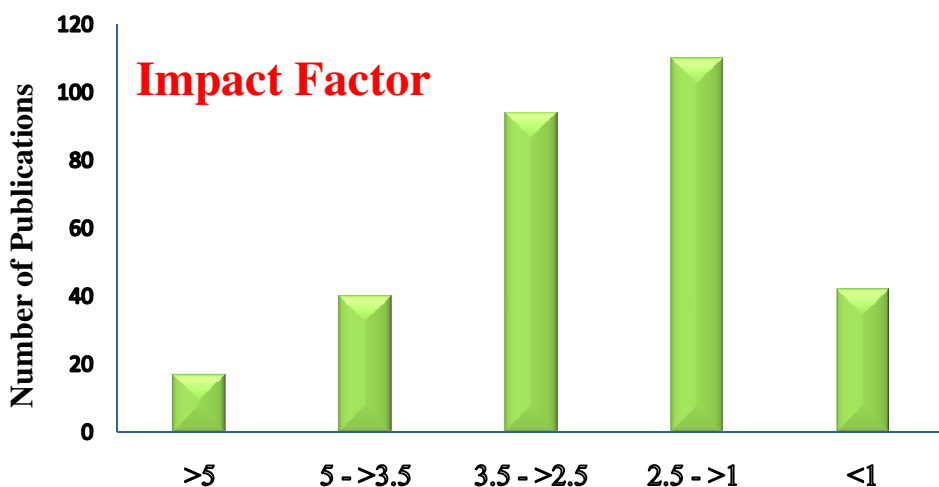
PUBLICATION PROFILE



Total number 322

h-index of Faculty
ranges from 10-44

Overall Citation- 16500
Citation index- 2306



Impact factor 0.6-16.77

Books edited- 4
Chapters in books- 16

Faculty members contributed to ePathshala content in Zoology, an initiative of MHRD, GOI



Faculty members contributed as Principal Investigator, Co-Principal Investigator, Paper Coordinator, Content Reviewer for the Zoology courses

Development Team

Principal Investigator:	Prof. Neeta Sehgal Department of Zoology, University of Delhi
Co-Principal Investigator:	Prof. D.K. Singh Department of Zoology, University of Delhi
Paper Coordinator:	Prof. Anju Srivastava Department of Zoology, University of Delhi
Content Writer:	Dr. Pooja Arora Hansraj College, University of Delhi
Content Reviewer:	Prof. Sukhmahendra Singh Banaras Hindu University

Subject: Zoology

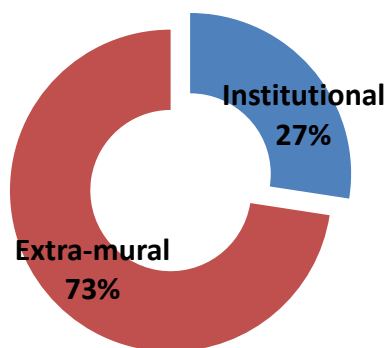
Production of Courseware
-Content for Post Graduate Courses

Paper : 10: Immunology
Module : 10: T- Lymphocytes: T-cell Activation and Differentiation

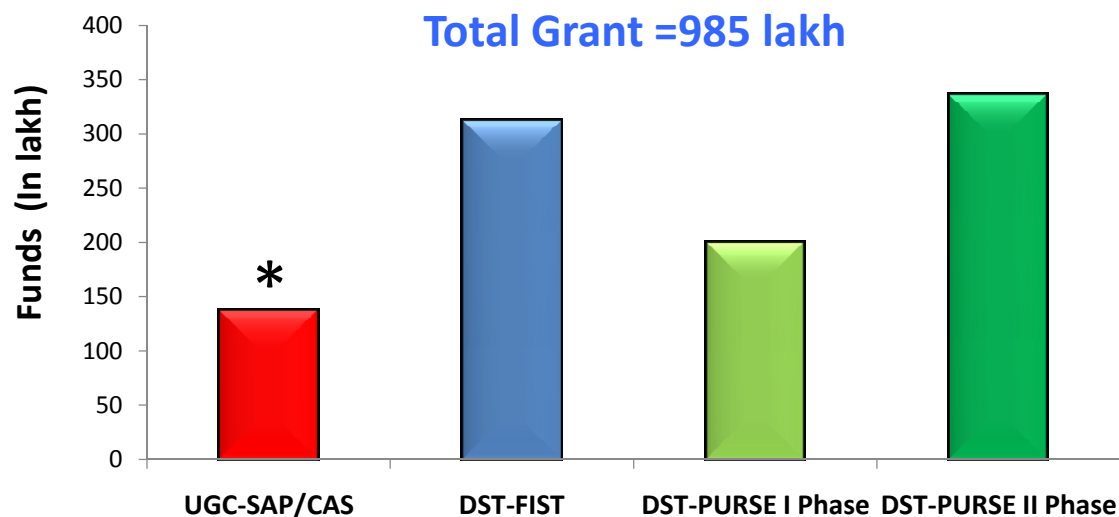
Projects funded by DST-FIST, UGC-SAP/CAS, DST-PURSE etc. -total grants (During 2012-2017)



Total funding during 2012-2017
(Total 3586.8 lakh)

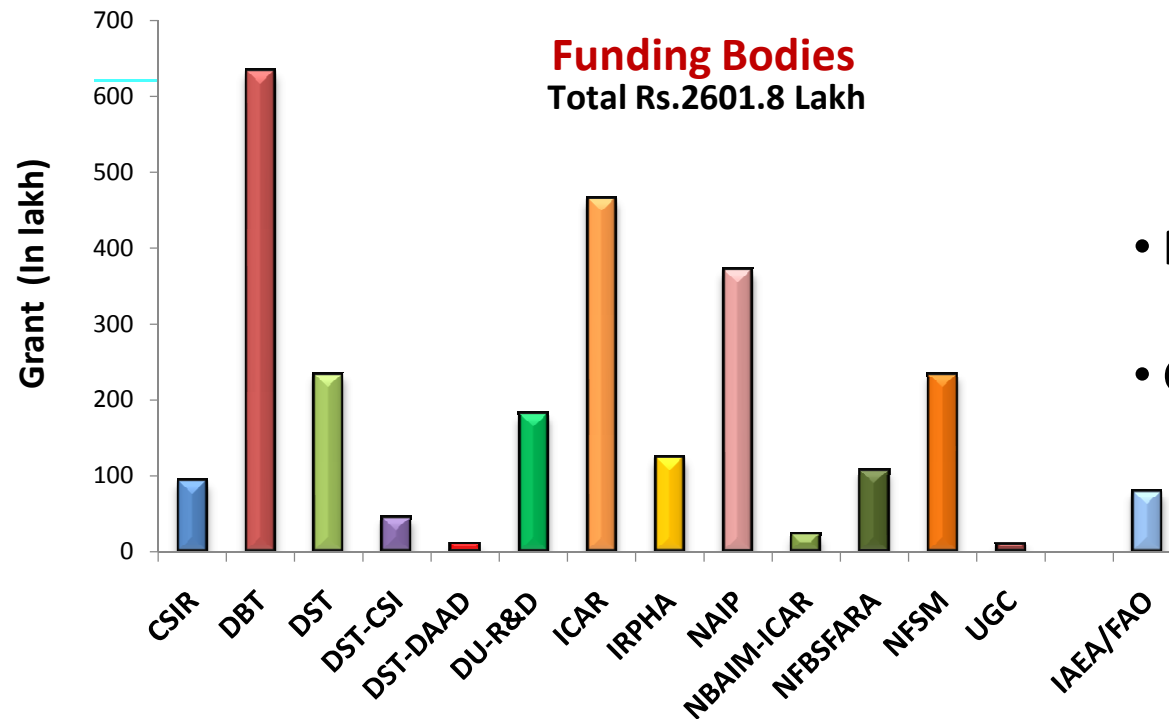


* Department of Zoology has been recognized as 'Centre for Advanced Studies' since **1963**
First in the country



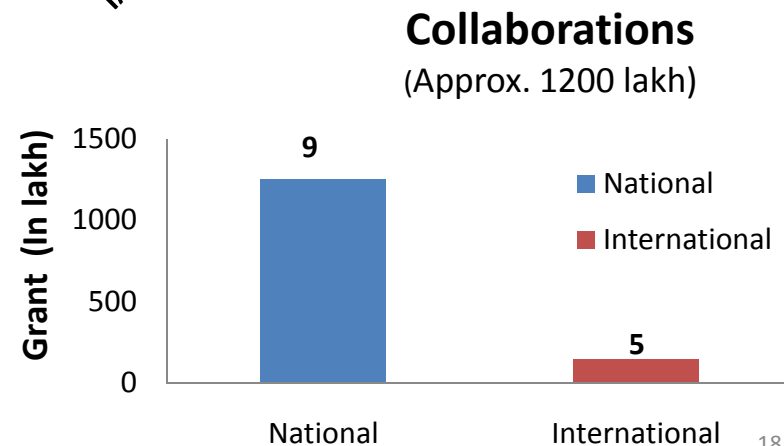
Extra-mural Funding

During 2012-2017



- Fairly good extra-mural funding
- Good collaboration

National & International Collaborative Research



Research Profile (2012-2017) contd....



Scientific meetings, Workshops and Conferences

Faculty

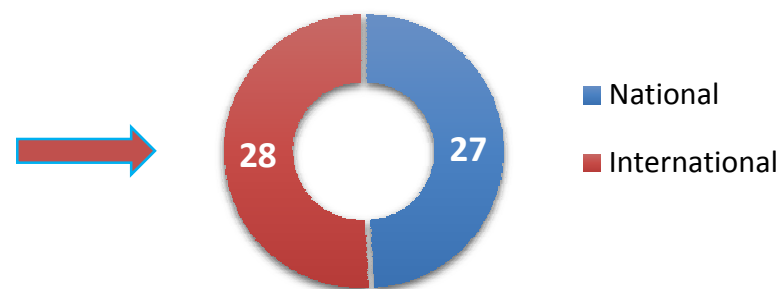
Year	International Conference			National Conference		
	Organized	Attended	Resource person	Organised	Attended	Resource person
2012-13	1	12	5	1	10	5
2013-14		10	4	1	9	5
2014-15	1	14	5		5	2
2015-16	1	7	2	3	6	3
2016-17	2	13	6	2	39	12
Total (2012-2017)	5	59	22	7	69	27

Research student participation in conferences [2015-2017]

Student awards for poster and oral presentations in:

National conferences: 9

International conferences: 4



Research Profile (2012-2017) contd....

Visits and Interaction with International Faculty



(*Alumni DU)

Faculty:

Dr. Michael Gorman	University of California, San Diego, USA
Dr. Gerald Lincoln	University of Edinburgh, UK
Dr. Satchidananda Panda	Salk Institute for Biological Studies, USA
Dr. Pascal Simmonet	Université de Lyon, France
Dr. Tim Vogel	Université de Lyon, France
Dr. Hans Bischoff	University of Bielefeld, German
Prof. Franz Bairlein	Wilhelmshave, Germany
Dr. Anil Koul*	Respiratory Infections Discovery, Johnson and Johnson
Dr. Scott Edwards	Harvard University, USA
Dr. Barbara Helm	University of Glasgow, UK
Dr. Christopher Guglielmo	University of Western Ontario
Dr. Peter Sly	Queensland Children's Medical Research Institute
Dr. Hans Herman Richnow	Helmholtz Centre for Environmental Research – UFZ
Prof. Bharat B. Aggarwal*	Cancer Center, MDACC, Houston, Texas, USA
Prof. Ashok Kumar*	School of Medicine, University of Louisville. USA
Prof. Anil Shanker*	Meharry Medical College, Vanderbilt University, USA
Prof. Diego A. Golombek	University of Quilmes, Argentina

Research Profile (2012-2017) contd....

Visits and Interaction with International students



Students:

Phoebe Oldach, USA

Iris Schilling, Switzerland

Langping Wu, Germany

Hiep Le, USA

Gabrielle Davidson, University of Cambridge, UK

**Our Students have also visited several Institutions
abroad under:**

Indo-Swiss,

Indo-Norwegian,

Indo-US,

FAO/ IAEA program funding

Faculty serving in Editorial boards



- **Journal of Biological Chemistry (JBC)**
- Indian J. of Microbiology (Springer Press)
- **mSystems, published by American Society for Microbiology (ASM)**
- Indian Journal of Microbiology (INJM), published by Springer, India Ltd.
- journal BMC Biotechnology published by BioMed Central Ltd., UK
- OA Biotechnology, published by OA Publishing, London
- International Journal of Systematics and Evolutionary Microbiology (IJSEM),
- *Indian Journal of Entomology*
- ***J. Nuclear Agric. Biol***
- **Journal of Genetics**
- **General and Comparative Endocrinology (USA/UK)**
- **Current Science**
- **Aquaculture** (Blackwell Publishing).
- Mediterranean Aquaculture Journal
- Israeli Journal of Aquaculture

All faculty members are reviewers in many journals

Faculty serving in National- International committees & Societies



- Asia and Oceania Society for Comparative Endocrinology
- International Federation of Comparative Endocrine
- Ethological Society of India.
- Indian Council of Medical research
- Indian Society of cell Biology
- Reproductive Biomedicine, Amity University, Noida
- Indian Society for Chronobiology
- Indo-US Center for Biological Timing
- International Society of Avian Endocrinology
- CIFE, Mumbai Elected
- Indian Association of Teachers in Biological Sciences
- SERB School in Avian Biology, New Delhi
- Association of Microbiologists of India
- Indian Ocean Region, American Society for Microbiology
- Indian Network for Soil Contamination and Research (INSCR)



Faculty in University Administration

Many faculty members contribute in the University administration by serving at key positions :

Earlier

Prof. Umesh Rai: Director South Campus

Prof. Rup Lal: Dean Examination

Prof. M. M. Chaturvedi: Director CIC, Dean Research (Life Sciences)

Currently

Prof. Neeta Sehgal: Proctor

Prof. Y. Singh: Dean Research (Life Sciences)

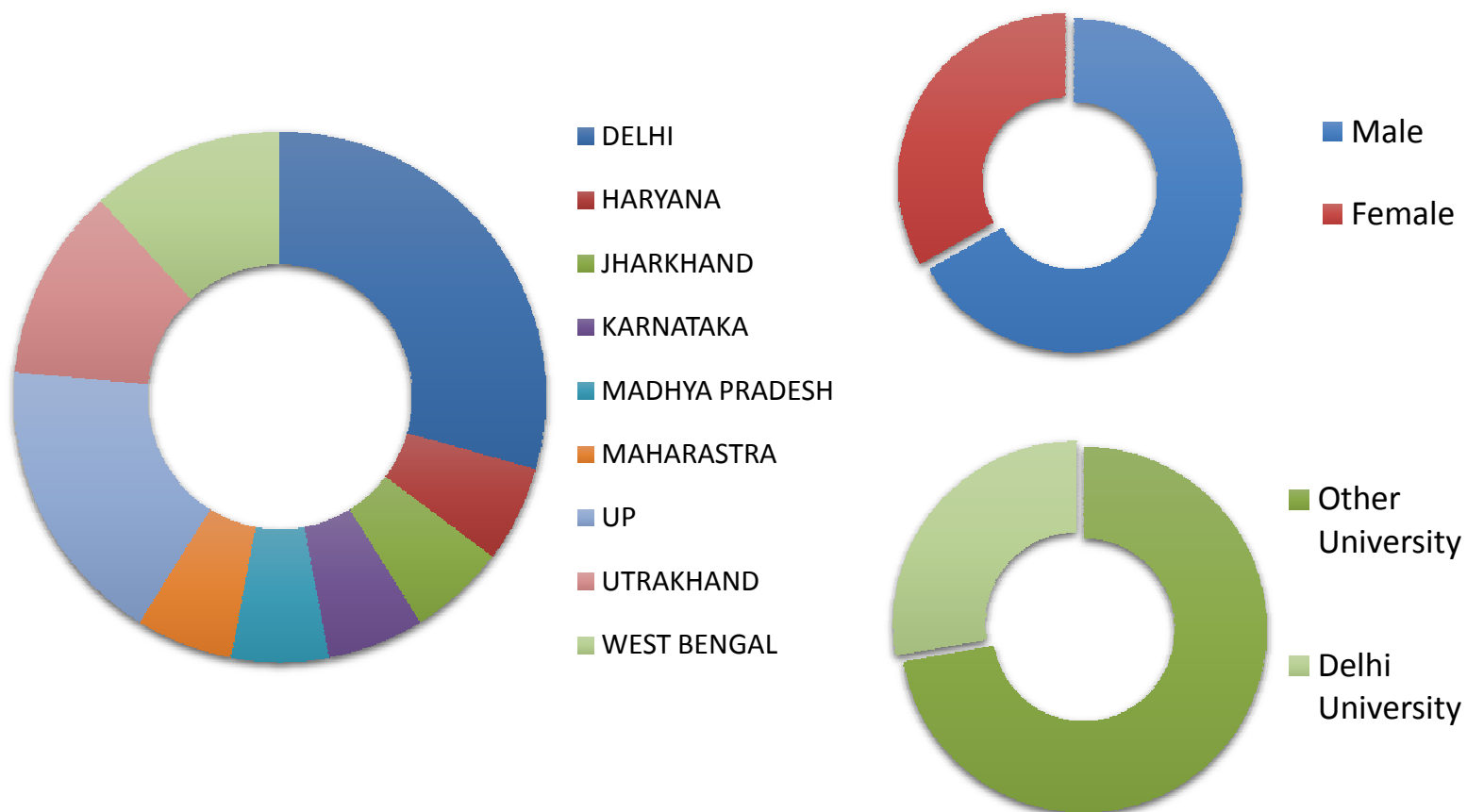
Prof. D.K. Singh: Dean (Recruitment)

Other than this several faculty members are contributing in hostel administration and in other administrative roles

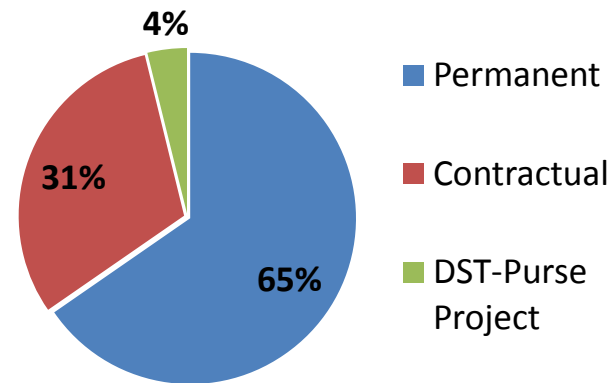
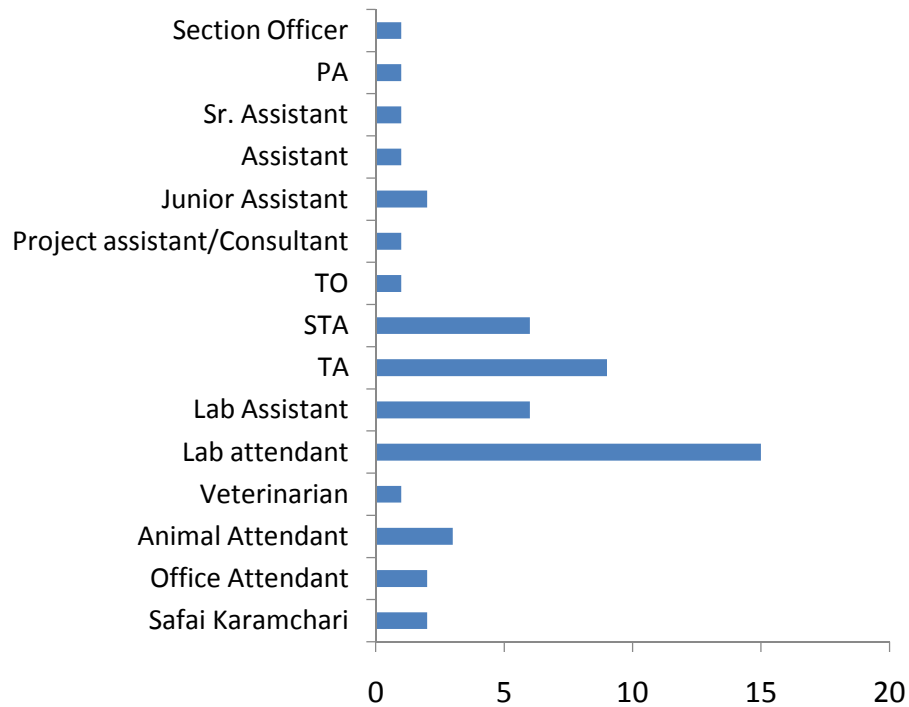


Teaching Staff

(We are only 17 out of total sanctioned 34 position)



Support Staff (52)



Infrastructure & Learning Resources



S.No.	Infrastructure Head	Department of Zoology
1	Library	10293 Books (Recent, Archives, Rare books)
2	Internet facilities for staff and students	100 computers, Wi-Fi enabled
3	Total number of class rooms	3, all ICT equipped, Smart boards
4	Class rooms with Computers and ICT facility	Yes
5	Teaching Laboratories	7, all ICT equipped, Smart boards
6	Research Laboratories	18, Well equipped
7	Museum	Specimens, Skeletons, Stuffed animals
8	Animal House	Mice, Birds, Lizards, Fishes, Insects, Microbes

Library



Rich library - > **10,000 Books**

Multiple copies of **reference books** (Recent editions)

Books on **Advance Research Topics, Methodologies /protocols**, etc.

Year	Budget	Expense
2013-2014	280000	279872
2014-2015	320000	319426
2014-2016	320000	322695
2016-2017	280000	195482

- Enough seating arrangement
- Equipped with computers/ laptops
- Wi-Fi facility



Internet facilities for staff and students



- **> 100 Computers** all connected to internet
- Used by students, faculty and staff.
- ‘Bioinformatics & Computational Biology’ class in M.Sc.
- Department is Wi-Fi enabled



Class Rooms



- 3 Class rooms
- Smart Boards &
- ICT facilities
- Wi-Fi enabled



Department of Zoology



Teaching Laboratory



Genetics lab

- **Laboratories** as per GLP standard
- **Equipment** used for teaching
 - Spectrophotometer
 - Refrigerated incubator shaker
 - Data Acquisition system
 - Centrifuges
 - Electrophoresis units
 - Thermocycler
 - Laminar Flow
 - Microscopes , etc.

Teaching Laboratory(contd.)



Physiology lab



Fish biology lab



Entomology lab



New lab



Central Instrumentation Facility



- Fluorescence Microscopes
- HPLC, FPLC, GLC, GC, 2D PAGE,
- Lyophilizers,
- Nanodrop, Spectrophotometers,
- ELISA Reader
- Ultracentrifuges & High Speed Centrifuges
- Gradient PCR & Real Time PCR
- Gel-documentation system,
- FACS

First 'Natural History Museum' in the country which is still functional



Animal House





Animal House (cont...)

- Registered with CPCSEA and the current registration is valid till 21.03.2019
- The department has CPCSEA approved IAEC
- All protocols of experiments on animals are approved by IAEC
- The biological waste are disposed through the waste disposal service provider

Extension/Outreach activities

Lab to the Society



- Outreach program **for fish farmers** to educate better fish farming
- **Bioremediation program** at dumpsites
- **Health awareness** workshop & Screening Camps
- Research training **to undergraduate students** : DU, BHU, Amity, Bhartisadan, Trichy, ICB Kolkatta
- Outreach program **for school students**
- Faculty & students **help class 10-12th level kids** from very poor background for maths and science subject at Delhi University Women's Association (DUWA)
- Some students take care of **well being of stray animals** on campus

Lab to the Society



Help provided for better fish farming



Lab to the Society

Outreach Programme for Technology Development



Inauguration of outreach programme at Hexachlorocyclohexane contaminated dumpsites in presence of project partners from **University of Delhi**, **CSIR-IITR Lucknow**, **CSIR-NBRI Lucknow**, **TERI Delhi**, **Ramjas college**.

Lab to the Society

Women Health Awareness



PCOS
GYNAECOLOGIST-STUDENT INTERACTION
Meet Specialist Doctors
at
Auditorium, Department of Zoology, Delhi University (Gate-3)
Date: 12th August 2016, Time: 9:00 a.m.

"Polycystic Ovary Syndrome: What you need to know?"
Speaker: Dr. M. Gouri Devi, MD (Gynae.),
Director, Gouri Hospitals, IVF Specialist

Irregular periods? Acne?
Unwanted body hair?
Hair fall? Weight gain?

**IT MAY BE HORMONAL DISTURBANCE!
SAVE YOUR FERTILITY!**

**National Symposium and
Awareness Programme**
on
Life Style and Reproductive Health Challenges
Under Star Innovation Grant
Venue: Conference Centre, Daulat Ram College
North Campus, University Of Delhi
Date: 29 March 2017

Patrons	Speakers
Dr. Y.K. Tyagi Vice-Chancellor University of Delhi	Dr. Savita Roy Principal Daulat Ram College
Organizing Committee Mentor Prof. Rita Singh Department of Zoology	Prof. N.K. Lohiya, Jaipur University Current Scenario of Contraceptive Methods
Conveners Dr. Sarita Nanda Department Of Biochemistry Dr. Meetu Khosla Department of Psychology Dr. Jyoti Taneja Department of Zoology	Prof. Rajesh Sagar, AIIMS Psychiatric Aspects of Adolescence
	Prof. Suneela Garg, MAMC Health Perspectives of Youth
	Dr. Gauri Devi, Gauri Hospitals Polycystic Ovarian Syndrome
	Prof. Rita Singh, Delhi University Environmental Pollutants and Health Hazards

Lab to the Society



“Women Health and Cancer Screening Camp”

at Delhi University Women’s Association
Held on **April 7, 2017** on the occasion of
‘World Health Day’



Lab to the Society

Student visit to the Department



College Students

School Students

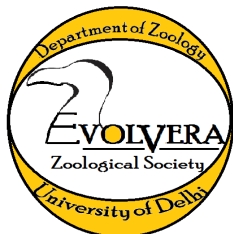


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Best Practices

- **Good governance :**
 - Democratic and participatory academic and administrative functions through Committees
 - Transparency
- **Creation of research culture among students and social bonding through community service:**
 - High amount of Extramural Research grants
 - Publications in high impact peer reviewed journals
 - High h-index
 - Technology/skill development-leading to better placement



OUR MOTO :

Evolvera-Zoological Society Department of Zoology, University of Delhi

“An innovation for today, an invention for tomorrow”

“आज की नवीनता, कल का आविष्कार”

Team Evolvera

Chief Patron:	Prof. M. M. Chaturvedi Head
Patrons:	Prof. Rup Lal, Prof. Neeta Sehgal, Prof. R.K. Seth & Prof. Namita Agrawal
President:	Mr. Dinesh Raj Pant
Vice President:	Mr. Mohit Jadli
Treasurer:	Ms. Monica
General Secretary:	Ms. Yashankita
Joint Secretary:	Mr. Sachin
Academic Secretary:	Ms. Sulochana Bagri
Cultural Secretary:	Ms. Sheetal Tushir

Activities

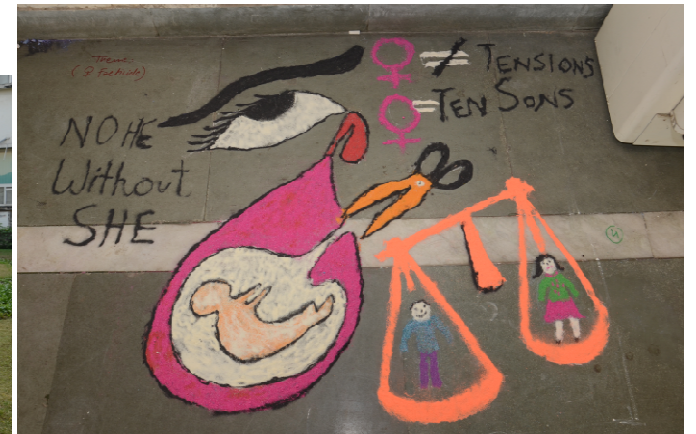
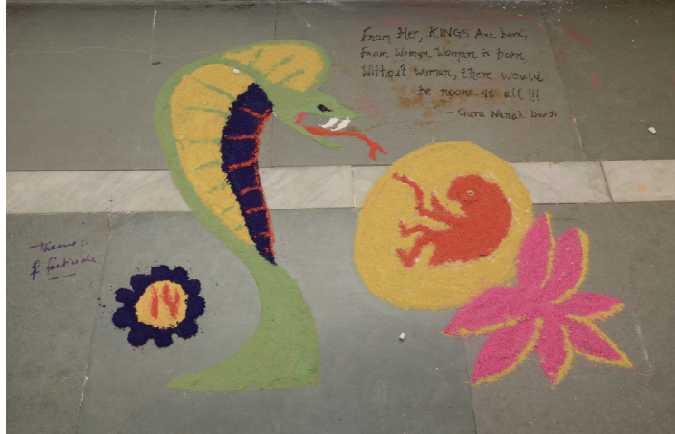
Invited lectures
Journal Club
Annual Festival
Lohri Celebrations
Fun for togetherness
NGO donation drive



Founded in: March 2015







Social and cultural activities organised

Shramdan for 'Swaakh Bharat' Initiative at the Department



Health and Environment awareness seminars and activities in the Department





Green Initiative in the Department



•Paper less functioning



Solar Panel

Department of Zoology

•Minimize water wastage





Strengths

- Diversity of faculty expertise in teaching and research
- Diverse model systems used for research and teaching
- Support system
- Interaction with students
- Interaction with Eminent scientists
- Extramural Funding

Opportunities

- Collaborative research opportunity
- Extension of applied and translational research for societal outreach activities

SWOC Analysis

Weakness

- Need to develop integrative intradepartmental research program
- Good feedback mechanism

Challenges

- Large class size
- Teacher student ratio not in place due to many vacant positions
- To inculcate entrepreneurship in students
- To develop teaching and research programs, which are novel, integrative that attracts best brain of the country
- Still need a better infrastructure and better resource



Way Forward

- *To develop teaching and research programs, which are novel, integrative that attracts best brain of the country*
- *To inculcate entrepreneurship in students*
- *Students involvement in various committees to encourage participative functioning*
- *Online Library cataloging/ management*
- *More green initiative to be undertaken*



Thanks