



# INSTITUTE OF LIFE SCIENCES

Bhubaneswar



## December 20, 2017 DEDICATION CEREMONY OF THE STAKEHOLDERS EMPOWERMENT CENTRE



Shri Naveen Patnaik, Hon'ble Chief Minister of Odisha dedicated the Stakeholders Empowerment Centre of the Institute. This centre aims at engaging the stakeholders for capacity building, skill development and conducting seminars, conferences and consultations on scientific advances and policy implications.

### HIGHLIGHTS

- Dedication ceremony of Stakeholders Empowerment Centre
- EMBO International Symposium.
- International conference on Proteomics.
- 69<sup>th</sup> Republic Day Celebration at ILS.
- 27<sup>th</sup> Foundation Day of ILS.
- Genome India Meet.

### Dr. Subrat K. Das' Group



My laboratory is working on microbial genomics towards translational research. In this regard, useful microbes with biotechnological potential have been isolated and characterized from hot springs and marine environments for bioprospecting of novel genes and metabolic pathways. An environmental isolate *Bordetella bronchiseptica* strain, HT200 has been characterized based on comparative genomics and cellular approach. In vitro and in vivo experiments are underway to understand the efficiency

of strain HT200 as a whole cell vaccine. Besides, we have narrated the coexistence of two novel ICEs of the same exclusion group either S(SXT) or R(R391) in the genome of the genus *Marinomonas* by comparative genomics. Further, we are using metagenomic approach to unveil the community composition and functional correlation of microbiome in pristine environment. Following polyphasic approach, 20 new microbes have been discovered from unmanaged ecosystem. Our future goal on genome scale reconstruction of metabolic model with these microbes can be useful for the functional analysis of pathways involved in Bio-Geochemical cycle, synthesis of metabolites and pharmaceuticals.

### Dr. Narottam Acharya's Group

While postulating the structure of double stranded DNA by Watson and Crick in their seminal article published in NATURE, 1953, they stated that "It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material." Genome stability is directly associated with cell death, oncogenesis, chemoresistance, and development of an array of complex diseases in humans. While error in the DNA can arise at any steps of cell division, our laboratory is mostly interested on the establishment and function of elongating replisome.



Genetic and biochemical studies in *S. cerevisiae* have indicated that the genomic DNA replication is carried out by the coordinated action of DNA polymerases- Pol $\alpha$ -primase, Pol $\delta$  and Pol $\epsilon$ . Multiple cancer associated SNPs have been mapped to human Pol $\delta$  subunits, therefore, deciphering the role of each of the subunits in structural architecture, fidelity and processivity of the Pol $\delta$  holoenzyme is one of our priority areas.

Available evidences suggest that genomic instability in the form of mutations and chromosomal aberrations is a common occurrence in pathogenic and drug resistant clinical isolates of *C. albicans*, and is believed to be one of the critical determinants of its virulence. Thus, we are also engaged in characterizing DNA polymerases from *C. albicans* to decipher, their role in morphogenesis, multidrug resistance and candidiasis. Being a part of human microbiota, *C. albicans* is proposed to govern immunity and developmental processes in the hosts. Therefore, we are also exploring various pro-biotic functions of this opportunistic pathogen in animal model systems.



### India-EMBO Symposium Autophagy: Cellular Mechanisms and Significance in Health and Disease **December 11-13, 2017**



The Institute organized a three day International Conference on “Autophagy: Cellular mechanism(s) and significance in health & disease”. This conference was organized with the support of India-European Molecular Biology Organization (EMBO) and Wellcome Trust DBT-India Alliance and was attended by over 100 participants. Ten leading researchers in the area of autophagy from outside India, and 5 Indian researchers were invited as experts, in the conference. They interacted with 70 young scientists and students selected from India. The workshop was inaugurated by Dr. Ajay Parida, Director, Institute of Life Sciences and Dr. Sahid Jameel, Chief Executive Officer, Wellcome Trust – DBT India Alliance. The conference focussed on discussions in the area of fundamental science (mechanisms, regulation, and functions), its biomedical relevance in health and disease management and the translational aspect of drug discovery.



### 9th Annual meeting of Proteomics Society, India and the International Conference on Proteomics for Health and Disease.

**November 29–Dec 2, 2017**

International Conference on Proteomics in Health and Disease was held along with 9<sup>th</sup> Annual Meeting of Proteomics Society, India (PSI) at Institute of Life Sciences (ILS), Bhubaneswar. The PSI-2017 congress was a gathering of national and international eminent scientists working in the field of proteomics for Health and Diseases covering human, animal and plant biology. The theme of the conference was “Proteomics in Health and Disease” focussing in the area of Global and Targeted proteomics, Interaction proteomics &

protein networks, Disease proteomics & Biomarker Discovery, Post-translational modifications (PTMs), Metabolomics and Integration of Omics, Proteogenomics and Big Data Analysis, etc. Naming few eminent speakers who delivered their talks, like **Dr. D. R. Mani, Dr. M. A. Vijayalakshmi, Dr. Debasis Dash, Dr. Ravi Sirdeshmukh, Dr. Sanjeeva Srivastava, Dr. Stephen Pennington**, this scientifically rich conference achieved to cross a milestone for PSI and this added a feather in the cap of PSI.

### Workshop on Microtomy/Ultra-microtomy **April 12-13, 2017**

The Workshop on Microtomy/ Ultra-microtomy, staining and imaging techniques, was held at ILS, Bhubaneswar. The workshop was intended to refine the skills of the research scholars. Scholars from different Institutes and Universities participated. The day came to an end with a group photo session.





## Swachh Bharat

**December 17, 2017**

In support of Swachh Bharat Abhiyaan, ILS participated in Swachhta pakhwada whereby the faculties were enthusiastically engaged.



## Invasive species

**November 24, 2017**

Institute of Life Sciences (ILS) and Institute of Bioresources and Sustainable Development (IBSD) organised a discussion meeting on priority area of research on

Invasive Species. Scientists from ILS, IBSD, NIPGR, Kashmir University, Jammu University, RGCB, NBRI, Univ. Agriculture Sciences, Bangalore; NISER Pune, Ashoka University, KIIT University participated in the meeting.



## Workshop on Scientific Intervention for Economic Development in Nabarangpur District

**February 15, 2018**

Dr. Rajeeb Swain and

Dr. Sunil Raghav, scientists of ILS attended the Workshop on Scientific Intervention for Economic Development in Nabarangpur District, Odisha, India.

## Genome India Meet

**April 6, 2017**

ILS hosted the meeting of the institutional



partners of the GenomeIndia Project. As among the 16 partners, ILS will be involved in Whole Genome Sequencing (WGS) of over 1,000 individuals spanning different ethnic, linguistic and socio-cultural sections of the state of Odisha. This will help in identification of the genetic disease burden of specific subsets of populations and will have far-reaching implications in improving the healthcare landscape of the state. The participants discussed and finalized common standardized protocols for sampling strategy, methodology, and data storage and analysis.

## Sanyukt Rajbhasa Vaigyanik Sangoshthi

**March 20, 2018**

Dr. D. V. Singh, delivering inaugural speech at NISER, Bhubaneswar



## Visit of the European Delegates

**February 23, 2018**

The European Union Scientific delegation with representative



of the embassies of Belgium, Sweden, Norway, Poland, Switzerland, France, Italy, Hungary and Denmark visited Institute of Life Sciences (ILS) today and held discussions with scientists of ILS.

## International Conferences

### Experimental Biology conference of the American Society for Biochemistry and Molecular Biology

**April 21-25, 2018. San Diego, USA**

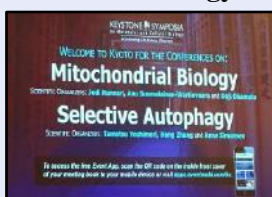
Dr Gulam.H.Syed attended this conference, where he presented his work entitled "Mitochondrial selective autophagy (Mitophagy) during Dengue infection" in the "Mitochondria in Health and Disease" session on April 22, 2018.



### Keystone Symposia on Molecular and Cellular Biology.

**April 22-26, 2018. Kyoto, Japan.**

Dr. Santosh Chauhan, attended this conference and delivered a short talk on "TRIM16 Control Protein Aggregates Turnover by Regulating NRF2-p62 Axis and Autophagy Process".



## Republic day

**January 26, 2018**



The 69<sup>th</sup> Republic Day was celebrated in ILS, with all its scholars, scientists and staff members. The Director, ILS, motivated all of us to be a responsible citizen as well as a responsible scientist. Pride is in making India stand out with our work and dedication, as scientists.



## Foundation Day

February 11, 2018



To commemorate the establishment of the Institute, its 27<sup>th</sup> foundation day was celebrated. The morning session was graced by the presence of eminent dignitaries like **Shri Sashi Bhusan Behera**, the Hon'ble Minister for Finance, Excise and Public Enterprises, **Prof. S.M.Patnaik**, **Dr. Saghmitra Pati**, **Dr. S.C.Mahapatra**, **Dr. Jitendra Sunderray**, **Dr. Mrutunjay Suar**. Along with their motivational speech about novel approaches that need to be instilled for progress in various dimensions of research, the annual report for the year 2017 was released.



Celebrations in the evening were adorned with lights, enthusiasm and vivid performances by the entire family of ILS. Beginning with Saraswati vandana, the zeal of the students culminated in exquisite performances, ranging from classical- folk to Bollywood masala, mesmerising solo and group vocals to spell-bound melody of Adhikaar (band of ILS) and dramatic skills leading the audience from tear-invoking laughter to gut-wrenching horror. The evening came to an end with appetizing Indian delicacies.



## Foundation Day Oration

The Vice Chancellor of Presidency University, Kolkata, **Prof Anuradha Lohia**, delivered an inspiring speech on the topic “**The Uncertainty of Survival**”, sharing her opinion on the never-ending qualms of research and the wisdom gained thereafter. Later, research scholars, Ankita Shrestha, Debashis Deb, Sunanda Mallik, Ashish Kumar and Shefaly Parmar received awards for their excellent work and journal presentations for the year 2017-18 from Prof Lohia. The morning was addressed by soulful ragas of Indian classical music by Mr. B M Mishra.

## Women's Day

March 7, 2018

On the eve of **International Women's Day**, ILS Bhubaneswar organised a panel discussion on the topic **#PressForChange** on 7<sup>th</sup> March, 2018. The discussion encompassed pivotal issues of financial security, education, safety and fundamental rights for women. This was presided by **Dr. Priyambada Mohanty**, Former Vice Chancellor, Sambalpur University, **Prof. Padmaja Mishra**, Vice Chancellor, Ramadevi Women's University, **Dr. Kanta Das Mohapatra**, Principal Scientist, ICAR-CIFA, **Prof. Swapna Mohapatra**, Dept. of Physics, Utkal University and **Dr. Namrata Chadha**, Social Activist, who ended the session with the recitation of one of her poems, at the end of which the audience could not resist itself, but break into applaud.



## Awards

- **Mr. Ahamed Khan**, Ph.D. student, receives **Best Poster Award** in the International Conference on Plant Development Biology (ICPDB). December 23, 2017.
- **Ms. Rashmi Ray**, Ph.D. student, received **National Finalist medal, Inspiring Science Award, 2018** from HHMI Professor David Anderson, Caltech and Cell Press CEO and Editor in Chief Cell, Dr. Emilie Marcus at Bangalore for her discovery which shows **Lysophosphatidic Acid converts monocytes into macrophages both in mice and humans**. January 20, 2018.
- **Dr. Pujarini Das**, Postdoctoral Scientist received the **Best Poster Award** at “37th Annual Convention of Indian Association for Cancer Research” held at Bose Institute, Kolkata. February 11, 2018.
- **Ms. Shuchi Smita**, Ph.D. student, receives **Best Poster Award** at GATC-2018 conference held. 7-9th January 2018.

### Best Journal Presentation Awards presented to

- Debasish Deb
- Sunanda Mallick
- Ashish Kumar

### Best Work presentation Awards presented to

- Ankita Shrestha
- Sunanda Mallick
- Shefaly Parmar

by Prof. Anuradha Lohia, Vice Chancellor, Presidency University, Kolkata.

### Research awards were presented to ILS researchers

- Dr. Pujarini Das.
- Mr. Manohar
- Ms. Shuchi Smita
- Mr. Debasish Deb

### Employee of the Year 2017 Award presented to ILS staffs

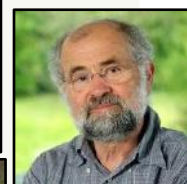
- Mr. Diptiranjan Dash
- Mr. Vaibhav Tiwari
- Mr. Narottam Nayak
- Mr. Kshitish Nayak

by Shri Sashi Bhusan Behera, Hon'ble Minister for Finance, Excise and Public Enterprises, Govt. of Odisha.

- **Dr. Nrisingha Dey** has been elected Fellow of the WAST in the year 2017.

## Guest Lectures

- **Prof. Govindjee**, *University of Illinois, Urbana–Champaign, USA*, delivered a talk on “**World Authority on Photosynthesis and Plant Productivity**”. January 5, 2018.
- **Nobel Laureate Prof. Erwin Neher**, *Director and Scientific Member at Max Planck Institute* had delivered a talk at ILS Auditorium with an interaction session. January 11, 2018.
- **Dr. Stefan Meyer**, *MD PhD FRCPCH from University of Manchester* delivered a talk on “**The Fanconi anaemia /BRCA DNA Damage Response – Clinical and Translational aspects for development and leukaemic transformation**”. February 27, 2018.
- **Prof. Satya Parida**, *Group Leader of Pathology, Vaccinology, Virology at the Pirbright Institute, UK* delivered talk on “**Use of reverse genetics to develop vaccine and study disease pathogenesis**” March 5, 2018.
- **Dr. Namit Ranjan**, *Department of Physical Biochemistry, Max Planck Institute for Biophysical Chemistry*, delivered a talk on “**RNA Epitranscriptome in Translation Regulation**”. April 2, 2018.
- **Dr. Debasis Dash**, *Senior Principal Scientist, Informatics and Big Data, CSIR-IGIB*, delivered a talk on “**An integrative proteogenomics approach to unravel human proteoforms.**” April 13, 2018.
- **Dr. Ramkumar Sambasivan**, *Institute for Stem Cell Biology and Regenerative Medicine, Bengaluru*, delivered a talk on , “**Recapitulation of developmental cues to guide pluripotent stem cell differentiation into skeletal muscles.**” April 17, 2018.





**the pioneer**  
 'Science career:  
 Challenging,  
 equally rewarding'



**Interaction with Nobel laureate**

**el Prize winner 'academic research'**  
 'Basic research key to scientific advances'

**THE NEW INDIAN EXPRESS**

**EU delegation visits ILS for R&D collaboration**

**EU delegates visit ILS for R&D collaboration**  
 Institute on cancer biology, infectious diseases and plant and environmental biotechnology

**CM inaugurates Stakeholder Empowerment Centre of ILS**

**Stakeholder Empowerment Centre of ILS**  
 The centre is established with an objective of providing a platform for engaging research and scientific communities for identifying priority areas for research focus

**the pioneer**

**'Scientific, tech advances must reach needy'**



**for immune-genetic profiling of tribal population of Odisha,**

**ILS gets research from minister**

**OUR CORRESPONDENT**

**Bhubaneswar:** Finance minister Sushil Biswas Behera on Sunday said that science and technology interventions have made significant contribution in human health, agriculture and environment management.

Releasing the annual report of the Institute of Life Sciences (ILS) on its 27th Foundation Day, Behera said: "It is important that scientists and researchers communicate to the society effectively about the progress and application of technology in day to day life."

He complimented the ILS for carrying out "high-quality and outstanding research" in cancer biology, infectious diseases, plant and environmental biotechnology.

Utkal University vice-chancellor S.M. Pattnaik said: "Students and teachers of our university will be greatly benefited by the exposure to the cutting-edge biotechnology re-

**Horizon 2020: EU keen on collaboration with Odisha**

**The EU delegates also visited the Institute of Life Sciences and had interaction with the facilities for collaborative advanced research in the area of biotechnology, health sciences and environmental issues.**

**ILS Bhubaneswar cro: 28th year successfully**

**Aims to discover drugs, enhance pulvis productivity**



**for immune-genetic profiling of tribal population of Odisha,**

**ILS Bhubaneswar cro: 28th year successfully**



**for immune-genetic profiling of tribal population of Odisha,**

**Publications**

- Panda AC and Gorospe M. Detection and Analysis of Circular RNAs by RT-PCR. Bio- protocol. 20; 8(6): e2775. March 2018.
- Panda AC, Dudekula DB, Abdelmohsen K, Gorospe M. Analysis of Circular RNAs Using the Web Tool CircInteractome. Methods in Molecular Biology, vol 1724; January 2018.
- Prabla Kumari, Jhasketan Badhai and Subrata K. Das. Draft genome sequence of Marinomonas fungiae strain AN44T (JCM 18476T) isolated from the coral Fungia echinata from Andaman Sea. Genome Announcements. 6(10): e00112-18. doi: 10.1128/genomeA.00112-18
- Chinmayee Mohapatra, Manas Kumar Jagdev, Dileep Vasudevan.. Arabidopsis ClpD N-terminal domain is highly divergent from ClpC1. XXIV IUCr Congress Abstract. Acta Crystallographica A 73 A2, C246. Dec 2017.
- Dileep Vasudevan, Manas Kumar Jagdev, Chinmayee Mohapatra. Structural basis of mycobacterial inhibition by natural products targeting ClpC1. XXIV IUCr Congress Abstract. Acta Crystallographica A 73 A2, C228. Dec 2017
- Kanchan Kumari, Sunita Keshari, Debomita Sengupta, Surendra C. Sabat and Sandip K. Mishra. Transcriptome analysis of genes associated with breast cancer cell motility in response to Artemisinin treatment, BMC Cancer (in press).
- Kanchan Kumari, Biswajit Das, Amit Adhya, Sanjib Chaudhary, Shantibhusan Senapati, Sandip K. Mishra. Nicotine associated breast cancer in smokers is mediated through high level of EZH2 expression which can be reversed by methyltransferase inhibitor DZNepA. Cell Death & Disease (in press).
- M.G.Tardajos, G.Cama, M.Dash, L.Misseeuw, T.Gheysens, C. Gorzelanny, T.Coenye, P.Dubruel, Chitosan functionalized poly-ε-caprolactone electrospun fibers and 3D printed scaffolds as antibacterial materials for tissue engineering applications, Carbohydrate Polymers, 191, 127-13. 2018.
- OChristiaens, M.G.Tardajos, Z. Martinez, M. Dash, P.Dubruel and G. Smaggha, Increased RNAi efficacy in Spodoptera exigua via the formulation of dsRNA with guanlylated polymers, Frontiers in Physiology, 2018, doi: 10.3389/fphys.2018.00316.
- George S, D Manoharan, J Li, M Britton, A Parida (2017) Drought and salt stress in *Chrysopogon zizanioides* leads to common and specific transcriptomic responses and may affect essential oil composition and benzyloquinoline alkaloids metabolism. Current Plant Biology 11: 12-22



## Scholars Day Out!

Absconding from the tedious regime of a researcher, the trip was a pleasant escapade to nature's bounty. A troop of more than 100 students along with faculties and their families left for the highly anticipated excursion to **Simlipal National Park** and **Anshupa Lake**. The outing was switched on which made the scholars and faculties sing along, from highways to rugged roads. In spite of the journey being tiresome, the zeal of the scholars remained incomparable. The trip was a complete blend of music, dance, masti, campfire and thrill.

## Sports Prize Distribution



Dr. Ajay Parida, Director, ILS, gave away the trophies to the winners. Scholars and faculties wholeheartedly participated in the indoor and outdoor sports. As said by Heywood Brown "*Sports do not build character. They reveal it.*"

## Ph.D Awarded

- **Dr. Tilothama Bhotra.** Genetic analysis of SXT-related element in *Vibrio* species isolated from coral samples. (Supervisor - Dr. D.V.Singh). 2017
- **Dr. Kunwar Digvijay Narayan.** Characterization of SOX genes from novel thiosulfate oxidising bacteria isolated from hot spring sediments. (Supervisor - Dr.S.K.Das). 2017
- **Dr. S. Suresh.** Modeling and structural studies of DNA Polymerases from pathogenic Yeast (*Candida albicans*): a computational approach. (Supervisor - Dr. A. Dixit). 2017
- **Dr. Shyan Sarkar.** Characterization of Transcriptional promoters from pararetroviruses and their interactions with transcription factor/s. (Supervisor - Dr. N. Dey ). 2017
- **Dr. Shantanu Majhi.** Restoring Cell death in chemoresistant oral squamous cell carcinomas (OSCC). (Supervisor - Dr. R. Dash). 2018
- **Dr. Sumeet Jai.** Investigation of the role of bacterial infection in prostate cancer progression. (Supervisor - Dr. S. Senapati). 2018
- **Dr. Sujit Suklabaidya.** Identification of novel drugs against desmoplastic pancreatic tumor. (Supervisor - Dr. S. Senapati). 2018
- **Dr. Rashmi Ray.** Autotaxin--Lysophosphatidic acid regulation in cellular differentiation and immune system. (Supervisor - Dr. V. Rai). 2018
- **Dr. Ashoka Chary.** Understanding the role of MinD ATPase and its interactions with other cell division proteins on MinCD oscillation in *E. coli*. (Supervisor - Dr. T.K.Beuria). 2018

## Cricket

The Team celebrated its win.



## Rangoli

When the artistic side of scholars come out.

## Holi

The colours of Holi unfurled all around the campus.



**Sh. T. Radheshyam, Hon'ble Minister of Education, Government of Manipur** visited ILS and interacted with the staffs and students. **January 17, 2018**



**Editors**



Shaheerah Khan



Priya Singh



Gargee Bhattacharya

**Advisory Committee**

- Dr. Sunil K. Raghav
- Dr. Anshuman Dixit
- Dr. Rajeeb Swain
- Dr. Tushar K. Beuria

## Upcoming Events

- Consultation on Infectious Disease. May 9-10, 2018.
- Technology Day . May 11, 2018.
- Governing body meet of ILS. May 18, 2018.
- Inauguration of Hostel and Guest House Complex, Campus 2, ILS. May 18, 2018.