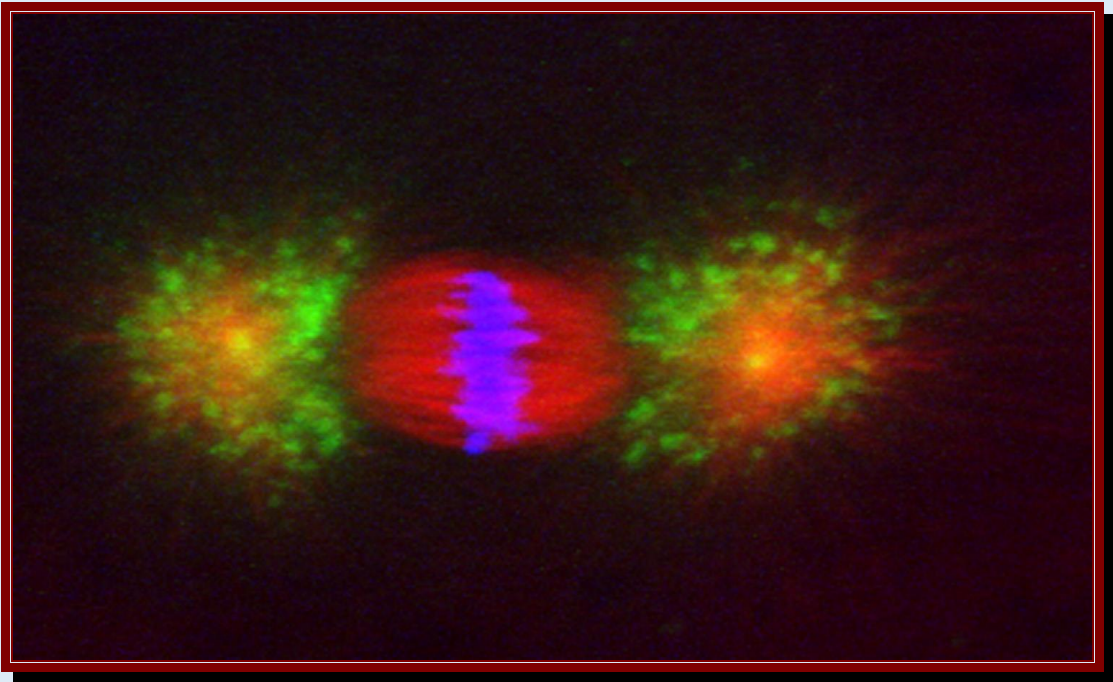


B3-III

**Department of Biological
Sciences**

(DBS)



Department of Biological Sciences

1. Name of the Department:

Department of Biological Sciences (DBS)

2. Year of establishment :

1960. TIFR was divided into Research Groups in the period 1945 – 1997. The present Departments were formed on December 12, 1997.

3. Is the Department part of a School/Faculty of the university?

The DBS is a part of the Faculty of Natural Sciences.

4. Names of programmes offered

(UG,PG,M.Phil.,Ph.D.,IntegratedMasters;IntegratedPh.D.,D.Sc.,D.Litt.,etc.)

1. Ph.D.

2. Integrated M.Sc.-Ph.D.

3. M.Sc.

There is no direct recruitment into an M. Phil Programme. In unusual circumstances as specified by the subject board, a candidate may be allowed to submit a Thesis for evaluation for award of an M. Phil degree. It is not an exit “option” but permitted at the discretion of the subject board.

5. Interdisciplinary programmes and departments involved

DBS members themselves perform interdisciplinary research and also collaborate with members of DCS, DNAP, NCBS, and other researchers outside the TIFR system.

6. Courses in collaboration with other universities, industries, foreign institutions, etc.

No courses are offered in collaboration with other universities etc.

7. Details of programmes discontinued, if any, with reasons

There are no such programmes.

8. ExaminationSystem:Annual/Semester/Trimester/ChoiceBasedCreditSystem

Students of the DBS are offered a Course Work programme based on a mixture of compulsory Core Courses, choice-based Elective Courses and compulsory Project Work, on topics of their own choice. The detailed structure is given in the table below.

Programme	Duration (years)		Basic & Core Credits	Advanced Credits	Research Credits	Total Credits
	Overall	Coursework				
Ph.D.	5	Completed during the first 2 years (together with research)	12	8	40	60
I-Ph.D.	6	Completed during the first 2 years (together with research)	12	16	32	60
M.Sc.	3	Completed during the first 2 years (together with research)	12	0	24	36

The Academic Session is divided into two semesters: the Autumn Semester (August – December) and the Spring Semester (February – June).

In each one-semester semester, students are evaluated by a Continuous Evaluation process consisting of

1. Assignments
2. Quizzes

3. Mid-semester Examination (for some advanced courses)
4. End-semester Examination
5. Paper presentation (for some courses)

All students are required to complete 12 Credits of basic course work. M.Sc. students are assigned labs as soon as they join, and begin their research project work immediately in parallel with the coursework. Ph.D. and I-PhD students undertake lab rotations in parallel with the basic coursework. Then, they are assigned to labs based on their lab rotation evaluations and their fit with the respective labs. They then undertake preparations towards their Comprehensive Exam. This consists of a Project Area Review (Project I) and a Project Proposal Defense (Project II) which is followed by an oral comprehensive exam. Both these are evaluated by a Committee of Faculty Members that includes their Thesis Committee and additional members from the department. A student is deemed to have met the requirements for registration if they perform satisfactorily on their Project I, Project II, Oral comprehensive exam, and lab work during the period after being assigned their lab.

9. Participation of the department in the courses offered by other departments

A few of our faculty teach some lectures in other departments of TIFR (such as DCS). Some faculty also teach at CBS and IISER-Pune.

DBS students are free to choose advanced courses offered in other Departments, as long as their advisor agrees it is useful for their training.

10. Number of faculty positions:

	Faculty Designation with DAE Grade	Abbreviation (Item 11)	Number
1.	Senior Professor (I)	Sr. Professor (I)	2
2.	Professor (H)	—	4
3.	Associate Professor (G)	Assoc. Professor (G)	4
4.	Reader (F)	—	4
5.	Fellow (E)	—	—
6.	Total		14

11. Faculty profile with name, qualification, designation, area of specialization, experience and research underguidance

	Name	Deg*	Designation	Specialisation	Exp [†]	Stu [‡]
1.	B.J. Rao	Ph.D.	Sr. Professor (I)	Molecular Biology, Biochemistry	25	7
2.	G.K.Jarori	Ph.D.	Professor (H)	Biochemistry	28	3
3.	H. Sinha	Ph.D.	Reader (F)	Genetics	5	3
4.	K. Ray	Ph.D.	Professor (H)	Cell Biology, Biochemistry	18	8
5.	M. Mishra	Ph.D.	Reader (F)	Cell Biology, Genetics	2	3
6.	M. Narasimha	Ph.D.	As. Professor (G)	Cell Biology, Genetics	20	6
7.	M. Sonawane	Ph.D.	Reader (F)	Cell Biology, Genetics	8	12
8.	R. Mallik	Ph.D.	As. Professor (G)	Biophysics, Biochemistry	10	7
9.	S. Nair	Ph.D.	Reader (F)	Cell Biology, Genetics, Development	3	2
10.	S. P. Koushika	Ph.D.	As. Professor (G)	Cell Biology, Genetics	10	7
11.	S. Sharma	Ph.D.	Sr. Professor (I)	Immunology, Biochemistry	29	5
12.	S. Tole	Ph.D.	Professor (H)	Neuroscience, Developmental Biology	17	4
13.	U. Kolthur	Ph.D.	As. Professor (G)	Molecular Biology, Biochemistry	8	12
14.	V. Vaidya	Ph.D.	Professor (H)	Neuroscience	16	6

* Highest degree obtained

† Years of Experience as a regular Faculty Member (TIFR and elsewhere)

‡ Ph.D. students guided within the last 4 years (including those joined and those graduated)

12. List of senior Visiting Fellows , adjunct faculty, emeritus professors

Senior Visitors :

- Dr. Abhay Dandekar
- Prof. Gyan Bhanot
- Prof. Sylvian Pied

Adjunct Faculty :

- Prof. Sudipto Maiti
- Dr. Jyotishman Dasgupta
- Prof. Sampathkumaran
- Prof. Sriram

13. Percentage of classes taken by temporary faculty–programme –wise information

DBS does not employ temporary faculty.

14. Programme-wise Student Teacher Ratio

	Programme	Students (S)	Faculty (F)	Ratio S/F
1.	Ph.D.	31	14	2.2
2.	I.-Ph.D.	11	14	0.79
3.	M.Sc.	15	14	1.07

15. Number of academic support staff(technical)and administrative staff:

Scientific and technical Staff	Administrative and auxiliary Staff
10	6

16. Research thrust areas as recognized by major funding agencies

- Neuroscience
- Biochemistry
- Parasitology
- Biophysics
- Cell Biology
- Developmental Biology
- Neural and Developmental Biology
- Parasite Biology
- Motor Biology

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

National

	Agency	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	Swarnajayanti Fellowship(DST)	Investigating the role of mammalian sirt4 in the regulation of mitochondrial function and retrograde signaling to the nucleus.	205	2013-2018	Ullas Kolthur
2.	Hindustan Lever Ltd.	Role of metabolic input endocrine signals and genetic factors in regulating physiological homeostasis with implication in diseases such as diabetes and obesity.	90	2013-2016	Ullas Kolthur and Vidita Vaidya.
3.	DBT	Investigating the role of axonal transport in sensory	53	2012-2015	Sandhya Koushika

	Agency	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
		neuron regeneration.			
4.	CSIR	Understanding role of synapses in the regulation of pre-synaptic vesicle transport in C. elegans.	22	2010-2013	Sandhya Koushika
5.	DBT	Mechanisms regulating the neuron-glia cell fate switch in the neocortex	90	2014-2019	Shubha Tole
6.	Lady Tata Memorial Institutional Research Funds	Effect of Plasmodial infection on neurogenesis and cognitive behavior in murine malaria model".	20	September 2009-2013	Shobhon Sharma and Vidita Vaidya
7.	ICMR	Effect of mild malaria on neural cells in a rodent model. Correlation with specific immune responses	200	2013-2016	Shobhon Sharma and Vidita Vaidya
8.	DBT	Cell migration in the developing Olfactory Bulb: an evolutionary study	280	2011-2014	Shubha Tole
9.	DBT	To identify molecular mechanisms underlying the somatic regulation of germline stem cell divisions in Drosophila testis	47	2012-2015	Krishanu Ray

International

	Agency	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	Wellcome Trust-DBT India alliance	Identification of a regulatory gene network essential for the maintenance of epidermal architecture and integrity	350	2011-2017	Mahendra Sonawane
2.	HHMI (Howard Hughes)	HHMI International Early Career Scientist Grant - Investigating axonal transport	486	2012-2017	Sandhya Koushika
3.	Wellcome Trust-DBT India alliance	Quantitative investigation of motor protein function in lipid droplet fusion and fission	328	2013-2018	Roop Mallik
4.	Wellcome Trust-DBT India alliance	Relevance of State of Ploidy on Vertebrate Embryogenesis	320	2014-2019	Sreelaja Nair
5.	Wellcome Trust-DBT India alliance	Molecular understanding of the process of cytokinesis	320	2015-2020	Mithilesh Mishra

18. Inter-institutional collaborative projects and associated grants received

National

	Collaborating Institutions	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	IMSC, Chennai	Mechanisms of active intracellular transport: connecting theory and experiment	305	2012-2017	Sandhya Koushika

International

	Collaborating Institutions	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	IPBS (CNRS) France, via CEFIPRA	Studying the interactome and NAD- dependant deacetylase sirt1 in the testis.	29 (+ Eur 74000 for the French group)	2012-2015 and 2015-2016	Ullas Kolthur (TIFR), Anne Gonzalez-de-peredo(IPBS)
2.	INSERM, France	Serotonergic regulation of mood related behavior	100	2014-2017	Vidita Vaidya and Patricia Gaspar
3.	Unive rsity of Queensland	Indo-Queensland Collaboration grant, Stimulation of adult neural stem cells by norepinephrine: A promising target for the treatment of depression	99	2011-2014	Vidita Vaidya

19. Departmental projects funded by DST-FIST;UGC-SAP/CAS,DPE;DBT,ICSSR,AICTE,etc.;total grants received.

	Agency	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	DAE	XII Plan Project – DBS (18 projects)	4703	2012-2017	All DBS faculty

20. Research facility/centre with

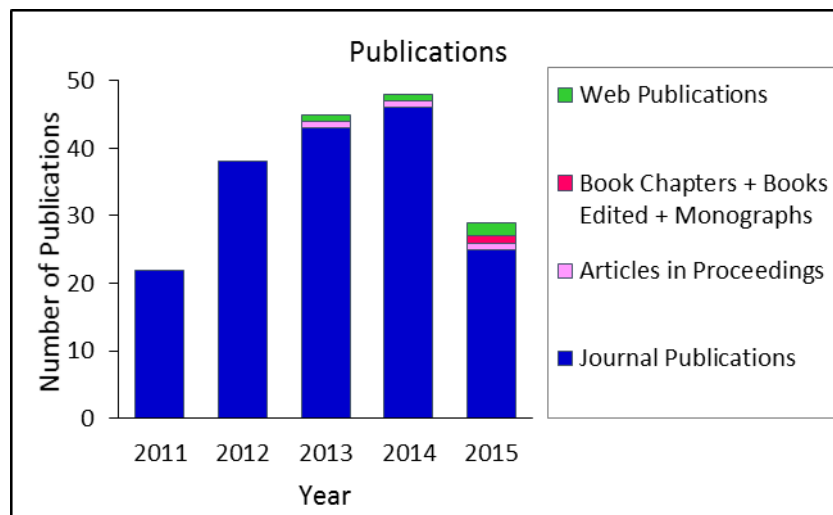
- State recognition : None
- National recognition : None
- International recognition: None

21. Special research laboratories sponsored by/created by industry or corporate bodies

No special research laboratories sponsored/created

22. Publications:

DBS	Journal Publications	Articles in Proceedings	Technical Reports	Web Publications	Book Chapters	Books Edited	Mono - graphs
2010-11	22	0	0	0	0	0	0
2011-12	38	0	0	0	0	0	0
2012-13	43	1	0	1	0	0	0
2013-14	46	1	0	1	0	0	0
2014-15	25	1	0	2	1	0	0
Total	174	3	0	4	1	0	0



* **Citation Index–range /average :**

- Total number of citations: 12530 (Source- Scopus and Google Scholar)
- Number of citations per faculty: 895

* h-index

- Range: 5 – 22

23. Details of patents and income generated

None

24. Areas of consultancy and income generated

	Faculty Member	Project Name	Company Name	Duration	Income
1.	Ullas Kolthur	Role of metabolic inputs, Endocrine signal and genetics Factors in regulating physiological homeostasis with implications in diseases such as diabetes and obesity	Hindustan lever Ltd.	2013-2016	3.5 Lakhs /year

25. Faculty selected nationally/internationally to visit other laboratories/institutions /industries in India and abroad

National

	Name of Faculty member	Place visited	Date (MM/YYYY)
1.	Shobhona Sharma	Institute of Science, Mumbai	08/2013
2.	Shobhona Sharma	KBP College, Navi Mumbai	09/2013
3.	Shobhona Sharma	LSS-BARC, Mumbai	11/2013
4.	Roop Mallik	NCL, Pune	07/2015
5.	Roop Mallik	BARC, Mumbai	12/2014
6.	Mithilesh Mishra	Jadavpur University, Kolkata	12/2015
7.	Mahendra Sonawane	NCBS, Bangalore	01/2012
8.	Mahendra Sonawane	University of Pune	02/2012
9.	Shubha Tole	IISER-Pune Science Club	03/2015
10.	Shubha Tole	Ramaglinaswamy Fellows' Conclave	01/2013
11.	Shubha Tole	Swati Maiti memorial Oration IISC	01/2013
12.	Shubha Tole	ACTREC, Navi Mumbai	12/2012
13.	Shubha Tole	Miranda house, New Delhi	07/2012
14.	Sandhya Koushika	NCCS, Pune	01/2013
15.	Ullas Kolthur	NIMHANS, Bangalore	11/2013
16.	Ullas Kolthur	IISER-Pune	2014
17.	Ullas Kolthur	IIT-Kanpur	2013
18.	Ullas Kolthur	NCBS, Bangalore	2015
19.	Ullas Kolthur	ACTREC, Navi Mumbai	2014
20.	Gotam Jarori	Annual Meeting of Society of Biological Chemists (India), Bangalore	2010-2011
21.	Shobhona Sharma	Guha Research Centre	2010-2011
22.	Shobhona Sharma	Molecular Immunology Forum, Delhi	2010- 2011
23.	Shubha Tole	FAONS meeting, Lucknow	Nov25-30,2011
24.	Vidita Vaidya	Annual Neuroscience Meeting	2011
25.	Ullas kolthur	Annual Meeting of Society of Biological Chemists (India), Bangalore	Dec-2010

26.	Ullas Kolthur	Transcription meeting, Bangalore	Jan 2011
27.	Krishanu Ray	M2T2 Meeting, Ooty	Jan 2011
28.	B.J.Rao	GRC	Sept 2010
29.	B.J.Rao	Annual Meeting of Society of Biological Chemists (India), Bangalore	Dec 2010
30.	B.J.Rao	Transcription meeting, Bangalore	Jan 2011
31.	Maithreyi Narasimha	Nucleation, Aggregation and Growth Bangalore.	July 2010
32.	Maithreyi Narasimha	Advanced school on Living Mechanics ,Bangalore	Nov. 2010
33.	Roop Mallik	Molecular motors Tracks and Transport, Pachgani ,	Feb 2011
34.	Himanshu Sinha	Yeast Meeting, IIT Mumbai	Dec. 2011
35.	Ullas Kolthur	Chromatin Meeting	2012
36.	Ullas Kolthur	Transcription Meeting	2012
37.	Ullas Kolthur	SBC	2012
38.	Gotam Jarori	SBC	2012
39.	Shubha Tole	Neuroscience Meeting	2012
40.	Krishanu Ray	Motor Protein Meeting, Bhopal	2012
41.	Krishanu Ray	Indian Drosophila Meeting	2012
42.	Shobhona Sharma	Immunology forum	2012
43.	Shobhona Sharma	Biophysical Society	2012
44.	Shobhona Sharma	GRC, Bangalore	2012
45.	Vidita Vaidya	IAN Meeting, TIFR, Mumbai	2012
46.	B J Rao	Indian society of cell biology, Bangalore	2013
47.	B.J.Rao	Transcription meeting	2013
48.	B.J.Rao	Chromatin Meeting, Bangalore	2013
49.	B.J.Rao	GRC, Bangalore	2013
50.	Gk Jarori	Annual meeting of the Biology, Hyderabad	12/2013
51.	GK Jarori	Indian Biophysical Society Meeting	1/2014
52.	H Sinha	International Yeast Conference,	11/2014

		IMTECH, Chandigarh	
53.	K.Ray	EMSI Annual Meeting	7/2013
54.	M.Narasimha	Mechanical Manipulations at the scale of the cell and beyond, Bangalore	4/2013
55.	M.Narasimha	Indian society for cell biology, Bangalore	12/2013
56.	M.Narasimha	Microscopy courses, Bangalore	9/2013
57.	Mahendra Sonawane	Indian society of cell biology, Bangalore	12/2013
58.	Roop Mallik	Frontiers in modern biology meeting, IISc Bangalore	6/2013
59.	Shobhona Sharma	YIM, GRC, Annual Meeting of Society of Biological Chemists, Hyderabad	12/2013
60.	Shubha Tole	XXXI Annual meeting of Indian Academy of Neurosciences, Allahabad	10/2013
61.	Ullas Kolthur	Annual Meeting of society of Biological Chemist, Hyderabad	12/2013
62.	Ullas Kolthur	EMBO – India Bangalore	11/2013
63.	Ullas Kolthur	Annual Meeting of Society for Mitochondrial Research and medicine, Nimhans Bangalore	11/2013
64.	Ullas Kolthur	Mahabaleshwar Seminar, Mahabaleshwar	01/2014
65.	Ullas Kolthur	Inter organelle communication, Bangalore	03/2014
66.	Sandhya P.Koushika	Molecular Motors, transport and trackers, Mahabaleshwar	01/2013
67.	Sandhya P.Koushika	Transport and neurodegenerative disease school, IIT B school	01/2013
68.	Sandhya P.Koushika	Indian society for developmental biology meeting, TIFR Mumbai	12/2012
69.	Roop Mallik	All India Cell Biology conference, IISc Bangalore	3/2014
70.	Roop Mallik	Physics biology meeting, Bangalore	08/2013
71.	Roop Mallik	Soft matter meeting, IISER, Pune	10/2013
72.	Roop Mallik	Fluorescence correlation spectroscopy workshop, IISc, Bangalore	11/2013

73.	Roop Mallik	Meeting of the society of the biological chemist ACTREC, Mumbai	11/2013
74.	Roop Mallik	Frontiers of Modern Biology meeting, IISc Bangalore	6/2013
75.	Roop Mallik	Wellcome- DBT Alliance Annual fellows meeting, Hyderabad	10/2013
76.	Sreelaja Nair	Frontier of Modern Biology meeting, Bangalore University.	07/2013
77.	Maithreyi Narasimha	Indian Society of Drosophila meeting	12/2013
78.	Krishanu Ray	Annual meeting of the electron Microscopy, SINP, Kolkotta	07/2013
79.	Krishanu Ray	Indian Society for Developmental Biology, Annual meeting, TIFR, Mumbai	12/2013
80.	Shobhona Sharma	Indraprastha International conference on biotechnology ,New Delhi	10/2013
81.	Shobhona Sharma	IX DAE – BERNs life sciences Symposium, BARC, Mumbai	11/2013
82.	Shobhona Sharma	ICGEB, New Delhi	12/2013
83.	Mahendra Sonawane	Indian Society for Developmental Biology, Annual meeting, TIFR, Mumbai	12/2013
84.	Mahendra Sonawane	Indo- German meeting, IISER, Mohali	10/2013
85.	Vidita Vaidya	Adult Neurogenesis, Mumbai	9/2014
86.	Roop Mallik	CHASCON Meeting, Punjab University	2/2015
87.	Roop Mallik	National symposium on Frontiers of Biology, Kolkata	01/2015
88.	B.J.Rao	International conference on chromosome stability, Bangalore	12/2014
89.	B.J.Rao	International Conference on Genome Architecture and cell fate regulation, Hyderabad	12/2014
90.	B.J.Rao	Recent Trends in Biomedical and Translational Research -2014, IIT Roorkee	12/2014
91.	B.J.Rao	5 th Asian chromatic Conference, Bangalore	01/2015

92.	B.J.Rao	18 th Transcription Assembly meeting, IISER, Pune	04/2015
93.	B.J.Rao	National seminar on Recent trends in Biology Pune University	04/2015
94.	Shobhona Sharma	LAS teachers training session, St. Xaviers college, Mumbai	01/2015
95.	Shobhona Sharma	25 th National congress of Parasitology, Lucknow	10/2015
96.	Krishanu Ray	Axonal transport of soluble and membrane associated proteins, Health science innovation, Taj hotel, Mumbai	1/2015
97.	Himanshu Sinha	Symposium on Sanger's to next sequencing – The Genomics Era, 2 nd SN Genetics Convention, Chennai, India	2015
98.	Mahendra Sonawane	International conference on genome Architecture and cell fate Regulation, Hyderabad	12/2014
99.	Mahendra Sonawane	39 th Mahabaleshwar seminar on the recent trends in zebrafish genetics and development, Alibaug	3/2015
100.	Sreelaja Nair	International conference on genome Architecture and cell fate Regulation, Hyderabad	12/2014
101.	Sreelaja Nair	39 th Mahabaleshwar seminar on the recent trends in zebrafish genetics and development, Alibaug	3/2015
102.	Sandhya Koushika	NCCS, Pune	01/2013
103.	Sandhya Koushika	IISER-Mohali	10/2012
104.	Sandhya Koushika	I-AIM, Bangalore	9/2012
105.	Sandhya Koushika	MS University, Baroda	12/2013
106.	Sandhya Koushika	NBRC, Gurgaon	02/2015
107.	Sandhya Koushika	India C. elegans meeting	01/2016
108.	Sandhya Koushika	OSU healthsciences meeting, Mumbai	01/2015
109.	Sandhya Koushika	Symposium Presidency University, Kolkata	01/2015
110.	Sandhya Koushika	IBRO-APRC symposium, Mumbai	02/2015

111	Sandhya Koushika	Indian Society of Developmental Biology meeting, CCMB, Hyderabad	07/2015
112	Sandhya Koushika	Indo-French meeting Frontiers in Cytoskeleton Research: Coordination, adaptation, fine-tuning, IISER-Pune	10/2015
113	Sandhya Koushika	Society of Mitochondria research & medicine meeting, Madurai	11/2015
114	Sandhya Koushika	Indo-UK Frontiers of Science meeting, Khandala	10/2014
115	Sandhya Koushika	CPCSEA meeting, New Delhi	11/2014
116	Sandhya Koushika	Guha Research Conference, Khajuraho	12/2014
117	Sandhya Koushika	INNNI meeting, Chennai	11/2012
118	Sandhya Koushika	BioWorld 2012 meeting, IIT-Delhi	12/2012

International

	Name of Faculty member	Place visited	Date (MM/YYYY)
1.	Mithilesh Mishra	University of Tokyo, Japan Gakushuine University, Japan	06/2015
2.	Mahendra Sonawane	Medical College of Wisconsin, USA	01/2013
3.	Mahendra Sonawane	Max-Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany	05/2014
4.	Mahendra Sonawane	University of Cologne, Germany	05/2014
5.	Mahendra Sonawane	Max-Planck Institute for Heart and Lung research, Bad-Nauheim, Germany	05/2014
6.	Mahendra Sonawane	Max-Planck Institute for Developmental Biology, Tübingen, Germany	05/2014
7.	Shubha Tole	Tohoku Forum for Creativity Tohoku University, Sendai Japan	08/2015
8.	Shubha Tole	AMeGuS, Instituto Gulbenkian de Ciência, Portugal	05/2015
9.	Shubha Tole	University of Geneva, Switzerland	09/2014
10.	Shubha Tole	Institute of Science and Technology, Austria	09/2014
11.	Shubha Tole	University of Lausanne, Switzerland	10/2014
12.	Shubha Tole	Université Libre de Bruxelles, Belgium	10/2014
13.	Shubha Tole	Institute Jaques Monod, Paris, France	10/2014

14.	Shubha Tole	Charité – Universitätsmedizin Berlin, Germany	10/2014
15.	Shubha Tole	Max-Planck-Institute for Biophysical Chemistry Goettingen, Germany	11/2014
16.	Shubha Tole	Helmholtz Zentrum München, Germany	12/2014
17.	Shubha Tole	New York University – Abu Dhabi	02/2014
18.	Shubha Tole	Harvard University, Cambridge, USA	08/2013
19.	Shubha Tole	Seattle Childrens' Hospital, Seattle, USA	07/2013
20.	Shubha Tole	Drexel University, Philadelphia, USA	07/2013
21.	Shubha Tole	Oxford University	11/2011
22.	Shubha Tole	King's College London	11/2011
23.	Sreelaja Nair	Wellcome -Trust Sanger Institute UK	04/2013
24.	Vidita Vaidya	Copenhagen University, Denmark	05/2013
25.	Vidita Vaidya	INSERM, Paris, France	01/2014
26.	Roop Mallik	Institut Curie, Cedex, France	06/2014
27.	Roop Mallik	London Research Institute, UK	03/2014
28.	Gotam Jarori	Department of medicinal chemistry and molecular pharmacology, School of pharmacy, Purdue University, USA	11/2015
29.	Gotam Jarori	Gordan Research Conference	June- July 2011
30.	Vidita Vaidya	CINP Meeting, Hong Kong	June -2010
31.	Vidita Vaidya	Society For Neuroscience Meeting, San Diego	Nov. 2010
32.	Shubha Tole	International Society of Developmental Neuroscience, Portugal	June 2-15, 2010
33.	Shubha Tole	Invited Seminar Alicante, Spain	2010
34.	Shubha Tole	Gordon Research Conference	2010
35.	Shubha Tole	Invited seminar Stanford, USA	2010
36.	Maithreyi Narasimha	UK, Switzerland	2010
37.	Shobhona Sharma	Pasteur Institute, France	2010
38.	Krishanu Ray	50 th Annual Meeting of the America	2010

39.	BJ Rao	Gordon Research Conference	2011
40.	Shobhona Sharma	Epidemiology Conference, Washington DC, USA	2011
41.	Maithreyi Narasimha	Gordon Conf, USA	2011
42.	Vidita Vaidya	Society of Neuroscience, USA	2011
43.	G.K.Jarori	Parasitology Conference, Seattle, USA	2011
44.	Himanshu Sinha	9 th International Meeting on Yeast Apoptosis, Rome, Italy	9/2012
45.	Himanshu Sinha	Experimental Approaches to Evolution and Ecology using Yeast, EMBL, Germany	10/2012
46.	Shubha Tole	Society for Neuroscience Annual Meeting, USA	10/2012
47.	Shobhona Sharma	Mol.parasitol, Meeting, Woods Hole, USA	9/2012
48.	Maithreyi Narasimha	21 st Anniversary Symposium of the Gurdon Institute, Cambridge, UK	6/2012
49.	Maithreyi Narasimha	The molecular and Developmental Biology of Drosophila, Greece	7/2012
50.	Maithreyi Narasimha	Gurdon Institute Cambridge	7/2012
51.	Gotam Jarori	Gordon Research Institute	7/2012
52.	Ullas Kolthur	Gordon Research Conference on metabolism and Aging	01/2013
53.	Vidita Vaidya	FAONS Meeting, Melbourne	2/2013
54.	Vidita Vaidya	HFSP Review meeting Strasbourg, France	1/2013
55.	Vidita Vaidya	CINP Meeting. Stockholm	1/2012
56.	Roop Mallik	Collaborative visit to Uni. Of Pennsylvania.	7/2012
57.	Maithreyi Narasimha	Cell press conference on Forces in Biology, Dublin, Ireland	10/2012
58.	B J Rao	GRC on plant signaling systems	7/2012
59.	B. J. Rao	GRC on Mutagenesis	8/2012
60.	Sreelaja Nair	GRC Developmental Biology, Italy	2013
61.	B. J.Rao	19 th International chromosomes conference, USA or ASCB meeting	9/2013
62.	Himanshu Sinha	Frontiers in Bioinformatics and computational Biology, China	9/2013
63.	S.Sharma	ASTMH Meeting, Washington, USA	11/2013

64.	Maithreyi Narasimha	International congress of Developmental Biology, Mexico, UK, USA	7/2013
65.	Roop Mallik	Gordon Research conference, New England	8/2013
66.	Maithreyi Narasimha	Kavli Institute of Theoretical Physics, Santa Barbara, USA	8/2013
67.	Mahendra Sonawane	6 th Asia Oceania Zebra fish meeting, Hong kong University of science and technology	01/2014
68.	Shubha Tole	Streams from the back of the brain, Gordon Conference,	07/2013
69.	Shubha Tole	Towards a blue print for building the brain, New York University, Abu Dhabi	2/2014
70.	Roop Mallik	Gordon Research Conference, USA	8/2014
71.	Roop Mallik	FASEB meeting on Lipid Droplets and Metabolic consequences of Neutral lipid storage	7/2014
72.	Roop Mallik	EMBO conference series, Germany	05/2014
73.	Maithreyi Narasimha	Symposium on shaping cells and organism , Germany	9/2014
74.	Maithreyi Narasimha	Mechanobiology meeting, Singapore	12/2014
75.	Maithreyi Narasimha	Biochemical Society, UK	9/2014
76.	Maithreyi Narasimha	EMBL Conference of Epithelia, Building Blocks of Multicellularity, Germany	8/2014
77.	Krishanu Ray	TWIM 2014, Weizmann Institute, Israel	06/2014
78.	Himanshu Sinha	From Models to Disease, La Maison du Seminaire, France	2014
79.	Shubha Tole	A tale of two streams, ISDN- 2014, Montreal	07/2014
80.	Vidita Vaidya	HDAC4 Neuroepigenetics Satellite Meeting, Washington	11/2014
81.	Sandhya Koushika	Keynote talk, <i>C. elegans</i> Development, cell biology and Gene expression meeting, Nara, Japan	7/2014
82.	Sandhya Koushika	New horizons in <i>C. elegans</i> biology symposium, Mishima, Japan	7/2014
83.	Sandhya Koushika	Young Investigator meeting, Boston, USA	10/2014

84.	Sandhya Koushika	Brandeis University, Waltham, USA	6/2012
85.	Sandhya Koushika	American Society of Cell Biology, USA	12/2012

26. Faculty serving in

a) National Committees :

	Name of the Faculty Member	Name of the Committee	Role in the Committee	Term of Service
1.	Ullas Kolthur	DBT task force on cancer biology	member	2014
2.	Shubha Tole	Council, National Academy of Science, India	Council member	2013-2015
3.	Krishanu Ray	Indian Society of Developmental Biologists	Life member and President	2014 - 2015
4.	Krishanu Ray	Scientific Advisory Committee and Research Area Panel (SAC-RAP) of the Centre for DNA Fingerprinting and Diagnostics, Hyderabad	Member	2014-
5.	Vidita Vaidya	Management Board, National Centre for Biological Sciences, Bengaluru	Member	2014 -
6.	Vidita Vaidya	Scientific Advisory Committee (SAC) for "DBT-IISc Partnership Programme for Advanced Research in Biological Sciences & Bioengineering" at Division of Biological Sciences (DBS), IISc., Bengaluru	Member	2013-
7.	Vidita Vaidya	Dept of Biotechnology, Govt. of India, Neuroscience Task Force	Member	2012-
8.	Vidita Vaidya	Program Advisory Committee, Dept of Science and Technology, Govt. of India, Animal Sciences	Member	2012-15
9.	B.J.Rao	RAP-SAC Member of National Institute of immunology	member	2014
10.	B.J.Rao	Research Advisory Committee member (Hinduja Medical Research & Hospital, Mumbai).	Member	2012

	Name of the Faculty Member	Name of the Committee	Role in the Committee	Term of Service
11.	B.J.Rao	DBT-Taskforce on Research Resources, Service Facilities and Platforms.	Member	2012-present
12.	B.J.Rao	Expert group Member (IRTG-Germany-India collaborative programmes (DBT))	Member	2013
13.	B.J.Rao	Board of studies for Life Sciences, Homi Bhabha National Institute (Deemed University initiative for Department of atomic Energy), Mumbai.	Member	2012
14.	B.J.Rao	Member Specialist Group for Biology programmes in Department of atomic Energy	Member	11 th and 12 th plan period
15.	B.J.Rao	DST (Ramanujam Fellows) mentoring committee.	Member	2012-present
16.	Gotam Jarori	Member of Board of Studies, Department of Biochemistry, M.S. University of Baroda, Vadodara	Member	2013-present
17.	Gotam Jarori	Member of Research Advisory Council, M. & N. Virani College, Rajkot	Member	2013-present
18.	Ullas Kolthur	Member of the Indian medical council Research(ICMR)Task force on cancer	Member	2012-present
19.	Ullas Kolthur	Indian Medical Council Research (ICMR) Task Force on Research in Aging and Age-related diseases (Gerontology.)	Member	2013-present
20.	Ullas Kolthur	Member of Department of Bio technology	member	2013-present
21.	Shobhona Sharma	Indian Institute of Sciences , Bangalore	Fellow	2012-present
22.	Shobhona Sharma	Indian National Science Academi, New Delhi	Fellow	2013-present
23.	Shobhona Sharma	Advisory member of Lady Tata trust, Bombay house, Mumbai	Member	2011-present
24.	Shobhona Sharma	Scientific Advisory committee of National Institute of Malaria Research	Member	2011-present

	Name of the Faculty Member	Name of the Committee	Role in the Committee	Term of Service
25.	Shobhona Sharma	Member, Scientific Advisory Committee of Institute of Life Sciences, Bhubaneswar	Member	2011-present
26.	Shobhona Sharma	Member Review Committee Wellcome Trust- DBT India Alliance fellowships.	Member	2011-present
27.	Shobhona Sharma	Member of Indian Council for Medical Research	Member	
28.	Shobhona Sharma	Member of Institute of Life sciences Bhubaneswar	Member	
29.	Himanshu Sinha	Research recognition council for Biotechnology, UDCT	Member	2012-present
30.	Himanshu Sinha	Institute Committee for stem cell Research and Therapy, IIT Bombay,	Member	2012
31.	Himanshu Sinha	J.N.Tata endowment for the Higher education of Indian interview committee	Member	2012

b) International Committees :

	Name of the Faculty Member	Name of the Committee	Role in the Committee	Term of Service
1.	Vidita Vaidya	Human Frontiers of Science Programme, Fellowship Advisory Committee Vice-Chair (2012, 2013), Chair (2015)	Member, represents India	2011
2.	Vidita Vaidya	CINP- International Scientific Advisory Committee	Member	2010-2012
3.	Shubha Tole	Member, Ethics Committee of the Society for Neuroscience	Member	2014-present
4.	Shubha Tole	Member, Scientific Publications Committee of the Society for Neuroscience	Member	2012-2015
5.	Shubha Tole	IBRO-Asia Pacific Research Committee	Member	2012-present
6.	B. J. Rao	Expert review member DFG-DBT, Berlin	Member	2014
7.	Shobhona Sharma	Advisory Member, Malaria Foundation, New York, USA.	Member	2015

(c) Editorial Boards:

	Name of the Faculty Member	Name of the Journal	Impact Factor	Term of Service
1.	Roop Mallik	Nature Scientific report	5.578	2014-present
2.	Vidita Vaidya	Nature Scientific Reports	5.578	2014-present
3.	Vidita Vaidya	Journal of Neurochemistry, Handling editor	4.281	2013-present
4.	Vidita Vaidya	Journal of Molecular Psychiatry		2012-present
5.	Vidita Vaidya	Progress in Neuro-Psychopharmacology & Biological	3.689	2012-present
6.	Vidita Vaidya	European Journal of Pharmacology	2.532	2008-2011
7.	Vidita Vaidya	Journal of Biosciences	2.064	2007-present
8.	Sandhya Koushika	Nature Scientific Reports	5.578	2014-present
9.	Sandhya Koushika	Invertebrate Neuroscience	0.9	2015-present
10.	B. J. Rao	Journal of Biosciences	2.064	2014
11.	Shubha Tole	Science, Board of Reviewing Editors	33.6	2014-ongoing
12.	Shubha Tole	Developmental Neuroscience	2.025	2011-ongoing
13.	Shubha Tole	Member, F1000 Research Editorial Board	Not applicable	2012-ongoing
14.	Shobhona Sharma	Journal of Vector Bourne diseases	0.81	2012-present

27. Faculty recharging strategies (UGC, ASC, Refresher/orientation programs, workshops, training programs and similar programs).

As all TIFR faculty members regularly participate in national and international research-oriented symposia, conferences, workshops and schools, often as the organizers or principal lecturers, they are always in touch with the state of the art in their areas of expertise. Therefore, no separate recharging/refresher programmes are needed, nor are any conducted. In fact, TIFR faculty are in great

demand as lecturers in such programmes in other institutions, both inside and outside India.

28. Student projects

- Percentage of students who have done in-house projects including inter-departmental projects

ALL (100%) TIFR students are required to do two Departmental Projects, viz. Departmental Project I and Departmental Project II .

- Percentage of students doing projects in collaboration with other universities /industry/institute

Many TIFR faculty and laboratories have collaborations with scientists in India and abroad. Students of these faculty members and laboratories participate in these projects. Thus the percentage of students involved in such projects is approximately 50%.

29. Awards/recognitions received at the national and international level

- Awards/Recognitions:**

	Year	Name of the Awardee	Name of the Award
1.	2012-2013	Ullas Kolthur	Swarnajayanti Fellowship Award. DST.
2.	2014	Roop Mallik	The S. S. Bhatnagar Award in Biological Sciences
3.	2014	Roop Mallik	Elected member of the Guha Research Society
4.	2015	Shubha Tole	LakshmiPat Singhania-IIM Lucknow National Leadership award in Science and Technology
5.	2014	Shubha Tole	The Infosys Prize in Life Sciences
6.	2010	Shubha Tole	The S. S. Bhatnagar Award in Biological Sciences
7.	2008	Shubha Tole	National Woman Bioscientist award Dept. Biotechnology, Govt. of India
8.	2005-2010	Shubha Tole	Swarnajayanti Fellowship Award. DST.
9.	2015	Vidita Vaidya	The S. S. Bhatnagar Award in Medical Sciences
10.	2012	Vidita Vaidya	National Bioscientist Award
11.	2012	Vidita Vaidya	Elected member of the Guha Research Society
12.	2008	Shubha Tole	Research Award for Innovation in Neuroscience (RAIN)

			award) Society for Neuroscience, USA
13.	2008-2009	Shubha Tole	Wellcome Trust Flexible Travel Award for a Sabbatical year at Stanford University, USA
14.	2010	Shubha Tole	Elected member of the Indian National Science Academy
15.	2010-	B. J. Rao	J. C. Bose Fellowship
16.	2002	B. J. Rao	Elected Fellow of National Academy of Sciences
17.	2006	B. J. Rao	Elected Fellow of Andhra Pradesh Academy of Sciences
18.	2013	B. J. Rao	Elected Fellow of Indian Academy of Sciences, Bangalore
19.	2000	B. J. Rao	Elected member of the Guha Research Society
20.	2010	B. J. Rao	Elected member of the Indian National Science Academy
21.	1997	Shobhona Sharma	Elected member of the Guha Research Society
22.	2003	Shobhona Sharma	Elected member of the Indian National Science Academy
23.	2003	Shobhona Sharma	Member of Institute of Life sciences Bhuvaneshwar

30. Seminars/Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. (2011-2015)

	Year	Name	Funding Agency	Faculty members
1.	2011 till date	Mahabaleshwar Seminar series	TIFR-DAE	Roop Mallik, Krishanu Ray, Sandhya Koushika, Mahendra Sonawane, Sreelaja Nair, Ullas Kolthur,
2.	2012	ISDN, Mumbai (Internal Society for Developmental Neuroscience)	Elsevier Ltd	Shubha Tole, Prof. Vidita Vaidya
3.	2013	Genes, Circuits and the Development of Behaviour	DBT	Maithreyi Narasimha
4.	2015	Infection & Molecular epidemiology		Shobhona Sharma, Gotam K Jarori
5.	2013	DBS Annual Talks-2013	TIFR-DAE	DBS faculty
6.	2013	Indian Society for Developmental Biologists Annual meeting	TIFR-DAE	Shubha Tole, Pradip Sinha (IIT-Kanpur), Mahendra Sonawane, Sreelaja Nair
7.	2014	Adult Neurogenesis: From stem cells to therapies	TIFR-DAE	V Vaidya

8.	2012	Saturday special interest subgroup session on 'Axonal transport: Mechanisms of regulating cargo transport in neuronal development, maintenance and disease' at the ASCB 2012 meeting, USA	--	Sandhya Koushika
9.	2014	IBRO-APRC global advocacy meeting in Neuroscience, TIFR-India	IBRO	Shubha Tole, Sandhya Koushika

31. Code of ethics for research followed by the departments.

The DBS follows these guidelines:

- TIFR Guidelines on Academic Ethics
- Institutional Animal Ethics Committee guidelines
- Institutional Biosafety committee guidelines

32. Student profile programme-wise:

Numbers are **summed over 2011 – 2015** batches.

Programme (refer to question no. 4)	Applications received	Selected		Joined		Pass Percentage %*	
		M	F	M	F	M	F
Ph.D.	51847*	35	26	14	19	64	78
Integrated M.Sc.- Ph.D.		7	10	5	5	60	100
M.Sc.		25	45	21	37	57	86

33. Diversity of students

a) Geographical

Students	Ph.D.		Integrated- Ph.D.		M.Sc.		Total
	Male	Female	Male	Female	Male	Female	
From the state where the University is located	1	4	---	---	3	5	13
From other states of India	9	9	2	6	13	22	61
NRI students	--	---	--	---	--	---	--
Foreign students	--	---	---	---	---	---	--
Total	10	13	2	6	18	27	74

b) Undergraduate Institution

Students from	Ph.D.		Int.-Ph.D.		M.Sc.		Total
	Male	Female	Male	Female	Male	Female	
Indian Universities	5	13	4	9	10	13	54
Premier science institutions †	0	1	0	0	0	0	1
Premier professional institutions #	3	4	0	0	0	0	7
Others*	2	0	1	0	2	4	9
Foreign Universities	0	0	0	0	0	0	0
Total	10	18	5	9	12	17	71

† Science institutions, e.g. CBS, NISER, etc.

IITs, NITs, etc.

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

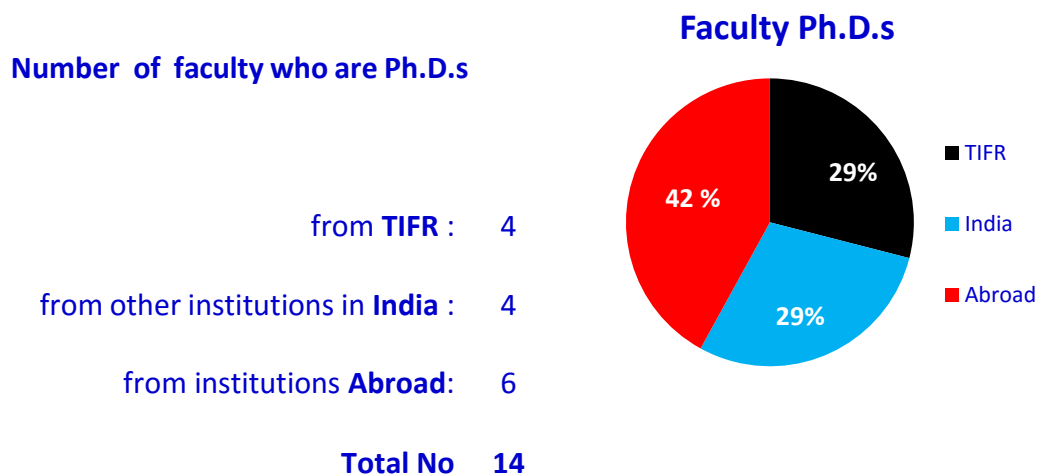
	Examination	No of students
1.	NET	20
2.	GATE	17
3.	JEST	1
4.	Others	15

35. Student progression

- Ph.D. programme and I-Ph.D. programme : Most of the students admitted to the DBS go on to complete the course work and get their Ph.D.s. Once in a while, a student may leave the programme, for various reasons (less than 10%). After completing their Ph.D., students leave TIFR. The vast majority go elsewhere for postdoctoral research. The rest opt for other employment, such as teaching positions or the industry.
- M.Sc. programme : Most of the students admitted to the DBS go on to complete the course work and get their M.Sc. degree. Once in a while, a student may leave the programme, for various reasons (less than 10%). After completing their M.Sc., students leave TIFR. Approximately 70% go to other Institutions in India or abroad

as Ph.D. students. The rest opt for other employment, such as teaching positions or the industry.

36 Diversity of staff:



37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

The minimum eligibility criteria for selection as a member of the TIFR faculty is a Ph.D. degree.

38. Present details of departmental infrastructural facilities with regard to

a. Library

DBS, like other Departments of TIFR in the Colaba campus, makes use of the TIFR Library and Scientific Information Resource Centre (SIRC) (see Section B2, Item no 4.2)

b. Internet facilities for staff and students

DBS, like other Departments of TIFR in the Colaba campus, makes use of the TIFR Computer Centre and Communication Facility

c. Total number of classrooms

DBS, like other Departments of TIFR in the Colaba campus, makes use of the common class rooms and lecture theatres of TIFR

d. Classrooms with ICT facility

All the classrooms above have ICT facilities like overhead projectors, Wi-Fi, etc. Video-conferencing possibilities are also available in most of the lecture rooms.

e. Research laboratories

	Name of Laboratory	Fac*	PDF [†]	Stu [‡]	Brief description of research activity
1	Malaria epidemiology and parasite biology	1	0	3	A single episode of mild malaria in an adult mouse cause specific behavioural changes.
2	Vertebrate Embryogenesis	1	1	2	Early vertebrate development using zebrafish as a model
3	Molecular Physiology	1	2	5	Inter-organ communication between central metabolic tissues and peripheral organs in homeostasis
4	Intracellular Biophysics of motor proteins	1	1	2	Mechanistic understanding of lipid and motor protein interactions
5	Developmental Neurobiology	1	3	4	Mechanisms of cell fate and axon pathfinding in the developing brain
6	Malaria Lab	1	2	3	Development of malaria vaccine
7	Motor protein Biology Lab	1	1	6	Neuronal transport and cell biology of signaling in development
8	Cellular Mechanics	1	-	5	Epithelial dynamics during drosophila development
9	Epidermal Biology	1	1	4	Epidermal development in zebrafish
10	Quantitative Traits Lab	1	1	2	Mapping quantitative traits in yeast
11	Genome Biology	1	2	7	Molecular and cellular basis of Genome and cellular dynamics
12	Cellular Neurobiology	1	1	4	mechanisms of long distance axonal transport <i>in vivo</i> and its contribution to development/behaviour.
13.	Cytokinesis	1	-	3	Cell division in yeast
14	Behavioural	1	3	4	Mammalian behavior studies

	Neurobiology				
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* no of faculty members using the laboratory, [†] no of postdoctoral fellows using the laboratory, [‡] no of graduate students using the laboratory

39. List of doctoral, post-doctoral students and Research Associates

	Doctoral students	Post-doctoral fellows
1.	Mandar Phatak	Paulomi Sanghavi
2.	Clyde Pinto	Antara Ghosh
3.	Prateek Arora	Atanu Gorai
4.	Kirti Gupta	Tandrika Chattopahyay
5.	Jagjeet Singh	Neena Ratnakaran
6.	Komal Raina	Chetanchandra Joshi
7.	Namrata Shukla	Rahul Chaudhari
8.	Priya Dutta	Sneha Shah
9.	Amruta Vasudevan	Sarosh Fatakia
10.	Avanish Kumar Srivastava	Megha Maheshwari
11.	Babukrishna Maniyadath	Shashaina Fanibunda
12.	Shivani Ashwin Upadhyaya	Mallika Chatterjee
13.	Purna Sham Gadre	Geeta Godbole
14.	Vivek Singh	Priyanka Rai
15.	Kirti Gupta	Bhavana Murlidharan.
16.	Mukesh Kumar	
17.	Pavithra Kumar	
18.	Sudeepa Nandi	
19.	Zoheb Ahmed	
20.	Minal Bharat Jaggar	
21.	Chatali Khan	
22.	Samir Gupta	
23.	Sthitapranjya Pati	
24.	Mugdha Kulashreshth	
25.	Kritika sadh	
26.	Vishal singh Chaudhari	
27.	Kamlesh Kumari	

40. Number of post graduate students getting financial assistance from the university.

All the students of DBS are in the Ph.D., I-Ph.D. or M.Sc. programmes and are all given TIFR fellowships.

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, high light the methodology.

No new programmes were undertaken

42. Does the department obtain feedback from

- a. Faculty on curriculum as well as teaching-learning evaluation? If yes, how does the department utilize the feedback?

DBS faculty routinely evaluate the curriculum and teaching methodologies to incorporate suggestions arising from internal discussions on teaching methods for course work. Alterations, if required, are made keeping in mind that the mode of teaching in a graduate programme is not text book based lecturing. The focus rather is on discussions and group learning both in class and in take home assignments.

- b. Students on staff, curriculum and teaching-learning+evaluation and how does the department utilize the feedback?

At the end of each academic session course instructors obtain feedback from students regarding the content of the course, the mode of teaching and the mode of evaluations. This information is used by the instructor to modify course structure to perhaps incorporate more recently published literature or by having students give short paper presentations instead of an exam at the end of the course.

- c. Alumni and employers on the programmes offered and how does the department utilize the feedback?

Currently no such feedback is collected on a formal basis.

43. List the distinguished alumni of the department (maximum10)

	Name of the Alumnus	Reason for Distinction
1.	Veronica Rodrigues	Among the first graduates of Molecular Biology Unit (MBU) now known as Department of Biological Sciences and eminent Developmental and Behavioural Neurobiologist

44. Give details of student enrichment programmes (special lectures/workshops/seminar) involving external experts.

Our Department holds a weekly seminar on Mondays. These talks are attended by departmental members. In addition, seminars on other days are given by national and international visitors. Our students are thus exposed to various aspects of modern scientific research through these talks and interaction with the speakers. Our students regularly participate in national conferences and workshops, and occasionally in international conferences, by giving talks and presenting posters. They thereby get ample opportunities to extend their knowledge. In addition, our students also give at least one departmental seminar a year and speak about their research. This way they are trained to present their work, and face positive and negative criticism from the community. Besides, our students are also privileged that they get to hear many internationally and nationally recognized scientists via the institute level Public Lectures and Colloquia. Saturday journal club- students and postdocs present papers to each other. Friday Causerie- students present ongoing data to the department.

45. List the teaching methods adopted by the faculty for different programmes.

Teaching methodology involves literature surveys, paper presentations and conventional classroom teaching.

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The Subject Board guidelines ensure that the students complete the requirements satisfactorily. Unsuccessful students are given a limited number of opportunities to fulfill the requirements; else they are asked to leave the programme.

47. Highlight the participation of students and faculty in extension activities.

Several faculty members and students participate in 'out-reach programmes', by giving scientific talks to the public at large (in colleges, rural schools and various other venues); they participate in national and international conferences by presenting their research work; give seminars in national and international institutions. They also participate in TIFR Science Day programme, where various laboratories are opened to school children.

DBS also organizes Open day for the candidates who come for the PhD, Int. PhD and MSc. Interviews every year.

48. Give details of "beyond syllabus scholarly activities" of the department.

The DBS conducts and participates in the following activities on a regular basis.

- DBS Seminar
- NSF Colloquium
- VSRP Programme
- Mahabaleshwar Seminar Since 1975, the Tata Institute of Fundamental Research, Mumbai has sponsored a series of annual seminars on selected topics in the frontier areas of modern biology.

These seminars are designed as theme based meetings and advanced courses sometimes with an associated experimental workshop. The participants are mostly selected from working scientists and research scholars in India and abroad. Usually the faculty consists of nearly ten teachers who are selected from most well known researchers in the field who provide informal lectures on the topics of their research with extensive background. The schedules are organised with emphasis on discussions with an aim to stimulate active research interest on the topic

amongst the participants. Student-faculty interactions and discussions are encouraged. There have been 40 seminar series hosted under the aegis of 'Mahabaleshwar seminar series'.

49. State whether the programme/department is accredited/graded by other agencies? If yes, give details.

In 1997 the Porter Commission and in 2005 an External Review Committee headed by Prof. James Spudich (Stanford University, USA) reviewed the Department of Biological Sciences and lauded the research accomplishments of the department and strongly advocated further strengthening of the programmes at TIFR, Mumbai campus. The committee pointed out the need for further diversification and a multidisciplinary approach especially in the context of current explosive growth of knowledge seen in Basic Biology world-wide. The department took note of this and enriched its research by inducting newer programmes. Now the departmental research output and individual accomplishments testify the fruition of such a vision where the department, though relatively small in size, has a cohesive style of functioning through a philosophical approach that emphasizes collaborative and collective success. The measure of the high success of the research output of the Department is apparent in the publications accrued and the awards/fellowships in recognition of their contribution in the recent past.

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Research in our department continues to reveal fundamental aspects of biological systems. We have added to the basic understanding of how cells repair DNA damage, on developing proteins as targets for malaria vaccine and on understanding how the malaria parasite executes its pathogenicity in the host system. We have additionally contributed to understanding how the nervous system develops in mammals, how transport occurs within neurons and how the brain functions to generate behavioural outputs. Our work on additional vertebrate model systems reveal the fundamental program an embryo executes to develop into an adult and also enhances our understanding of how cells communicate with each other to achieve a cellular pattern that is dynamic in space and time. Research in our department also furthers our knowledge in how

cells organize and transport proteins and other cargo, including harmful pathogens such as Leishmania and Mycobacterium, to their intracellular destinations. All of the information obtained from our fundamental research is translatable to applied biological research aimed at alleviating the impact of diseases to humans.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges(SWOC) of the department.

Strengths

- Collaborative approach to research and teaching.
- Open to critical input on research programmes in the form of Annual talks, which are attended by invited experts.
- Common philosophy to aim for collective success rather than individual achievements.

Weaknesses

- Lack of resources like space, manpower in terms of students and post docs.

Opportunities

- Due to diverse research interests within the department, there is a huge opportunity for cross breeding ideas and exploring new possibilities.

Challenges

- Raising resources like space, students (man-power) and funding.
- Recruiting new faculty members to strengthen the ongoing activities as well as explore new areas of research.
- Modest infrastructure strongly limits broadening of the research activity whilst the research groups have to compete at the international level.
- Popularizing these research fields at the undergraduate level and making the younger generation attracted to these fields within India.
- Interference in day to day administration by the extended bureaucracy, too many rules and not much freedom in execution.

52. Future plans of the department

This is the century of biology and we believe it would be advantageous to add some key areas and augment aspects of some existing areas to better capitalize on our strengths. In the future we would view an increase in our faculty size at the rate of 1-2 new hires per year for the next 10 to 15 years, aiming at a total department steady-state of around 25 faculty. These would include hiring in areas such as Bioinformatics, Metabolomics and Molecular Genome Architecture to list a few fields. These areas would strengthen existing research in the department by allowing diversification of research interests and simultaneously bring to TIFR-Mumbai additional key research fields in Biology.