

**B3-XII**

**National Centre for  
Biological Sciences  
(NCBS)**





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### National Centre for Biological Sciences

1. Name of the Department :

National Centre for Biological Sciences (NCBS)

2. Year of establishment :

1991

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

NCBS is an autonomous department of TIFR.

4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)

PhD, Integrated Masters-PhD, MSc-by-Research in Life Sciences, MSc in Wildlife Biology and Conservation

5. Interdisciplinary programmes and departments involved

Interdisciplinary programmes including courses covering physics and biology are being conducted jointly with TIFR Hyderabad and the International Centre for Theoretical Sciences (ICTS-TIFR) Bangalore.

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

Courses are conducted in collaboration with the Indian Institute of Science, the JNCASR, and the Raman Research Institute. In addition, numerous workshops are run each year with industry partners, such as the Bangalore Microscopy Course ([www.ncbs.res.in/BangaloreMicroscopyCourse/Home](http://www.ncbs.res.in/BangaloreMicroscopyCourse/Home)) which has been organized annually since 2009 in collaboration with partners such as Nikon, Zeiss, Leica, and Olympus.

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

No programme was discontinued.

8. Examination System: Annual/Semester/Trimester/Choice Based Credit System

We have an Academic Calendar with two academic semesters: January – May and August – December. Examinations are conducted at the conclusion of each course and not simultaneously. This is a Choice-Based-Credit-System and students select courses based on listed offerings, each course is worth 2 – 4 credits and the students are assigned a final CGPA.

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

As mentioned above, we participate in the courses of TIFR-Hyderabad and ICTS-Bangalore, especially on interdisciplinary topics at the interface of physics and biology.

10. Number of faculty positions:

	Faculty Designation with DAE Grade	Abbreviation (Item 11)	Number
1.	Distinguished Professor (J)	Dist. Prof. (J)	1
2.	Senior Professor (I)	Sr. Prof. (I)	5
3.	Professor (H)	Professor (H)	5
4.	Associate Professor (G)	Assoc. Prof. (G)	6
5.	Reader (F)	Reader (F)	15
6.	Others	-	2
		Total	34

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

	Name	Deg*	Designation	Specialisation	Exp <sup>†</sup>	Stu <sup>‡</sup>
1.	K. VijayRaghavan	PhD	Dist. Prof. (J)	Development of neural circuits and muscles and the emergence of behavior	27	8
2.	Jayant B Udgaonkar	PhD	Sr. Professor (I)	Proteins folding, unfolding and misfolding	25	5
3.	M.K. Mathew	PhD	Professor (H)	Membranes and transporters and salt	24	1

	Name	Deg*	Designation	Specialisation	Exp <sup>†</sup>	Stu <sup>‡</sup>
4.	M.M. Panicker	PhD	Assoc. Prof. (G)	Roles of Serotonin in neural and non-neural systems	23	1
5.	Sudhir Krishna	PhD	Professor (H)	Human cervical cancer pathobiology and developing biology-medicine iinterphase programme	23	1
6.	Gaiti Hasan	PhD	Sr. Prof. (I)	Motor circuit development and function	21	4
7.	Satyajit Mayor	PhD	Sr. Prof. (I)	Mechanisms of membrane organization and endocytosis	20	3
8.	Upinder S. Bhalla	PhD	Sr. Prof. (I)	Sequence learning: From Molecules to networks	19	7
9.	Sumantra Chattarji	PhD	Professor (H)	The Amygdala and hippocampus in stress disorders: Cells, circuits and memories	18	5 M.Phil 1
10.	R. Sowdhamini	PhD	Professor (H)	Computational approaches to protein science	17	9
11.	Apurva Sarin	PhD	Professor (H)	Spatial organization and assembly of notch signaling networks	17	2
12.	Mukund Thattai	PhD	Reader (F)	The origins of Complex Cells	11	2
13.	Uma Ramakrishnan	PhD	Assoc. Prof. (G)	Deconstructing Indian Biodiversity: Evolutionary origins and future prospects	10	2
14.	Sanjay P Sane	PhD	Assoc. Prof. (G)	The Physics, Neurobiology and Ecophysiology of insect flight	8	1
15.	Mahesh Sankaran	PhD	Assoc. Prof. (G)	Terrestrial Ecosystems and Community Biology	7	2
16.	Shachi Gosavi	PhD	Reader (F)	Computational protein folding and functional dynamics.	6	0
17.	Vatsala Thirumalai	PhD	Reader (F)	Development, modulation and function of motor systems	6	0
18.	Sandeep Krishna	PhD	Assoc. Prof. (G)	The Choices of a Cell	6	0
19.	Raghu Padinjat	PhD	Assoc. Prof. (G)	Phosphoinositide signalling in cell Biology	6	0
20.	Krishnamegh Kunte	PhD	Reader (F)	Speciation, Adaptation and Morphological Diversification in Tropical Regions	4	0
21.	P.V. Shivaprasad	PhD	Reader (F)	Understanding Epigenetics and Small Silencing RNAs	3	0

	Name	Deg*	Designation	Specialisation	Exp <sup>†</sup>	Stu <sup>‡</sup>
22.	Ranabir Das	PhD	Reader (F)	Genomics of complex gene expression control in Bacteria	2	0
23.	Varadharajan Sundaramurthy	PhD	Reader (F)	Biology of host-pathogen interactions during intracellular infections	2	0
24.	Shannon B Olsson	PhD	Reader (F)	Naturalist-Inspired Chemical Ecology: Targeting decision making in nature	2	0
25.	Arati Ramesh	PhD	Reader (F)	Structural studies of Riboswitches and RNA-Binding proteins in Bacteria	1	0
26.	Radhika Venkatesan	PhD	Reader (F)	Chemical Ecology of plant interactions	1	0
27.	Hiyaa Ghosh	PhD	Reader (F)	Cellular mechanisms in the adult brain	1	0
28.	Aswin Sai Narain Seshasayee	PhD	Reader (F)	Genomics of complex gene expression control in Bacteria	5	0
29.	Madan Rao	PhD	Sr. Prof. (I)	Theoretical approaches in cell biology : physics of active, evolving systems	7	2
30.	Shashi Thutupalli	PhD	Reader (F)	Active Evolvable Matter: linking activity, information flow and populations	6 months	0
31.	Dimple Notani	PhD	Reader (F)	Gene Expression and Chromatin Architecture	4 months	0
32.	Raj Ladher	PhD	Reader (F)	Development and Morphogenesis of the Inner Ear	2 months	0
33.	Axel Brockmann	PhD	Fellow (E)	Honeybees and the mechanism of behavior	4	6
34.	Deepa Agashe	PhD	Fellow (E)	Bacterial genome evolution and evolutionary ecology of adaptation	4	7

\* 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

- Christopher Michael Bate (Cambridge)
- Francisco J Barrantes
- James A Spudich (Stanford)
- Mani Ramaswami (Trinity College Dublin)
- Sanjeev Jain (NIMHANS)
- K. Ullas Karanth (Wildlife Conservation Society)
- Vivek Malhotra (CRG Barcelona)

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

Approximately 10% of classes are taken by temporary faculty. These mainly pertain to interdisciplinary classes in basic mathematics, such as Calculus and Linear Algebra.

## 14. Programme-wise Student Teacher Ratio

	<b>Programme</b>	<b>Students (S)</b>	<b>Faculty (F)</b>	<b>Ratio S/F</b>
1.	Ph.D.	37	15	37:15
2.	Integrated M.Sc.-Ph.D.	15	11	15:11
3.	M.Sc.	9	7	9:7

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

<b>Scientific and Technical Staff</b>	<b>Administrative and Auxiliary Staff</b>
27	24

## 16. Research thrust areas as recognized by major funding agencies

The mandate of NCBS-TIFR is research in all major areas of the modern life sciences, including

- molecular and cell biology,
- developmental biology and genetics,
- neuroscience and behavior,
- ecology and evolution,
- theory and modeling of biological systems.

## 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.

**(a) Major national projects (2012-15):**

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
1.	CEFIPRA	Collective migration in the fly nervous system	18.31	K VijayRaghavan
2.	CEFIPRA	DNA-encapsulated Quantum Dots for Bio-imaging	21.42	Yamuna Krishnan
3.	CEFIPRA	Olfactory Modulation of Insect Flight	15.24	Gaiti Hasan
4.	CEFIPRA	Genome-scale analysis of differential propensities of different chromosomal domains for horizontal gene insertion in <i>Escherichia coli</i>	22.20	Aswin Seshasayee
5.	CSIR	Investigating connectivity in the montane sky island ecosystems in the Western Ghats through genetics of a threatened endemic bird	138.24	Uma Ramakrishnan
6.	DAE	Biogeography of the Indian subcontinent	19.54	Uma Ramakrishnan
7.	DBT	Regulation of <i>Drosophila</i> larval growth and TOR signaling a novel phosphoinositide kinase	25.62	Raghu Padinjat
8.	DBT	Innovative young biotechnologist	50.17	Odity Mukherjee



	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		award -2009 (IYBA)		
9.	DBT	Notch activated signalling cascade & the consequences for T-cell homeostasis	64.54	Apurva Sarin
10.	DBT	Genome wide sh RNA screens to analyse cellular mechanisms regulating fundamental process in mammalian cells	213.25	Apurva Sarin
11.	DBT	Analysis of type II phosphatidylinositol phosphate kinase function in Vivo	60.04	Raghu Padinjat
12.	DBT	Validation of novel target for HIV-1: Nef-CD80/CD86 for potential therapeutic intervention	99.40	Satyajit Mayor
13.	DBT	Peptide toxins of therapeutic value from toxoglossan molluscs collected from Indian coasts	60.11	KS Krishnan
14.	DBT	Deep sequencing of venom duct cDNAs from Indian cone snails	53.81	KS Krishnan
15.	DBT	Finding the neural correlates of olfactory guided behaviour in awake, behaving rats in both controlled and natural environments	79.73	Upinder Bhalla
16.	DBT	Optical probing of memory network connectivity	83.57	Upinder Bhalla
17.	DBT	Cross-genome survey of olfactory receptors in five eukaryotic genomes with a special emphasis on receptors of odour response	28.36	R Sowdhamini
18.	DBT	In-vitro differentiation of human embryonic stemcell lines to hepatocytes & the potential role of serotonin in its expansion and /or differentiation	23.47	Mitradas Panicker
19.	DBT	Real time In-Vivo micro RNA sensors using nucleic acid mimics	62.51	Yamuna Krishnan
20.	DBT	Structure and mechanism of FLeQ master regulator of transcription of flagellar and biofilm genes in	53.21	Deepti Jain

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		<i>Pseudomonas aeruginosa</i>		
21.	DBT	The role of Inositol 1, 4, 5-Trisphosphate mediated intracellular Ca <sup>2+</sup> release in Insulin secretion: <i>Drosophila</i> IP3R Mutants as a Genetic Model for Diabetes	60.03	Gaiti Hasan
22.	DBT	Programme support for technological innovations & ecological research for the sustainable use of bioresources in the Sikkim Himalaya	310.87	Mahesh Sankaran
23.	DBT	Centre of excellence on computational & system biology	594.75	R Sowdhamini
24.	DBT	Ramalingaswamy Fellowship	53.94	Mahesh Sankaran
25.	DBT	Notch signalling & human cancer cell molecular mechanisms & development of a translational initiative programs	426.87	Sudhir Krishna
26.	DBT	Meta-population dynamics of tigers in Malenad-Mysore landscape of Karnataka	33.27	Uma Ramakrishnan
27.	DBT	Lynx in organization and dynamics of nicotinic acetylcholine receptor complexes	49.55	Satyajit Mayor
28.	DBT	Programme Support on targeted generation and interrogating of cellular models and networks in neuro-psychiatric disorders using candidate genes	75.97	Mitradas Panicker
29.	DBT	DNA Mismatch Repair in Prokaryotes: Beyond the E.coli Paradigm	22.96	Deepak Nair
30.	DBT	A longitudinal study of molecular and cellular changes in intracellular calcium signaling with neurological correlates in an SCA1 cohort in South India	34.68	Gaiti Hasan
31.	DBT	Characterization and reversal of the	41.25	Sumantra Chattarji

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		contrasting patterns of stress-induced changes in synaptic connectivity and its molecular mediators in the amygdale, hippocampus and medial prefrontal cortex		
32.	DBT	Investigating the role of gap junctions at an identified glutamatergic synapse in a developing vertebrate	63.86	Vatsala Thirumalai
33.	DBT	Exploring stationary phase genome dynamics in E. coli using next generation sequencing	59.52	Aswin Seshasayee
34.	DBT	The role of Phospholipase D in regulating neuronal vesicular transport	37.04	Raghu Padinjat
35.	DBT	Molecular genetics of intracellular calcium signaling in neurons with application to neurodegeneration and lipid metabolism in humans	72.10	Gaiti Hasan
36.	DBT	Macromolecular Crystallography and Scattering Facility at NCBS-inStem	678.54	Deepak Nair
37.	DBT	National Mouse Research Resource (NaMoR)	375.00	Sumantra Chattarji
38.	DBT	IndiaBioscience	86.42	Satyajit Mayor
39.	DBT	Regulation of Drosophila larval growth and TOR signaling a novel phosphoinositide kinase	25.62	Raghu Padinjat
40.	DST	Understanding the structural basis for the specific recognition of DNA by the transcription modulator hest	16.22	Deepak Nair
41.	DST	The long-term evolutionary causes and consequences of biased codon use in bacteria	35.92	Deepa Agashe
42.	DST	JC Bose fellowship	82.00	K VijayRaghavan
43.	DST	JC Bose fellowship	86.60	Jayant Udgaonkar
44.	DST	JC Bose fellowship	16.00	Satyajit Mayor
45.	DST	Ramanujan Fellowship	72.20	Shachi Gosavi
46.	DST	Ramanujan Fellowship	54.10	Aswin Seshasayee

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
47.	DST	Ramanujan Fellowship	51.10	Krushnamegh Kunte
48.	DST	Ramanujan Fellowship	247.32	Uma Ramakrishnan
49.	DST	Ramanujan Fellowship	71.25	Deepak Nair
50.	DST	Ramanujan Fellowship	32.40	P Shivaprasad
51.	DST	Ramanujan Fellowship	73.00	Sanjay Sane
52.	DST	Year of Science Professorship	19.00	TV Ramakrishnan
53.	DST	Linking plant functional traits to ecosystem services across tropical forest communities in the Western Ghats	16.31	Mahesh Sankaran
54.	DST	Development of behavioral & cell biological assays for activity guided purification of prospectiva anti cancer & behaviour modulating molecules from wasp venoms	73.88	KS Krishnan
55.	DST	Regulation of intracellular Calcium in the Drosophila nervous system and it's relevance to neuronal function	43.99	Gaiti Hasan
56.	DST	Genetic mating system and its evolutionary consequences in a harem-forming promiscuous bat Cynopterus sphinx	43.93	Uma Ramakrishnan
57.	DST	Cognitive science research initiative (CSI) entitled generativity in cognitiva networks	91.08	Sumantra Chattarji
58.	DST-SERB	Investigating the Folding and Domain Swapping Mechanism in Cystatin-Like Folds with Structure-Based Models	19	Nahren Mascarenhas
59.	India Alliance	System analysis of membranes in development & cell biology	286.13	Dominik Schwudke
60.	India Alliance	Programmable DNA Sensors to capture spatial and temporal gradients of second messenger concentrations in living cells	304.51	Yamuna Krishnan
61.	India Alliance	Control, stability & energy consumption during locomotion on uneven terrain	324.97	Madhusudhan Venkadesan
62.	India Alliance	Computational cell biology:	179.86	Mukund Thattai

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		Exploring the organizing principles of transcriptional regulatory networks and intracellular traffic networks		
63.	India Alliance	Using CREB overexpression to track systems consolidation of an allocated memory trace	49.15	Daniel Weatherill
64.	India Alliance	Role of IP3 receptor mediated neuropeptide release in Drosophila feeding and metabolism	83.80	Megha
65.	India Alliance	mGluR-Dependent Synaptic Plasticity: Parallels and Distinctions between the Hippocampus and Amygdala and Implications for Fragile X Syndrome	58.81	Debarati Mukherjee
66.	IA	Light Mediated Release of Functional Small Molecules and Macromolecules from Designer DNA Nanocapsules in Living Systems	135.63	Aneesh Veetil
67.	India Alliance	Mechanisms of synapses maintenance in the nervous system-implications for neurodegeneration	102.14	Albert Chiang
68.	India Alliance	Understanding the dynamics of the components of the GEEC endocytic pathway using visualization techniques	128.31	Gayatri Muthukrishnan
69.	India Alliance	The developing brain & the emergence behaviour a can for neuromodulation	247.32	Vatsala Thirumalai
70.	IUSSTF	Indo US science & technology forum on Nano biotechnology	198.50	K VijayRaghavan
71.	MoES/ ATREE	Hydrologic & carbon services in the western ghats:response of forests and agro ecosystem to extreme rainfall events	32.39	Mahesh Sankaran
72.	UGC	Carbon flux measurements in island rainforest ecosystems	5.32	Mahesh Sankaran
73.	UKIERI	Deciphering variable impedance strategies in human locomotion for	11.01	Madhusudhan Venkadesan

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		the development of next generation robotic devices		
74.	Sanofi-Aventis	Targeting Head & Neck Cancer Stem Cells	90.00	Satyajit Mayor
75.	Tata Trust	M.Sc programme in Wildlife Biology and conservation.	160.76	Ajith kumar
76.	Wipro	Wipro applying thought in schools	55.2	Mahesh Sankaran
<b>Total Rs. 7,761.11 lakh</b>				

**(b) Minor National projects:**

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
1.	CSIR	Structure and Biochemistry of prokaryotic Y-family DNA polymerases	8.67	Deepak Nair
2.	CSIR	Phylogenetic analysis, computer modelling and biochemical characterisation of proteins in phenylacetic acid hybrid pathway	2.95	R Sowdhamini
3.	CSIR	An open source integrated computational resource for the analysis of the structural interactome to predict off site interactions of drug candidates	3.79	R Sowdhamini
4.	CSIR	Evolutionary consequences of altering tRNA gene copy number	9.52	Deepa Agashe
5.	DST	JC Bose fellowship	16.00	Satyajit Mayor
6.	DST	Research on wildlife biology and conservation by students of Masters course in National Centre for Biological Sciences	37.43	Ajith kumar
7.	DST-SERB	Behavioural and landscape ecology of snow leopard in the Indian trans-Himalaya	21.55	Uma Ramakrishnan
8.	DST	Synaptic reorganisation of the amygdala-hippocampus circuit	15.00	Sumantra Chattarji

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		during stress		
9.	DST	Genomic analysis of dosage dependent silencing of horizontally-acquired genes by the nucleoid-associated protein H-NS in <i>E. coli</i>	14.50	Aswin Seshasayee
10.	DST	Complex combinatorial control of the balance between two bacterial lifestyles: planctonic and biofilm	1.60	Aswin Seshasayee
11.	DST	Dissecting mechanisms of 5-HT signalling using mouse models depicted in central serotonin	2.70	Mitradas Panicker
12.	DST	Transcriptional control of L-arabinose metabolism in bacillus subtilis	14.40	Deepti Jain
13.	DST	Studying the molecular correlates underlying stress induced behavioral and structural plasticity	4	Rohan Kamat
14.	DST	Purinergic & serotonergic signalling in neurogenesis	13.75	Mitradas Panicker
15.	DST-SERB	Characterization of chronic myeloid leukemia (CML) stem cells in terms of novel biomarkers and therapeutic targets	15	Rakesh Khatri
16.	DST-SERB	An evolutionary ecological approach to the adaptive basis of immune priming in invertebrates and immunosenescence	12	Imroze Khan
17.	DST-SERB	Adaptive radiation in Papilio (Menelaldes) swallowtail butterflies of the Indo-Australian region	4.5	Jahnvi Joshi
18.	India Alliance	Bodystorm hits Bangalore	10.00	Mukund Thattai
19.	National Geographic	Evolution on Indian sky Islands : has paleo-climate caused differential demographic history in a floral and faunal community on the sky-islands of the Western Ghats	10.00	VV Robin
20.	NTCA	The connectivity between tiger population in central indian	8.39	Uma Ramakrishnan

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
		landscape		
21.	UGC	Carbon flux measurements in island rainforest ecosystems	5.32	Mahesh Sankaran
22.	UKIERI	Deciphering variable impedance strategies in human locomotion for the development of next generation robotic devices	11.01	Madhusudhan Venkadesan
		<b>Total</b>	<b>242.08</b>	

**(c) International projects (2012-15):**

	Agency	Project Title	Total Grant (Rs. lakhs)	Faculty
1.	AOARD	Sensorimotor integration of antennal positioning behaviour in flying insects	89.40	Sanjay Sane
2.	AXA	AXA Fellowship	91.99	Marcus Taylor
3.	AXA	Deciphering the role of active remodeling of cortical actin on the spatiotemporal organization of cell surface molecules using an in vitro assay	82.37	Darius Koester
4.	HFSP	From swarm intelligence to living buildings. Novel concepts of managing internal climates	137.34	Sanjay Sane
5.	HFSP	Nano-Mechano-Biology: spatiotemporal remodeling of membrane nanoplateforms under mechanical forces	178.09	Satyajit Mayor
6.	HFSP	Foot in motion: materials, mechanics and control	72.21	Madhusudhan Venkadesan
7.	HFSP	Dissecting the Mechanochemistry of Membrane Invagination using Designer DNA-based Probes	202.50	Yamuna Krishna
8.	HFSP	Implication of Tail Structural Features on Molecular Mechanism and Biological Functions of Myosine	504.00	R Sowdhamini



9.	ICGEB	Functional characterization of gut microbial communities and their fitness effects during dietary switches in butterflies	10.63	Deepa Agashe
10.	NIH	System biology centre in New York	80.23	Upinder Bhalla
11.	NSF	Evolution, Diversification and Biogeography of Cicadas (Insecta: Hemiptera: Cicadidae) on the Indian Subcontinent	40.19	Krushnamegh Kunte
12.	Simons Foundation	Simons Center for the Study of Living Machines	184.37	Mukund Thattai
<b>Total 1,673.32</b>				

## 18. Inter-institutional collaborative projects and associated grants received

**National**

	<b>Collaborating Institutions</b>	<b>Project Title</b>	<b>Total Grant (Rs. lakhs)</b>	<b>Duration</b>	<b>Faculty</b>
1.	1. Nagaland Science and Technology Council, Kohima. 2. Kohima Science College, Jotosma, Nagaland. 3. IBSD, Imphal, Manipur. 4. IBSD, Gangtok, Sikkim. 5. Rajiv Gandhi University, Itanagar. 6. North Eastern Hill University, Shillong. 7. University of Agricultural Sciences, Bangalore. 8. IISc., Bangalore	Chemical ecology of the North East Region (NER) of India: A collaborative programme linking NER and Bangalore researchers	589.24	5 years	Dr. Uma Ramakrishnan
2.	1. Translational Health Science and Technology Institute, Gurgaon. 2. All India Institute of Medical	Understanding Disease Biology and Diagnosis of Bacterial Sepsis among Hospitalized Neonates: A Multi Centre Study	1.38	4 years	Dr. Aswin Seshasayee

	Sciences, Delhi				
3.	1. National Institute of Plant Genome Research, Delhi. 2. Delhi University, New Delhi. 3. IISc., Bangalore. 4. Osmania University, Hyderabad. 5. IISER, Trivandrum	Functional Characterization of Genetic and Epigenetic Regulatory Networks Involved in the Reproductive Development in Rice	196.1	5 years	Dr.Shiva Prasad P V
4.	1. St.Johns Medical College and Hospital, Bangalore 2. TIFR Centre for Applicable Maths, Bangalore	Notch signalling & human cancer cell molecular mechanisms & development of a translational initiative programs	426.87	5 years	Dr.Sudhir Krishna
5.	Centre for Wildlife Studies, Karnataka	Meta-population dynamics of tigers in Malenad-Mysore landscape of Karnataka	33.27	5 years	Dr.Uma Ramakrishnan
6.	National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore	Programme Support on targeted generation and interrogating of cellular models and networks in neuro-psychiatric disorders using candidate genes	75.97	5 years	Dr.Mitradas Panicker
7.	Christian Medical College Vellore Association, Vellore	A longitudinal study of molecular and cellular changes in intracellular calcium signaling with neurological correlates in an SCA1 cohort in South India	34.68	5 years	Prof.Gaiti Hasan
8.	1. Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore 2. Foundation for Ecological Research, Advocacy and Learning (FERAL), Pondicherry.	Hydrologic & carbon services in the western ghats: response of forests and agro ecosystem to extreme rainfall events	32.39	4.6 years	Dr.Mahesh Sankaran
9.	Indian Institute of	Centre of excellence on	594.75	7 years	R Sowdhamini

	Science (IISc), Bangalore	computational & system biology			
10.	Indian Institute of Science (IISc), Bangalore	Molecular genetics of intracellular calcium signaling in neurons with application to neurodegeneration and lipid metabolism in humans	72.1	5 years	Gaiti Hasan
		<b>Total</b>	<b>2056.75</b>		

### International

	Collaborating Institutions	Project Title	Total Grant (Rs. lakhs)	Duration	Faculty
1.	Universite Pierre et Marie Curie, Paris	Genome-scale analysis of differential propensities of different chromosomal domains for horizontal gene insertion in Escherichia coli	57.04	3 years	Dr.Aswin Seshasayee
2.	Research Center for Human and Environmental Sciences Shinshu University, Japan	Complex combinatorial control of the balance between two bacterial lifestyles: planctonic and biofilm	3.63	2 years	Dr.Aswin Seshasayee
3.	Universite de Bourgogne, Dijon, France	Olfactory Modulation of Insect Flight	43.92	3 years	Prof.Gaiti Hasan
4.	School of Geography and the Environemnt, University of Oxford, UK	Carbon flux measurements in island rainforest ecosystems	10.64	2 years	Dr.Mahesh Sankaran
5.	Weizmann Institute of Science, Israel	A Computational Metric Approach to	194.99	4 years	Prof.Upinder S Bhalla

		Olfaction: Characterizing Novel Molecules in Olfactory Space and Novel Spaces Made of Odor Molecules			
6.	Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG), Dresden	Quantitative analysis of the modulation of host trafficking pathways by intracellular mycobacteria	43.37	2 years	Dr.Varadharajan Sundaramurthy
7.	1. Medicines for Malaria Venture International Center Cointrin, Switzerland. 2. . Foundation for Neglected Disease Research, Bangalore	Assay development for P. vivax infected hepatocytes in MTCC plates	107.91	1 year	Dr.Varadharajan Sundaramurthy
8.	1. Institute for Stem Cell Science and Regenerative Medicine, Bangalore 2. Centre for Stem Cell Research, CMC, Vellore 3. National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore 4. Centre for iPS Cell Research and Application (CiRA), Kyoto University, Japan	Accelarting the application of stem cell technology in human diseases (ASHD)	1496.51	5 years	Dr.Raghu Padinjat
9.	University of Cambridge, UK	A Joint Centre for Cancer Biology & Therapeutics	829.88	3 years	Prof.Satyajit Mayor
10.	1. SUNY College of Environmental Science & Forestry, USA 2. Harvard University 3.	From swarm intelligence to living buildings. Novel concepts of managing internal	137.34	4 years	Dr. Sanjay Sane

	Nottingham Trent University 4. National Museum of Namibia	climates			
11.	Laboratoire de Physique et d'Etudes des Materiaux, Paris, France	DNA-encapsulated Quantum Dots for Bio-imaging	30.67	3.8 years	Dr.Praveen Kumar Vemula
		<b>Total</b>	<b>2955.9</b>		

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	Biogeography of the Indian subcontinent	100	5 years	Dr. Uma Ramakrishnan
2.	DAE	XII Plan Project – NCBS I Basic Biology Research	12883	5 years	All NCBS faculty
3.	DAE	XII Plan Project – NCBS II Research Facilities	11385	5 years	All NCBS faculty

20. Research facility / centre with National recognition:

The following facilities at the Centre for Cellular and Molecular Platforms (C-CAMP), managed by NCBS and other partners, are recognized nationally and are available for use by multiple institutions across India (see <http://www.ccamp.res.in/>)

- Confocal and Fluorescence Microscopy facility
- Flow Cytometry Facility
- Animal Care and Resource Centre
- Mouse Genome Engineering Facility
- Chemistry Core Facility
- Cryo-Electron Microscopy Facility
- Radioactive Facility

- Computer Clusters
- X-Ray Facility
- Mechanical Fabrication Facility
- Electronics Engineering Facility
- Biophysics Core Facility
- Fied Stations and Museum
- Green House Facility
- Microfluidics and Microfacbrication Facility
- Nuclear Magnetic Resonance (NMR) Spectroscopy Facility
- Optical Spectroscopy Facility
- Molecular Characterization and Proteomics Facility
- Next Generation Sequencing/Genomics
- Protein Technology Core
- Glycomics and Glycoproteomics Facility
- Lipidomics Facility
- Metabolomics Facility
- High Throughput Screening and High Content Screening Facility
- Fly (*Drosophila*) Facility
- (Nematode) *C.elegans* Facility
- Intellectual Property Management Office and Technology Transfer Office
- Innovation Accelerator
- Biologics/Biosimilar Characterization Facility

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

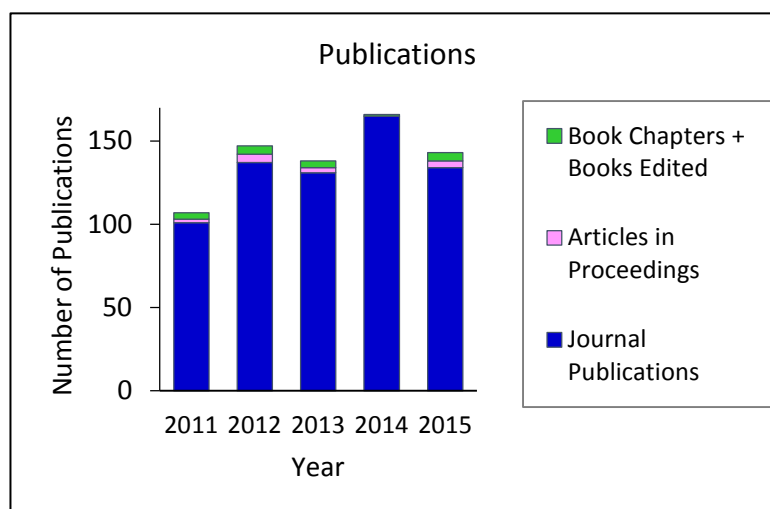
As a part C-CAMP's mandate of promoting entrepreneurship and innovation, C-CAMP has created and fostered an entrepreneur-friendly culture in and around an academic/research environment through its Early Translation Accelerator program, its involvement in seed funding schemes such as Biotechnology Ignition Grant (BIG) scheme from BIRAC, its Entrepreneur Mentorship program and its Bio-incubation facility. C-CAMP has partnered with BIRAC, DBT to help with the Biotechnology Ignition Grant (BIG) scheme grant that funds start-up companies

and individual scientific entrepreneurs to establish proof-of-concept and transform these innovative ideas into viable competitive products and enterprises. Through the BIG Entrepreneur Mentorship program, C-CAMP not only funds but also nurtures these start-ups with scientific and business mentorship. C-CAMP has further expanded its entrepreneurial activities to providing some of these start-ups access to functional laboratory along with high-end technology platforms, through bio-incubation.

For a biotech start-up, along with seed funding, access to such ready to use scientific infrastructure in a nurturing academic environment gives these young entrepreneurs the kick start they need to propel them towards market and commercialization. Today C-CAMP has funded (via BIRAC) and mentors around 47 life science start-ups/spin-offs, of which 11 are incubating at C-CAMP and leveraging the technology platforms and scientific expertise on campus.

## 22. Publications:

NCBS	Journal Publications	Articles in Proceedings	Book Chapters	Books Edited
2010-11	101	2	4	-
2011-12	137	5	5	-
2012-13	131	3	3	1
2013-14	165	-	-	1
2014-15	134	4	4	1
<b>Total</b>	<b>668</b>	<b>14</b>	<b>16</b>	<b>3</b>



- \* Citation Index – range / average –
  - Total number of citations (only for publications mentioned above): 5571
  - Number of citations per faculty- 199
- \* h-index –
  - Range- 0-31 (2011 – 2015)

## 23. Details of patents and income generated

	Patent Holder	Patent Name	Patent No/Status	Date of filing	Income
1.	Yamuna Krishnan and Satyajit Mayor	Intracellular pH sensor using nucleic acid assemblies	US filed	29-05-09	none
2.	Gaiti Hassan and GayatriVenkiteswaran	The use of inositol 1,4,5 triphosphate receptor mutants in Drosophila for screening small molecules	Patent granted US8476006	30-11-09	none
3.	Yamuna Krishnan and Saikat Chakraborty	DNA-based molecular switches and uses thereof	Patent granted US8153437	10-03-10	none
4.	Sudip Mondal and Sandhya P Koushika	A microfluidic device for immobilizing and imaging of developmental processes and growth of transparent/translucent organisms	Filed in India	03-03-11	none
5.	Dhirajbhatia and Yamuna Krishnan	A process for delivering encapsulated neutral bioimaging molecules, complex, and process thereof	US and EP filed	28-04-11	none
6.	Yamuna Krishnan and Saikat Chakraborty	DNA-based molecular switches and uses thereof	Patent granted US8216850	12-08-11	none
7.	Yamuna Krishnan and Souvik Modi	An engineered nucleic acid assembly, vector,	complete filed, PCT	20-09-11	none



		cell, methods and kit thereof	filed , US and EP entered		
8.	Gaiti Hassan and Manivannan Subramanian	Method of determining effect of anti-obesity molecule	provisional and PCT filed, now abandoned	30-05-12	none
9.	Panicker, Odity Mukerjee, Thangaselvam	A method to identify and isolate pluripotent stem cells using endogenous blue fluorescence	Provisional and PCT filed, US and EP	12-11-12	none
10.	Yamuna krishnan and Souvik Modi + SunainaSurana	Method of multiplexing dna sensors, localizing dna sensor and obtaining fret pair	Provisional and PCT filed	26-02-13	none
11.	Yamuna Krishnan and Suruchi Sharma	Nucleotide sequences, nucleic acid sensors and methods thereof	Provisional filed, PCT filed, US filed	04-09-13	none
12.	Yamuna Krishnan, Sonali Saha, Ved Prakash	Nucleic acid scaffold based fluorescent ratio-metric sensor for chloride	PCT filed directly	15-04-14	none
13.	Madhusudhan Venkadesan, Mahesh Bandi and Shreyas Mandre	System and method for obtaining three components of force based on photoelasticity	Provisional filed, PCT filed	03-06-14	none
14.	Anil Prabhakar and Satyajit Mayor	Wavelength stabilized active mode locked fibre laser	Provisional filed, indian complete and PCT filed	10-06-14	none

24. Areas of consultancy and income generated

We confirm that No consultancy was carried out at NCBS or income generated.

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

100% of our faculty every year visit laboratories throughout India and abroad for scientific collaborations, joint programmes and workshops, academic conferences, etc.

#### National

	Name of Faculty member	Place visited	Date (MM/YYYY)
1.	Varadharajan. S	Mangalore	11/2015
		Mangalore	04/2016
2.	Sandeep Krishna	Delhi	04/2015

#### International

	Name of Faculty member	Place visited	Date (MM/YYYY)
1.	Madan Rao	American Physical Society, New York	03/2016
2.	Vatsala Thirumalai	Dublin, Ireland	04/2016
3.	Sandeep Krishna	University Of Tokyo	03/2016
		Universirty Of Waterloo, Canada	04/2016
		Espci, Paris	05/2016
		Embl, Germany	09/2015
		University Of Sherbrooke, Canada	08/2015
		Yale University, New York	08/2015
		Neils Bohr Institute,Denmark	04/2015
		Copenhagen, Denmark	07/2014
4.	Upinder S. Bhalla	Dublin. Ireland	04/2016
5.	Sanjay Sane	London	04/2016
		Portland, USA	01/2016
		Sapporo, Japan	09/2015
		Icbac, USA	06/2015
		Lund University, Denmark	05/2015
6.	Sudhir Krishna	University Of Cambridge, London	04/2014
7.	Shachi Gosavi	Bii, Singapore	06/2014
		Weizmann Institute, Israel	06/2014
8.	Mukund Thattai	Trinity College, Dublin	04/2016
		USA	09/2015

## 26. Faculty serving in

**(a) National Committees :**

	<b>Name of the Faculty Member</b>	<b>Name of the Committee</b>	<b>Role in the Committee</b>	<b>Term of Service</b>
1	Upinder S. Bhalla	Indian Neuroscience Association	Board Member	1999-till date
		Scientific Advisory Committee, National Brain Research Centre	Member	2012-till date
		Neurosciences Task Force, Department of Biotechnology	Chair,	2009-2014
2.	Sudhir Krishna	Research Advisory Council, All India Institute of Medical Sciences	Member	2014-till date
		Scientific advisory committee, Bose Institute, Kolkata	Member	2015-till date
3.	Madan Rao	Scientific Advisory Committee, National Centre for Cell Science, Pune, India	Member	2011-2014
4.	Sanjay Sane	Society of Integrative and Comparative Biology	Member	1996-till date
		Society of Experimental Biology	Member	2005-till date
5.	Gaiti Hasan	DBT Task Force on "Genome editing technologies"	Member	,July 2014-till date
		Scientific Advisory Committee for the National Institute for Biomedical Genomics, Kalyani, West Bengal.	Member	March 2013 – to date
		Intermediate and Senior Fellowships Committee for the Wellcome-DBT India Alliance	Member	2011-till date
		CSIR Medical Sciences Grants Committee	Member	2009-2014
6.	Yamuna Krishnan	Chemistry Biology Interface, Royal Society of Chemistry	Council Member	2014
7.	M.K. Mathew	Scientific Advisory Committee, National Institute for Interdisciplinary	Member,	2011-till date

		Science, Thiruvananthapuram		
		Scientific Advisory Committee, CDFD	Member	2010-till date
		, IISER Thiruvananthapuram	Visiting Professor	2014
8.	Raghu Padinjat	Genome Engineering Task Force. Department of Biotechnology, Government of India.	Member	2014-present
9.	Shannon B Olsson	Coffee Board of India Steering Committee	Member	2014-present
		IBSD Imphal "Prioritization of Animal Bioresources Res. Areas: Fish and Insect" expert committee	Member	2014-present
		Nazareth College Scientific Advisory Board	Member	2014-present
		Chemical Ecology Masters Program and Schools, NCBS	Member	2014-present
10.	Mukund Thattai	Program Committee and Activities, International Centre for Theoretical Sciences	Member	2010 – till date
		Program Committee, Bangalore International Centre	Member	2015-present
		Board of Studies, Srishti College of Art, Design and Technology	Member	2016
		Scientific Advisory Committee, ICGB-CABER	Member	2016
		Board representative, Science Gallery Bengaluru	Member	2015-present
		International Genetically Engineered Machines Competition, Asia Committee	Member	2010-2011
11.	Vatsala Thirumalai	Board of Studies, Faculty of Technology, Anna University, Chennai.	Member	2011-2014
12.	Jayant Udgaonkar	Editorial Board of Protein Engineering, Design and Selection	Member	T 2013-till date

13.	K. VijayRaghavan	Science Advisory Council of the Cabinet	Member	2012-till date
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**(b) International Committees:**

	Name of the Faculty Member	Name of the Committee	Role of the Committee	Term of Service
1.	Upinder S. Bhalla	International Neuroinformatics Coordination Facility	Indian representative	(2009-till date)
		International Society for Systems Biology	Board Member	2009 - till date
		Society for Neuroscience	Member	1991-till date
		Erasmus Mundus (EUROSPIN) program in neuroinformatics (involving KTH Sweden, Univ. of Edinburgh, Univ. of Freiburg, NCBS)	Faculty member	2000-till date
2.	Satyajit Mayor	Asia Pacific Organization of Cell Biology (APOCB)	President	2014-2015
	Satyajit Mayor	Royal Society of Chemistry	Invited Fellow	2014
3.	Sanjay Sane	International Society of Neuroethology	Member	2007-till date
4.	Vatsala Thirumalai	Society for Neuroscience, Washington DC	Member	2002-till date

**(c) Editorial Boards:**

	Name of the Faculty Member	Name of the Journal	Impact Factor	Term of Service
1.	Upinder S. Bhalla	Journal of Computational Neuroscience,	1.739	2000-till date
		Neuroinformatics,	2.825	2010-till date
		Frontiers in Neuroscience	3.656	2010-till date

		eNeuro- Board of Reviewing Editors	--	2015-till date
		eLife- Board of Reviewing Editors	9.322	2015-till date
2	Satyajit Mayor	Biochemical and Biophysical Research Communications	2.297	2014-till date
		Cell	32.242	2008-till date
		Journal of Cell Science	5.4	2011-till date
		Integrative Biology	3.756	2010-2014
		Traffic	4.35	2005-2014
		BiochemicaBiophysicaActa	4.381	2008-till date
		The Biochemical Journal	4.396	2011-till date
		Molecular Biology of the Cell	4.47	2004-till date
3	Shannon B Olsson	Frontiers in Integrative Neuroscience	Review Editor	2014 – till date
		Frontiers in Physiology	3.534	2014 – till date
4	Mahesh Sankaran	Subject Editor Biotropica	2.084	2014 – till date
5	MukundThattai	Editorial Board Member, Journal of Experimental Zoology B	2.311	2013 – till date
		Academic Editor, PLoS ONE	3.234	2007 – till date
6.	VatsalaThirumalai	Journal of Neurophysiology	<b>2.653</b>	2014- till date
		Reviewing Editor, Frontiers in Neural Circuits	3.568	2015-
7.	Jayant Udgaonkar	Editorial Advisory Board of	3.015	2013- till

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

Not Applicable

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects
- percentage of students doing projects in collaboration with other universities / industry / institute

NCBS-TIFR is a research mandate institute. 100% of our graduate students, in the M.Sc.-by-Research, Integrated M.Sc.-Ph.D. and Ph.D. programmes carry out research projects. 100% of our I-Ph.D. and Ph.D. students publish in academic journals as a requirement of the degree.

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

- Faculty Members:**

#### National Awards

	Year	Name of the Awardee	Name of the Award
1.	2013	Satyajit Mayor	Distinguished Alumnus of IIT Mumbai
2.	2012		Infosys Prize for life sciences
3.	2006 2012		JC Bose Fellowship
4.	2003		Shanti Swaroop Bhatnagar Award
5.	2003		Swarnajayanti Fellowship
6.	1999		Wellcome Trust International Senior Research Fellow
7.	1999	Jayant Udgaonkar	Wellcome Trust Senior Research Fellow

8.	1997		Swarnajanti Fellowship
9.	1997	Jayant Udgaonkar	Golden Jubilee Biotechnology Fellowship
10.	1996		B.M Birla Award For Biology
11.	2009	R. Sowdhamini	Fellow of Indian Academy of Sciences, Bangalore
12.	2010		Fellow of Indian National Science Academy, Delhi
13.	2011		Bharat Jyoti Award and Glory India Gold Medal
14.	2012		Indira Gandhi Excellence Award
15.	2007		DBT Career Development Award
16.	2006		DBT Women Bio-scientist Award
17.	2000 2005 2006		Welcome Trust Senior Research Fellow Biomedical Sciences
18.	2013		Mahesh Sankaran
19.	2009	Ramalingaswamy Fellowship	
20.	2009	Ramanujam Fellowship	
21.	2009	Sanjay Sane	Ramanujan Fellowship
22.	2006	Gaiti Hasan	Fellow of the Indian Academy of Science
23.	2005		Fellow of the Indian National Science Academy
24.	2005	Mukund Thattai	Associate, Indian Academy of Sciences
25.	2014	Sumantra Chattarji	Fellow, Indian Academy of Science, Bangalore
26.	2009	Upinder S. Bhalla	Fellow, Indian National Science Academy
27.	2008		Fellow, Indian Academy of Sciences
28.	2007		Shanti Swarup Bhatnagar Award
29.	2012	Krushnamegh Kunte	Ramanujan Fellowship from DST, Government of India
30.	2012	Uma Ramakrishnan	Outstanding Scientist Award, Department of Atomic Energy
31.	2013		INK Fellow
32.	2013	Deepa Agashe	INSPIRE Faculty Award, Department of Science and Technology, India
33.	2013	P.V. Shivaprasad	Ramanujan Fellowship
34.	2013	Aswin Sai Narain Seshasayee	Associate of the Indian Academy of Sciences – recognition to talented scientists below the age of 35
35.	2014	Varadharajan	Ramanujan fellowship (declined)



		Sundaramurthy	
36.	2015	Varadharajan Sundaramurthy	Ramalingaswamy re-entry fellowship
37.	2015	Ranabir Das	DBT-Ramalingaswamy fellowship
38.	2015	Arati Ramesh	Wellcome DBT India Alliance Intermediate Fellowship Ramalingaswami re-entry Fellowship, Dept. of Biotechnology, India (declined)
39.	2015	Raghu Padinjat	Wellcome Trust-DBT India Alliance, Senior Fellowship for Basic Science
40.	2015	Shannon B Olsson	Ramanujan Fellowship
41.	2015	Radhika Venkateshan	Ramanujan Fellowship
42.	2015	Hiyaa Ghosh	Ramanujan Fellowship

#### International Awards

	Year	Name of the Awardee	Name of the Award
1.	2011	K.UllasKaranth- J.Paul	Getty Award for the year 2010-2011.
2.	2013	Jayant Udgaonkar	Fellow, The World Academy of Sciences
3.	1991	Jayant Udgaonkar	Biotechnology Career Fellowship Rockefeller Foundation
4.	2015	Gaiti Hasan	Fellow, The World Academy of Sciences
5.	2012	K. VijayRaghavan	Elected Fellow of Royal Society
6.	2013	Satyajit Mayor	Elected EMBO Fellow
7.	2014	K. VijayRaghavan	Elected to the US National Academy of Sciences
8.	2014	K. VijayRaghavan	Foreign Associate of the US National Academy of Sciences
9.	2014	SumantraChattarji	Honorary Professor, School of Clinical Sciences, University of Edinburgh
10.	2014	Raghu Padinjat	Cambridge--Hamied Visiting Lectureship Cambridge-Hamied Visiting Lectureship
11.	2014	Uma Ramakrishnan	WIRED Innovation Fellow
12.	2015	Uma Ramakrishnan	Bass Fellow, Field Museum of Natural History, Chicago
13.	2016	Uma Ramakrishnan	Parker Gentry Conservation Award, Fulbright Fellow

14.	2005	Raghu Padinjat	BBSRC David Phillips Fellowship
15.	2008	Varadharajan Sundaramurthy	Pfizer research prize for infection biology

- **Students, Postdocs, Scientific Staff and Others:**

#### National Awards

	Year	Name of the Awardee	Name of the Award
1.	2011	Amrita Dasgupta	Recipient of international travel awards by the Govt. of India (Department of Science and Technology; Council of Scientific and Industrial Research; Centre for International Co-operation in Science) to attend international conferences and present the research (June, 2011)
2.	2011	Sumita Chakraborty	Student's bursary, Biochemical Society (London), Signalling 2011, Biochemical Society focused meeting, Edinburgh, June 2011
3.	2011	Riya Raghupathy	DST travel grant to attend the FASEB Summer Research Conference (July 2011) FASEB travel grant (July 2011)
4.	2011	Sony Malhotra	NCBS Best student award (2011)
5.	2012	Seema, S.	ISDN2012 Best Poster Award (2012)
6.	2012	Gayathri Ramachandran	Best poster award, Annual Research Talks, NCBS (January 2012)
7.	2012	Suvrajit Saha	Best Poster Award, NCBS 20(Annual Talks) (Jan. 2012)
8.	2012	Dhiraj Bhatia	Charpak PhD Fellowship to work at ESPCI, Paris for three months (February 2012) Amulya 2012 award from the Karnataka State Innovation Council (2012)
9.	2012	Sumita Chakraborty	CSIR, DBT, DST, CICS Travel fellowship (2012)
10.	2012	Saikat Chakraborty	DST travel grant to travel to USA to attend RNA 2012 conference (2012)
11.	2012	P. Chitra	DST/SERB International Travel Support to attend the DNA Tumour Virus Meeting, 2012, Montreal, Canada (July 2012).
12.	2012	Sudeshna Das	CSIR and DST travel grant to attend 'Frontiers of chemical ecology, 2012', course held in Max

	Year	Name of the Awardee	Name of the Award
			Planck Institute, Germany (2012)
13.	2012	Amrita Dasgupta	CSIR International Travel Grant and International Travel award Fellowship by INSA-CICSto attend the meeting in San Diego, USA (February, 2012)
14.	2012	Aditya Joshi	Conservation Achievement Award from Wildlife Trust of India (2012)
15.	2012	Udippana Kalita	Young Explorers Club Award for her dissertation (2012)
16.	2012	Sonal Kedia	Member Society for Neuroscience (2012)
17.	2012	Gayathri Ramachandran	Best poster award, Annual Research Talks 20 (Genes to Olfaction: Sixty years in science) (January 2012) Best participant and best poster award at the DST sponsored SERB school in chronobiology 2012, held at the North-Eastern Hill University, Shillong (June – July, 2012)
18.	2012	Suvrajit Saha	Best Poster Award, NCBS 20(Annual Talks), Jan 2-4, 2012
19.	2012	Vishnupriya Sankararaman	Student Conference on Conservation Science – Best Poster Presentation Award (2012)
20.	2012	Sonia Sen	DBT travel grant to attend Neurofly 2012 conference held at Padua, Italy (September, 2012)
21.	2012	Ashwin Viswanathan	Student Conference on Conservation Science – Best Poster Presentation Award (2012)
22.	2012	Vanjulavalli Shridhar	selected for Indian Forest Service (2012) Student Conference on Conservation Science – Best Poster Presentation Award (2012)
23.	2012	Bhanu Prasanna Sridharan	Student Conference for Conservation Science – Best Presentation Award for talk (2012)
24.	2012	Arjun Sudheendra Srivatsa	Student Conference on Conservation Science – Best Poster presentation Award (2012)

	Year	Name of the Awardee	Name of the Award
25.	2013	Tanvi Deora	DBT travel award and Charlotte Mangum Student Award from the SICB to attend the SICB 2013 Annual meeting (January 2013)
26.	2013	Mehrab Modi, Sonia Sen, Subhasis Ray, Lakshmi Revathi, P, Kritika M. Garg, Anirban Baral Rajalakshmi, S. and Shilpa Siddappa Yadahalli	Outstanding research and poster award, NCBS Annual talks (January 2013)
27.	2013	Swagatha Ghosh	Best poster Award in Amrita BioAQuest 2013 (August 2013) Best poster award in NCBS Annual talks (January 2014)
28.	2013	Sunaina Surana	Malhotra Weikfield Foundation NanoScience Fellowship Award for the year 2013 in the 6th Bangalore INDIA NANO Awards (December 2013)
29.	2013	Shabana Mehtab	Best Poster Award, NCBS Annual talks (January 2014)
30.	2013	Souvik Modi	Obaid Siddique Award for the Best Paper (January 2014)
31.	2014	Riya Raghupathy	Awarded India network foundation travel grant and CICS travel grant for attending Gordon research conference 'glycolipid and sphingolipid biology' (January, 2014).
32.	2014	Mohammed Mostafizur Rahman	DBT-CTEP travel award to attend Neuroscience 2014, USA (November, 2014)
33.	2014	Suvrajit Saha	DBT(CTEP) International Travel Support to attend 58th Annual Meeting of Biophysical Society, USA CSIR Travel Grant to attend 58th Annual Meeting of Biophysical Society(Declined)
34.	2014	Madhumala, K.S.	The Biocon India Scholarship, a support provided by a unique partnership between Biocon, Bangalore and Trinity College Dublin for

	Year	Name of the Awardee	Name of the Award
			six month visit to Trinity College Dublin (TCD), Dublin. Received best poster award in NCBS annual meeting – ‘Action with in the cells’ held on 15th - 17th Jan 2014.
35.	2014	Sandhya Bhatia	Awarded with book voucher (Crossword) for one of the best three poster presentation at the National workshop on fluorescence and raman techniques (FCS2014) December 2014
36.	2014	Roumita Moulik	Travel award from DST to attend the 28 <sup>th</sup> Annual Symposium of the Protein Society, San Diego, USA (July 2014)
37.	2015	Tanay N Bhatt	Best Poster Award at Chromatin Asia-2015 conference, JNCASR, Bangalore (January 2015)
38.	2015	Mahita Jarjapu	Best poster presentation, NCBS Annual talks (January 2015).
39.	2015	Kamalesh Kumari	Best poster award, NCBS annual talks (2015)
40.	2015	Laasya Samhita	India Alliance travel award to attend FEBS-EMBO 2014 at France (September 2014) Wellcome- DBT early career fellowship (March 2015)
41.	2015	Asem Surindro Singh	International travel grant provided by Science and Engineering Board, a Statutory body under Department of Science & Technology, Govt. of India, for attending OMICS 3rd International Conference and Exhibition on Cell & Gene Therapy, Las Vega, USA (27th - 29th October 2014).
42.	2015	Thangaselvam, M.	Best poster award, Cell Tech India Conference (March, 2015).
		Post Doc fellows	
43.	2012	Deepti Jain	Innovative Young Biotechnologist Award, Department of Biotechnology, Government of India (2012) Best Poster Award at the Annual Talks, National Centre for Biological Sciences, Bangalore (2012)
44.	2012	Madhumala, K.S.	DST travel grant to attend Neurofly 2012

	Year	Name of the Awardee	Name of the Award
			conference held at Padua, Italy (September, 2012).
45.	2013	Megha	The Wellcome Trust/ DBT India Alliance Early Career Fellowship 2013
46.	2014	Tejas M Gupte	Best poster award in NCBS annual meeting (January, 2014)
47.	2014	Amit Das	DST International Travel Support (ITS) award for attending 'Liquids: 9 <sup>th</sup> Liquid Matter Conference, 2014, University of Lisbon, Portugal.
48.	2014	Ishita Sengupta	Innovative Young Biotechnologist Award (2014)
49.	2013	Jahnavi Joshi	Start-up research grant for young scientist from Department of Science and Technology, Govt. of India (Sept. 2013)  International travel grant from Department of Science and Technology, Govt. of India to attend the Early Career Biogeography Conference, International Biogeography Society, at the Australian National University, Canberra, Australia (December, 2013)  NCBS Fellow award at the National Centre for Biological Sciences, Tata Institute for Fundamental Research, Bangalore, India (December, 2013)
50.	2014	Darius Koster	DST travel grant for participation at the 58th annual meeting of the Biophysical Society

#### International Awards

	Year	Name of the Awardee	Name of the Award
1.	2011	P. Chitra	IUBMB Wood Whelan Research Fellowship to visit Prof. Lamoinis Laimins's laboratory at Northwestern University, Chicago, USA, to perform collaborative experiments on "The role

	Year	Name of the Awardee	Name of the Award
			of DNA Methyltransferase1 in regulating the Human Papilloma Virus life cycle in the differentiating epithelium (October, 2011).
2.	2011	Darius Vasco Koester	AXA research fund fellowship for as EMBO young research fellow (2011)
3.	2011	Anirban Baral	Utrecht University short term stay fellowship for international students (2011)
4.	2011	Shameer Khader	Won first place 2011 Eli Lilly and Company Asia Outstanding Thesis Award (2011)
5.	2011	Shilpa Ravinder	The IBRO/SfN International Travel Grant for attending the Annual Meeting of the Society for Neuroscience at Washington, DC, USA (November 2011).
6.	2011	Dhiraj Devidas Bhatia	International Travel Award from CSIR, DBT and DST, GoI to attend the conference DNA17 in Caltech, Pasadena, USA, September 2011. Partial International Travel Award from DNA17, Caltech, USA, September 2011.
7.	2012	Gayathri Ramachandra	Graduate student travel award from the American Society for Biochemistry and Molecular Biology to attend Experimental Biology 2012 in San Diego, USA (March, 2012)
8.	2012	Sudip Mondal	Travel award from EMBO conferences, 2012
9.	2012	Souvik Modi	<i>EMBO Long term Fellowship support for post-doctoral research at University College, London(2012 -14)</i>
10.	2012	Suvrajit Saha	Biophysical Society's International Student Travel Award to attend 56th Annual Meeting of Biophysical Society at San Diego, USA (2012)
11.	2012	Anupama Ambika	Recipient of fellowship sponsored by the International Society of Neurochemistry for attending the conference on Lipid-Protein Interactions at Hyderabad organised by Biophysical society (2012). International travel grant from DST for

	Year	Name of the Awardee	Name of the Award
			attending FASEB summer research conference on "Phospholipid Metabolism: Disease, Signal Transduction, & Membrane Dynamics" at Vermont, USA (2012)
12.	2012	Dhiraj Bhatia	International Travel Award from CSIR, GoI to attend BIOMOD 2012 (2012) Silver Award, Team Mentor for DNA Maestros, BIOMOD 2012, Wyss Institute, Harvard University. Boston, USA. (2012)
13.	2012	Sumita Chakraborty	European Calcium Society Travel Fellowship (2012) Biochemical Society (London, UK) Travel fellowship (2012)
14.	2012	Bikash Choudhary	Travel award from EMBO conferences and DST, 2012
15.	2012	Kritika M. Garg	ISBE travel fellowship to attend the conference (2012)
16.	2012	Supriya Ghosh	Nature Publishing Group Travel Grant and DBT travel support for attending the Gordon Research Conference on 'Neurobiology of Cognition' held in Italy (July 2012)
17.	2012	Suman Raja Jumani	Society for Conservation Biology - Asia – Best Speed Talk Award (2012)
18.	2012	Meghna Krishnadas	Distinguished University Award for Ph.D in Ohio State University (2012)
19.	2012	Madhumala, K.S.	STIBET scholarship by DAAD to visit Prof. Erich Buchner's lab at Institute for Clinical Neurobiology, University of Wuerzburg, Wuerzburg (September 2012).
20.	2012	K. Parthasarathy	Developing Neuroethology Award by the International Society for Neuroethology to attend 10th International Congress of Neuroethology (2012)
21.	2012	Shlesha Rajesh Richhariya	COB, Development travelling fellowship to visit Prof. Michael Rosbash's lab in Brandeis University (September 2012)



	Year	Name of the Awardee	Name of the Award
22.	2012	Gayathri Ramachandran	Graduate student travel award from the American Society for Biochemistry and Molecular Biology to attend Experimental Biology 2012 in San Diego, USA (April, 2012)
23.	2012	Sabareesan, A.T.	Received a travel and conference expenditure fellowship from International neurochemistry association to attend a conference at Hyderabad on Lipid-Protein interaction (2012)
24.	2012	Sonali Saha	Received International Travel Award from CSIR, DBT and DST to attend the conference FNANO in Utah, Salt Lake City, USA, April 2012.
25.	2012	Suvrajit Saha	Biophysical Society's International Student Travel Award to attend 56th Annual Meeting of Biophysical Society, 2012 at San Diego, USA
26.	2012	Seema, S.	ISDN2012 Best Poster Award (2012)
27.	2012	Nandini Velho	RBS Earth Heroes Award (October 2012)
28.	2012	Sunaina Surana	Awarded EMBL Corporate Partnership Registration Fee Fellowship for attending the EMBO Conference Series: C. elegans Neurobiology, 2012. Awarded DBT international travel award to attend EMBO Conference Series: C. elegans Neurobiology, held at EMBL, Heidelberg, Germany 2012
29.	2012	Shashank J. Dalvi	Carl Zeiss Conservation Award for 2013, for his reporting of massive hunting of Amur falcon in Nagaland in 2012
30.	2013	Sapna Jayaraman	Bursary to travel to and live at Cambridge during SCCS Cambridge 2013 and to attend a short course on "A practical introduction to social survey design for conservation science" (2013)
31.	2013	Anand Krishnan	DST travel award and Charlotte Mangum Student Award from the SICB to attend the SICB 2013 Annual meeting in San Francisco. (January 2013)
32.	2013	Manivannan	travel award from Asia-Pacific Developmental

	Year	Name of the Awardee	Name of the Award
			Biology Network (APDBN), Japan to attend the 2nd Asia-Pacific Drosophila Research Conference (APDRC), held at South Korea and won best poster award. (May 2013)
33.	2013	Sachin Sridhara	Australian Development Scholarship (ADS) for Ph.D. in James Cook University - 2013 Australia Leadership Award (ALA) (2013)
34.	2013	Yadugiri, V.T.	Won second place for the Best Student Presentation at the International Conference on Mycorrhiza (ICOM7) held in New Delhi (January 2013)
35.	2013	Amod Mohan Zambre	K.Ullas Karanth – J.Paul Getty Award (2013) Carl Zeiss Conservation Award for conservation (2012)
36.	2013	Dhiraj Devidas Bhatia	First Prize of 2013 Eli Lilly Asia Outstanding Thesis Awards EMBO Postdoctoral fellowship, 2013 Declined FRM Postdoctoral fellowship, 2013 Declined HFSP Postdoctoral fellowship, 2013 Accepted.
37.	2013	Pritha Ghosh	DAAD – A New Passage to India fellowship (2013)
38.	2013	Rajalakshmi, S.	DBT-CTEP travel grant to attend a conference on Gene regulation II, in Cambridge (December, 2013)
39.	2013	Chaitra Prabhakar	Awarded William Randolph Hearst Educational Endowment and Howard A. Schneiderman Endowed Scholarship to attend the 120th Physiology Summer Course at Marine Biological Laboratory, USA (June 2013)
40.	2013	Sonia Sen	Company of Biologist's Travel Grant to visit Jing Wang's lab in UCSD, San Diego, USA (June 2013).
41.	2013	Sonali Saha	Best student talk in the 10th Annual Conference on Foundations of Nanoscience, Utah, USA, 2013.
42.	2014	Jahnvi Joshi	2nd Best Presentation award at the Early Career Biogeography Conference,

	Year	Name of the Awardee	Name of the Award
			International Biogeography Society held at the Australian National University, Canberra, Australia (Jan 2014)
43.	2014	Sudeshna Das	Alexander Von Humboldt Post Doctoral Fellowship, Max Planck Institute of Chemical Ecology (2014)
44.	2014	Aditya Gilra	Cosyne-NSF New Attendee Travel Grant, 2014
45.	2014	Mehrab N Modi	Cosyne-NSF New Attendee Travel Grant, 2014
46.	2014	Pushkar Paranjpe	Bitplane Excellence Awards : Global Image Analysis Competition (February 2014) Best Live Webinar Presentation - "Automatic leg detection, tracking and quantification" (February 2014)
47.	2014	Syed Durafshan Sakeena	Asia Pacific developmental biology network (APDBN) travel grant for attending a meeting on Behavioral neurogenetics of Drosophila larva held in Japan (March 2014) Sadanandappa MK et. al., (2013) article in Journal of Neuroscience, has received Prof. Obaid Siddiqi best paper of the year 2013 runner-up cash award by NCBS and C-CAMP.
48.	2014	Shilpa Yadahalli	Protein Science Young Investigator Travel Grant / Protein Society Finn Wold Travel Award to attend the 27th Annual Symposium of The Protein Society
49.	2014	Anusree, A.S.	International Federation of palynological Societies and Palaeontological Association travel grant to attend European Palaeobotany and Palynology Conference, Italy (August 2014)
50.	2014	Shobha Anilkumar	Nature Travel Grant awarded by the Nature Publishing Group to attend workshop on Molecular & Cellular Neurobiology, THong Kong University of Science and Technology, China (April, 2014)
51.	2014	Bipan Kumar Deb	European Calcium Society (ECS) Fellowship to attend the 3 <sup>th</sup> International meeting of the European Calcium Society, France

	Year	Name of the Awardee	Name of the Award
			(September, 2014).
52.	2014	Divya, R.	Boehringer Ingelheim Fonds Travel Grant to visit University of Cologne, Germany (August – November 2014).
53.	2014	Umesh Mohan	Developing Neuroethology travel Award to attend international Congress of Neuroethology conference, Japan (July-May, 2014)
54.	2015	Tanay N Bhatt	Company of Biologist travel grant to visit University of California at San Diego for collaborative work (March 2015)
55.	2015	Karthikeyan Chandrasegaran	Fulbright-Nehru Doctoral Research Fellowship to visit Illinois State University, USA (February 2015).
56.	2015	Avantika Lal	Simons Graduate Travel Prize (March 2015)
57.	2015	Asem Surindro Singh	International Society for Neurochemistry CAEN travel award for attending 46th ASN (American Society for Neurochemistry) Meeting, Atlanta, Georgia, United States (14th - 18th March 2015) International travel grant provided by Department of Biotechnology, Govt. of India for attending 46th ASN (American Society for Neurochemistry) Meeting, Atlanta, Georgia, United States (14th - 18th March 2015)

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

	Year	Name	Funding Agency	Faculty members
1.	2013	Annual Talks - Control in Biological Systems	NCBS	Dr. Raghu Padinjat, Dr. Vatsala Thirumalai, Dr. Sandeep Krishna, Dr. Mahesh Sankaran
2.	2013	ICTS-NCBS-MBI Programme on	ICTS, MBI & NCBS	Dr. Darius V. Koester, NCBS Prof. John A.

	Year	Name	Funding Agency	Faculty members
		Mechanical Manipulations and Responses on the scale of cell and beyond		Mercer, inStem Prof. Madan Rao, RRI Prof. G.V. Shivashankar, National University of Singapore Prof. Satyajit Mayor, NCBS
3.	2013	NCBS-ICTS Monsoon School on the Physics of Life	ICTS	Prof(s). Mukund, Sandeep, Madhu
4.	2013	Science Journalism Workshop	NCBS	Anil Ananthaswamy
5.	2013	NCBS - Max Plank Lipid Meeting	4641 Directors Budget	Prof. Satyajit Mayor, Prof. Raghu Padinjat
6.	2013	Bangalore Microscopy Course	Corporate Sponsors + Registrations	Manoj Mathew
7.	2013	Student Conference in Conservation Science	Corporate Sponsors + Registrations + Wildlife funding agencies	Dr. V.V Robin
8.	2013	International Conference on Bacterial Expressions	COB, Lady Tata Trust, TWAS, DBT, DST, CSIR	Aswin, Sandeep, DeepaAgashe
9.	2013	Evolution Symposium	Grant from European Society for Evolutionary Biology + Registrations	Prof.KrushnameghKunte
10.	2013	Rufford Grantees Meet	Rufford Small Grants Foundation, UK	Ajit Kumar
11.	2013	Asian Otter Conservation Workshop	Mohammed Bin Zayed Species Conservation Fund	Ajit Kumar
12.	2013	All India Cell Biology Conference	COB+ Corporate Sponsors + Registrations	Jyotsna Dhawan
13.	2014	Indo-US Bioinformatics	NSF-USA	Prof. Sowdhamini,

	Year	Name	Funding Agency	Faculty members
		Workshop		Dr. PramodWangikar
14.	2014	Action within cells and NCBS Board Meeting	NCBS	Dr. Jayant Udgaonkar
15.	2014	Genes Circuits and Behavior	DBT	Prof. Gaiti Hasan, Prof. Ralph
16.	2014	NCBS Glyco Course	NCBS	Prof. MukundThattai, AjitVarki
17.	2014	Em. Bioimaging Meeting	CSIR, COB, DBT, INSA, MBI-NUS, DST, Corporate Sponsors + Registrations	Prof. Raghu Padinjat, Prof. Satyajit Mayor
18.	2014	Indo German Workshop on Insect-Plant Interactions - SERB School for Chemical Ecology	DST-SERB, Axel and KS Krishnan's Grant	Prof. K. S. Krishnan, Axel Brockman
19.	2014	Conference on Concepts and Mechanisms in Plant Development	NCBS	Dr. P.V Shivaprasad
20.	2014	Ecosystem Monitoring and Forest Census Research in India – Workshop	NCBS and Oxford, GEM	Prof. Mahesh
21.	2014	International Computational Neuro Course	NCBS	Prof. Upinder S Bhalla
22.	2014	NCBS-Simons Monsoon School: Physics of Life	Simons Foundation	NCBS
23.	2014	Career Day @ NCBS	Corporate Sponsors	NCBS – DAE Accounts Meeting
24.	2014	Science Journalism Workshop	NCBS	Anil Ananthaswamy
25.	2014	Workshop on DAE Meeting: Accounting Procedures for Autonomous Institutions – DAE	NCBS – DAE Accounts Meeting	PradipPyne
26.	2014	Development and	NCBS	Prof. Gaiti Hasan

	Year	Name	Funding Agency	Faculty members
		Function of the Nervous Systems & Scientific Meeting and Celebration for Mathew, Vijay and Panicker		
27.	2014	6 <sup>th</sup> Bangalore Microscopy Course	DBT+DST+Corporate Sponsors + Registrations	Dr. Manoj Mathew
28.	2014	SCCS Conference	DBT,DST+ Corporate Sponsors + Registrations	Dr. V.V. Robin
29.	2014	Neuromodulation of Behavior	DST, COB, DBT, CEFIPRA, +Registrations	Prof. Gaiti Hasan
30.	2014	NCI-DBT Provocative Questions Workshop	NCI , DBT	Prof. S. Ramaswamy
31.	2014	The Second International Symposium on Protein Folding and Dynamics	DBT + DST, Corporate Sponsors, Registrations	Prof. Jayant Udgaonkar
32.	2015	Annual Talks 2015 / 5 year institutional research review & Annual Symposium on 'Biology Across Scales'	NCBS	Gaiti Hasan, SumantraChatterji, Sanjay Sane -
33.	2015	7th Bangalore Benny Shilo Course on Developmental Biology	NCBS, CoB, DBT, DST	MukundThattai& Benny Shilo
34.	2015	Fundamentals of Anthropolgy	Visitors Budget - (NCBS)	AjitVarki
35.	2015	Retreat on Mechanobiology of Cells & Tissues: Implications to Signaling & Endocytosis	Simons Foundation	Jitu, Madan, Thomas Lecuit
36.	2015	The Annual Meeting - NCBS Max-Planck Lipid Centre	Lipid Centre	Raghu Pandinjat
37.	2015	K. S. Krishnan School of Chemical Ecology	NCBS, CoB, Max Planck, French	Shannon B. Olsson, Axel Brockmann

	Year	Name	Funding Agency	Faculty members
			Embassy	
38.	2014	2nd Workshop on Mechanical Manipulations and Responses at the scale of the cell and beyond	ICTS + Registrations	Darius Vasco Kaster
39.	2015	Uma Ramakrishnan Meeting	Sikkim DBT Grant	Uma Ramakrishnan
40.	2015	BBRC Symposium & Editorial Board Meeting	BBRC Journal	Satyajit Mayor
41.	2015	Science Journalism Course	NCBS	Anil Ananthaswamy
42.	2015	Physics of Life 2015,3rd NCBS-Simons Monsoon School	Simons Foundation	Sandeep Krishna
43.	2015	Computational Approaches to Memory and Plasticity - CAMP @ Bangalore	Simons Foundation, NCBS	Upinder S Bhalla
44.	2015	Northeast Bangalore Collaboration on Chemical Ecology	DBT Grant	Pankaj Gupta
45.	2015	Dialogues in the Clinic Mini-symposium	Visitors Budget - (NCBS)	ArchanaPurushotham
46.	2015	Meeting - Initiative on Sequence Learning and Abstraction	Simons Foundation	U S Bhalla
47.	2015	St. Johns Infectious Disease Meeting - Evolving Clinical Science Interface Discussion Meeting	NCBS	Sudhir Krishna
48.	2015	SCCS Conference -J N Tata Auditorium, IISc	1. Wildlife Conservation Trust 2. Bombay Natural History Society 3. AMM	Ravi Chellam, Uma Ramakrishnan



	Year	Name	Funding Agency	Faculty members
			Foundation 4. Foundation for Ecological Security 5. DuleepMatthai Nature Conservation Trust 6. INLAKS India Foundation 7. Ravi Sankaran Memorial Foundation 8. World Wildlife Fund-India 9. Wildlife Trust of India Nature Conservation Foundation Corporate Sponsors + Registrations	
49.	2015	7th Bangalore Microscopy Course	Corporate Sponsors + Registrations	Satyajit Mayor, Krishnamoorthy, Manoj Mathew
50.	2015	NCBS - Wuerzburg Meeting on Infection Biology	Outreach & Communication Budget - (NCBS)	Varadha, Arati
51.	2015	Post-Doc Symposium	Visitors Budget - (NCBS)	Dr. Megha
52.	2015	Workshop on Biomolecular Interactions	DBT Grant of Prof. R Sowdhamini	R. Sowdhamini
53.	2015	Bacterial Expression – II	Simons Foundation + Registrations	AswinSheshasayee

31. Code of ethics for research followed by the departments

NCBS-TIFR issues the complete details of the Campus Code of Ethics, Laboratory

Safety and Laboratory Etiquette each year in the printed student handbook. We follow all statutory guidelines related to Animal Ethics, Human Subject Research Ethics, Biosafety Regulations, etc. We are in full compliance of all Statutory Ethical Guidelines.

32. Student profile programme-wise:

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

Name of the Programme	Applications received	Selected		Joined		Pass percentage%	
		Male	Female	Male	Female	Male	Female
Ph.D.	32480	67	49	64	49	83	86
Integrated M.Sc.-Ph.D.	11966	38	25	24	25	88	100
M.Sc. (Wildlife Biology)	1993	17	13	18	13	94	100

33. Diversity of students

a) Geographical:

Students	Ph.D.		I-Ph.D.		M.Sc.		Total
	Male	Female	Male	Female	Male	Female	
From the state where the university is located	7	3	2	5	1	0	18
From other states of India	47	38	17	31	9	9	151
NRI students	2	0	0	2	0	1	5
Foreign students	0	2	0	0	0	0	2
<b>Total</b>	<b>56</b>	<b>43</b>	<b>19</b>	<b>38</b>	<b>10</b>	<b>10</b>	<b>176</b>

b) Ungraduate Institution:

	Ph.D.		I-Ph.D.		M.Sc.		Total
	Male	Female	Male	Female	Male	Female	
From Universities	1	0	0	0	0	0	1
From premier science institutions †	8	5	1	1	0	1	16
From premier professional institutions	15	6	0	0	0	0	21

#							
From others*	32	32	18	37	10	9	138
<b>Total</b>	<b>56</b>	<b>43</b>	<b>19</b>	<b>38</b>	<b>10</b>	<b>10</b>	<b>176</b>

† 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 who cleared
1.	NET	30
2.	GATE	28
3.	UGC	13
4.	CSIR-JRF	15
5.	ICMR	2
6.	INSPIRE	2
7.	DBT-JRF	8
8.	JAM	3
9.	JNU Combined Biotech Entrance Exam	2
10.	JEST	1
11.	CSIR-SPM	3
12.	CSIR-LS	4
13.	OCES/DGFS	1
14.	ASRB-NET	1
15.	AIR	1
16.	BET	1
17.	AIEEE	1

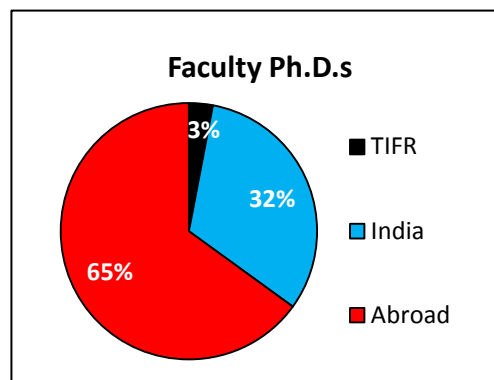
35. Student progression

NCBS-TIFR operates only a graduate and post-doctoral stream. We do not re-hire our own graduates as post-doctoral fellows. Students who complete our M.Sc.-by-Research programme typically go on to Ph.D. programmes at other institutions. Those who complete our M.Sc. Wildlife programmes go on to Ph.D. programmes elsewhere, but also into other career streams such as conservation-related organisations, the Forest Service, etc. Students who complete our Ph.D. and Integrated Ph.D. programmes typically go on to do post-doctoral research at other institutions, but many also join industry positions as staff scientists, or enter other careers such as education.

## 36. Diversity of staff

**Number of faculty who are Ph.D.'s**

from <b>TIFR</b> :	1
from other institutions in <b>India</b> :	11
from institutions <b>Abroad</b> :	22
<b>Total No</b>	<b>34</b>



## 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. Thus, this number is not relevant.

## 38. Present details of departmental infrastructural facilities with regard to

## a. Library

The primary aim of the Scientific Information Resource Centre (SIRC) - library is to develop, organize, preserve and deliver information and scholarly resources for the NCBS community. To these ends, the SIRC explores and implements new technologies to provide effective information services, expand the library's resource collection, and develop a librarian-user partnership.

The library has extensive print and electronic collections including books, bound journals, and a CD/DVD collection of other educational resources. The SIRC subscribes to print journals and multiple electronic resources, participates in consortiums such as TIFR, DAE and UGC-Infonet for expanded access. The SIRC also subscribes to magazines and newspapers of general interest and offers various services including referencing, scanning, off-campus access, inter-library loan and document delivery.

In January 2013. The SIRC moved into the Southern Laboratories Complex, occupying a centrally located space with wheelchair access ramps and a sizeable reading area spanning two floors. Support facilities include wired and wireless internet, computing and audio-visual facilities, printers, scanners, and an online catalogue. The SIRC is open every day, year round.

b. Internet facilities for staff and students

The entire NCBS campus is WiFi enabled and has broadband access to data, including subscriptions to online journals via a proxy server. The total bandwidth is approximately 100 Mbps.

c. Total number of class rooms

- Auditoriums:

189 seater, 250 sqm; 101 seater, 130 sqm; 81 seater, 180 sqm; 70 seater, 100 sqm; 60 seater, 200 sqm

- Seminar Halls:

6 seminar halls, capacity 14-16 each.

d. Class rooms with ICT facility

All our classrooms are WiFi and internet enabled, as well as having digital projection systems. The main auditoriums in addition have sound systems, recording systems, and video-conferencing and distance learning capabilities.

e. Students' laboratories

Two teaching laboratories which have a flexible layout for hands-on and experimental workshops; 200 sqm and 100 sqm.

f. Research laboratories

Each member of the NCBS faculty maintains a research laboratory with a square footage in excess of 100 sqm each. In addition, our common research facilities as

described above all have dedicated laboratory space. The total research area is 8739 sqm of faculty research laboratories and shared laboratories plus 1880 sqm of facilities.

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

	Ph.D. Students		I-Ph.D. Students
1	Anupama H.L.	1	Urvashi Raheja
2	Anup Ashok Parchure	2	Suvrajit Saha
3	Sucheta Kulkarni	3	Nitesh Saxena
4	Varun Varma	4	Priyanka Gupta
5	Joseph Jose Thottacherry	5	Roumita Moulick
6	Mugdha Sathe	6	Taruni Roy
7	Amritendu Mukhopadhyay	7	Pooja Malhotra
8	Durafshan Sakeena Syed	8	Aswathy A.K.
9	Neha Nandwani	9	Lalitha Krishnan
10	Swagatha Ghosh	10	Amruta Varudkar
11	Thangaselvam .M	11	Shuchita Arun Soman
12	Umesh Mohan	12	Shishu Pal Singh
13	Jesvin Singh Madan	13	Radhika Sudhir Joshi
14	Ramya Purkanti	14	Farhana Yasmin
15	Hemanth Giri Rao Vantharam V	15	Aanchal Jatindrakumar Bhatia
16	Aalap Bhalchandra Mogre	16	Avantika Lal
17	Deepankar Singh	17	Shweta
18	Manhar Singh Rawat	18	Shlesha Rajesh Richhariya
19	Sabareesan A.T	19	Ankita Prakash Chodankar
20	Rama Reddy Goluguri	20	Aliasgar Bohra
21	Mahita Jarjapu	21	Giselle Maria Fernandes
22	Urbashi Basu	22	Parijat Sil
23	Sanjeev Mahadeva Sharma	23	Preethi Ravi
24	Joseph Mathew	24	Prabahan Chakraborty
25	Yadugiri V T	25	Saptarnab Naskar
26	Bipan Kumar Deb	26	Kambadur Gundu Ananthamurthy
27	Farah Haque	27	Avishek Ghosh
28	Ajoy Aloysius	28	Sruthi S Balakrishnan
29	Mohini Sengupta	29	Leanna Rose Joy
30	Somya Mani	30	Aparna Agarwal
31	Nihav Dhawale	31	Vishal Tiwari
32	Shilpi Nagpal	32	Payel Chatterjee
33	Mary K Johnson	33	Sandhya Bhatia
34	Prashant kumar Navalbhai Jethva	34	Priyesh Mohanty

	Ph.D. Students		I-Ph.D. Students
35	Pritha Ghosh	35	Krithika Badarinath
36	Snehal Dilip Karpe	36	Chandan Kumar Pandey
37	Kabir Bazmi Husain	37	Steffy B Manjila
38	Chaitra P	38	Ashutosh Shukla
39	Calvin Steve Rodrigues	39	Vandana Agarwal
40	Ebi Antony George	40	Sahana Sitaraman
41	Divya R	41	Bishal Basak
42	Mrudula Sunil Sane	42	Aridni Shah
43	Kruttika Anirudha Phalnikar	43	Pavan Kaushik
44	Prachi Srikanth Thatte	44	Rohini Subrahmanyam
45	Jyothi Venugopal Nair	45	Rohit Dey
46	Sunny Kataria	46	Akshit Goyal
47	Tanay NitinKumar Bhatt	47	Suhas Bhate
48	Arunabha Sarkar	48	Deepanjali Dwivedi
49	Sreekrishna Varmaraja PC	49	Pabitra Nandy
50	Sahil Moza	50	Bhavya Dharmaraaj
51	Rohit Chandrakant Suratekar	51	Furquan Khizar
52	Vishaka Datta	52	Chittaspandini Gopal Kulkarni
53	Lena Mareike Josefine Robra	53	Rashmi
54	Amit Kumar Singh	54	Charuhansini Gopal Kulkarni
55	Harish Kumar	55	Sankarshan Talluri
56	Sahil Lall	56	Aalok Varma
57	Iyer Meenakshi Shankar	57	Chandrima Patra
58	Abrar Ahmed Bhat		
59	Debakshi Mullick		
60	Saurabh Kishor Mahajan		
61	Alok Javali		
62	Soumya Bhattacharjee		
63	Vishram Terse		
64	Terence Christie		
65	Sreemantee Sen		
66	Bhavika Mam		
67	Kiran Sankar Chatterjee		
68	Neetu		
69	Kuldeep		
70	Vrinda Ravi Kumar		
71	Saurav Baral		
72	Riddhi Deshmukh		
73	Srishti Batra		
74	Anubhab Khan		

	Ph.D. Students		I-Ph.D. Students
75	Abin Ghosh V C		
76	Aditya Asopa		
77	Dilawar Singh		
78	Lakshmi Krupa S.		
79	Kumarvardhanam Daga		
80	Athulya Girish. K		
81	Batul Ismail Habibullah		
82	Mohammad		
83	Ankita Kapoor		
84	Zeenat Rashida		
85	Souradeep Sarkar		
86	Kanika Gupta		
87	Vinay Kumar Dubey		
88	Shubham Kesarwani		
89	Sachit Daniel		
90	Shweta Chakraborty		
91	Pratyay Seth		
92	Anupam Singh		
93	Vasvi Tripathi		
94	Kaivalya Sudesh Walavalkar		
95	Sriram Narayanan		
96	Patil Saurabh Ratiram		
97	Teerna Bhattacharyya		
98	Anjali Jaiman		
99	Kamalesh Kumari		

	Post Doctoral Fellows		Post Doctoral Fellows
1	B. Lakshmi	27	Darius Vasco Koster
2	Divya Rajagopal	28	Robin Vadayail Vijayan
3	Monisha Bhattacharya	29	Marcus Taylor
4	Sanjay Kumar	30	Jahnvi Joshi
5	Melvin Prasad	31	Baskar Bakthavachalu
6	Poulomi Biswas	32	Benjamin J. Wigley
7	Shridhivya A Reddy	33	Venkat Ramaswamy
8	Rittik Deb	34	Vishnu Janardan
9	V.S. Pragadheesh	35	Amit Das
10	Indira Singh	36	Deepika Janakiraman
11	Dhananjay Chaturvedi	37	Megha
12	Dambarudhar S S Hembram	38	Daniel Brian Weatherill



	Post Doctoral Fellows		Post Doctoral Fellows
13	S.P. Vijayakumar	39	Laasya Samitha
14	Ishtapran sahoo	40	Anchal Chandra
15	Gnaneshwar V Yadav	41	Kamalakannan Vijayan
16	Ishita Sengupta	42	K. Dhanya
17	Igor Kondrychyn	43	Vivek Ramachandran
18	Bhaktee Dongaonkar	44	Joyshree Chanam
19	Soumita Das	45	Rithvik S. Vinekar
20	Parag Surana	46	Imroze Khan
21	Sagarika Mishra	47	Nahren Manuel Mascarenhas
22	P Chitra	48	Varad B Giri
23	Bini Ramachandran	49	Pradeep Subramani
24	M. Snigdha	50	Savita Chib
25	Renjitha Gopurappilly	51	Ishan Agrawal
26	Pramod Kumar Singh		

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

All the 178 students of NCBS are in either doctoral programmes, or the M.Sc. (Wildlife Biology) programme, and hence they are all given TIFR fellowships.

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

New programmes are discussed at three levels: 1. Internally among the NCBS-TIFR faculty. 2. At the level of the Biology Subject Board of TIFR. 3. At the level of the TIFR Academic Council. Changes in curriculum etc. are settled at the faculty level. Changes in credit and thesis requirements as well as exceptional cases, appeals, etc. are decided by the Subject Board. Introduction of new programmes must be decided by the Council.

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?

Faculty feedback on curriculum development is coordinated through a monthly meeting of all NCBS faculty. This is the forum where any changes to the curriculum must be approved

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

Individual course instructors may issue anonymous forms for student feedback.

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

NA

43. List the distinguished alumni of the department (maximum 10)

Even though NCBS is a relatively young Centre, we have had great success in training researchers and launching them to independent careers. Several of our alumni who received PhDs from NCBS have gone on to join the faculty at various institutions in India and abroad. For example:

	<b>Name of the Alumnus</b>	<b>Reason for Distinction</b>
1.	Rohit Joshi	CDFD HYderabad
2.	Rajat Varma	US National Institutes of Health
3.	Gautam Soni	Raman Research Institute
4.	Sachin Deshmukh	Indian Institute of Science
5.	Bidisha Sinha	IISER Kolkata
6.	Rajan Raghav	IISER Pune
7.	Deepa Subramanyam	NCCS Pune
8.	Ajay Mathuru	Yale-National University of Singapore
9.	Baron Chanda	Univ of Wisconsin, USA
10.	Adish Dani	Washington Univ, USA

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

All our workshops are free and open to all the students in our graduate program. All of these workshops involve outside experiments, many of these workshops include hands-on sessions. See Question 30 for a list of workshops conducted in the past 3 years.

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

The M.Sc. Program in Wildlife Biology involves 3 components: 1. Classroom-based courses with instructors giving lectures, assigning homework, and testing results based on an in-class exam. 2. Mentorship and guidance on research methodologies, oral presentations, and scientific writing. 3. Fieldwork at station sites maintained by NCBS at various locations in India including the Western Ghats, the Andamans, and Sikkim. The Ph.D., I-Ph.D. and M.Sc.-by-Research programmes are based mainly on classroom courses. Instructors teach based on textbooks as well as scientific literature surveys. Basic courses are typically based on textbooks and culminate in an in-class exam, whereas advanced courses on recent developments are based on literature surveys and culminate in a graded project. Strong emphasis is placed on student participation.

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

Student learning out comes are monitored at two levels. First, at the level of individual course examinations. Second, at the level of the Qualifying Examination (QE). The QE must be taken after 3 semesters (for Ph.D.) or 4 semesters (for I-PhD) from the date of joining. It is an 8-hour written examination that covers all aspects of the coursework. Students have two attempts to pass this examination. In addition, student research progress is monitored via their Thesis Committee Meetings and Annual Work Seminars.

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

NCBS Outreach programs are aimed to bring in as many young minds as possible to consider pursuing Science. PIs at NCBS are the driving force of these initiatives. NCBS does get a fair share of interest from other institutes, who do wish to visit us as they consider the institute as the place to be exposed to for the kind of science we pursue.

For example, between 2015-16 the institute hosted 37 visits from University, Institutes (national & international) and Schools. Visits to NCBS include, talks by

select PIs, Talks by the academic office, facility, lab visits and a campus tour. Some visiting institutes include University of Kashmir, VIT, IIT Chennai, Christian College, Kerala, Devanahalli Government School.

PIs also organize individual outreach programs where they invite schools for specific interactions. E.g. the MOTH DAY@NCBS where Sanjay Sane and Shannon Olsson labs set up lab interactions aimed to raise awareness among primary and secondary school groups in July.

One of the highlights of 2016 - On the occasion of the 25 years celebrations we organized a school outreach program for 3 Kendriya Vidhyalaya schools. The students attended talks and were taken through lab experiences from Drs, Aswin Seshasayee, Sanjay Sane & Axel Brockmann labs. More such programs are planned for future.

Faculty involved in outreach program so far are as follows: Drs. Varadharajan Sundaramurthy, Sudhir Krishna, Aswin Seshasayee, Sandeep Krishna, Krushnamegh Kunte, Mukund Thattai, Sumantra Chaterjee, Arati Ramesh, Satyajit Mayor, Upinder Bhalla, Apurva Sarin, Raghu Padinjat, Sowdhamini, Vatsala Thirumalai, Shannon Olsson, Hiya Ghosh, Deepa Agashe, Axel Brockmann

Heads involved in outreach program so far are as follows: Manoj Mathew, H. Krishnamurthy, Ms. Poornima, Ashok Rao, Nandini (IBS), Aparna (Science and Society), Rashi Tiwari (Academic Office)

Students/Post docs involved in outreach program so far are as follows: Savita Chib, Dhananjay, Lakshmi, Sakeena, Baskar, Meghana exhibited.

48. Give details of “beyond syllabus scholarly activities” of the department.

There are numerous components to beyond-syllabus activities.

1. A student’s primary research on their thesis topic.
2. Student presentations at Annual Work Seminars and in poster presentations during the Institute’s Annual Review Meeting.

3. Student participation in Journal Clubs to keep abreast of all the recent literature in relevant fields.

4. The annual student-led workshop known as “Symposium” where students discuss interesting ideas in a forefront research area of life sciences.

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

The Review Committee constituted by the UGC, which visited TIFR during February 2010, also visited NCBS. In addition, in 2010 the Academic performance of NCBS was also reviewed by a panel of international experts set up by the Governing Council of TIFR.

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

The core contribution of NCBS-TIFR is in the form of peer-reviewed publications in international scholarly journals including the highest category of journals in the life sciences such as Nature, Science and Cell. NCBS faculty and students have so far written over 1100 papers in international peer-reviewed journals.

NCBS faculty have made fundamental contributions to several areas of biology. To give some examples: The work of Prof. Obaid Siddiqi on the development of the nervous system was extremely influential and acknowledged globally. Prof. Vijay Raghavan’s work has revealed the mechanism of muscle development in animals. Prof. Satyajit Mayor’s research has redefined the way biologists think about the functioning of the cell membrane. Prof. Upinder Bhalla is a world leader in understanding how olfactory stimuli are processed in the mammalian brain. Prof. Jayant Udgaonkar’s experiments have revealed the key to protein folding and aggregation during neuro-degeneration. Prof. Uma Ramakrishnan has made fundamental contributions to understanding the status of endangered animal populations, including tigers, throughout the Indian subcontinent. Prof. Yamuna Krishnan has pioneered the field of DNA nanotechnology, with potential applications across chemistry, biology, and medicine.

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

**Strengths**

Excellent research faculty and staff, research infrastructure, connection to international partner institutions, high visibility among potential students, track record in research and publications.

**Weaknesses**

Lacunae in certain research areas, low rate of attracting post-doctoral fellows, poor engagement with medical programmes, under-representation of humanities and social sciences in the curriculum, untapped use of distance-learning tools.

**Opportunities**

New research areas such as experimental biophysics, genome engineering, etc. Collaborations with hospitals and clinicians. New opportunities for public engagement via Science and Society Programme. Leveraging connections with other Institutions in Bangalore for research and teaching collaborations. New opportunities for field biology and conservation via networks of field stations.

**Challenges**

Sporadic research funding environment. Poorly prepared students in intake stream. Challenges of managing organic campus growth while maintaining excellence of academic program. Poor academic recruitment environment for our graduates. Modernizing the teaching curriculum for rapidly changing areas.

52. Future plans of the department

**Thrust areas:**

- Faculty hiring in new research directions.
- Expansion of post-doctoral programme including international recruits.
- Development of strong connections with funding bodies to support long-term research goals.
- Emphasis on scientific writing and presentation.