

Dr. Bimalendu B. Nath

Emeritus Professor

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Research Field:

Chromosomal Genetics, Cellular & Organismal Stress biology

Present & Past Positions held:

- **Head, Department of Zoology, S.P Pune University (July 2012 – July 2015)**
 - **Emeritus Professor, Dept. of Zoology, S.P. Pune University (February2020- present)**
 - **Senior Professor, Dept. of Zoology, S.P Pune University (December2019 – January2020)**
 - **Professor, Dept of Zoology, University of Pune (January 2009 – December 2020)**
 - **Associate Professor (Reader), Dept. of Zoology, University of Pune (2003-2009)**
 - **Assistant Professor (Lecturer), Dept. of Zoology, University of Pune (1992-2003)**
 - **Coordinator, UGC-CAS-III, Department of Zoology, SPPU (April 2016- January2020)**
 - **Rector, Gents Hostel, S.P.Pune University [2001-2012]**
 - **Research Associate, Molecular Biology Unit, Institute of Medical Sciences, Banaras Hindu University, Varanasi (1989-1992)**
- **Visiting Faculty at**
- (i) Department of Biotechnology, S.P.Pune Univesity, Pune (1993-2016)
 - (ii) Institute of Bioinformatics & Biotechnology, S.P. Pune University, Pune (2004-present)
- **National mentor at Homi Bhabha Centre for the Science Education, TIFR Mumbai for the National Initiative for the Undergraduate Studies (NIUS) programme (2007 - present)**

Academic Training:

- **Graduation (B.Sc.)** : Guwahati University, Assam 1979 with First Class Honours
- **Post Graduation (M.Sc.)** Visva-Bharati Central University, Santiniketan, W.B.India in 1981 in Life Science (Physiology & Biochemistry as specialization) with First Class
- **Ph.D.** (Zoology) from Banaras Hindu University, Varanasi India in 1988
[Title of Thesis : “Studies on Gene expression : The heat shock response in *Chironomus & Anopheles*”
Mentor :Prof. S.C. Lakhotia, FNA, FASc.FNASc]
- **Post-Doctoral** : Research Associate at Molecular Biology Unit of Institute of Medical Sciences BHU , Varanasi, India (1988- Dec.1991).

Scholarships/Fellowships / Professional attainments:

- **National Scholarship**, Board of Education, Govt. of Assam, India (1975-77)
- **National Scholarship**, Visva-Bharati University, Santiniketan, West Bengal, India (1979-81).
- Trainee at Malaria Research Center, National Inst. of Comm. Disease, Delhi (1986) India
- Trainee at National Institute of Immunology, New Delhi (1990)
- **Best Oral Presentation award by Young Scientist**, Indian Society of Cell Biologists (1986).
- **Qualified at UGC-CSIR NET** (1992)
- Received Department of Science & Technology (**DST, Govt. of India**) **Young Scientist Research Grant (1995-98)**
- **Elected as Executive Committee member** of Indian Society of Cell Biologists for the years 2001-2003, 2009-2011, 2019-21.
- **Visiting Faculty at IISER**, Pune [January 2007 to January 2008]
- **Member, National Academic Committee** for the 19th International Biology Olympiad. (2008).
- **Chairman: Institutional Animal Ethics Committee**, Pune University (April 2014-15)
- **Member, Governing council:** Society for Radiation Research (2015 -- 2018)
- **Resource Person “Obama-Singh (US-India) initiative supported research project on inclusive University: Diversity, Equity and Excellence for the 21st Century”** at Pune University (Oct 2014-16)
- **Expert for monitoring Biotech Industries Training Programme BCIL, DBT** [2013-2014]

- **Member of National committee of (CSIR-HRDG) ‘Animal Sciences & Biotechnology Research Committee [2013- 2015]**
- **Member, Core committee of Centre for Sensor Studies, Pune University (2012-- present)**
- **Elected, Executive member of the Association of Teachers in Biological Sciences,**
 - c/o Homi Bhabha Centre for Science Education, Mumbai (2009-2012, 2013-2015)
- ***Elected as the Vice President* of the Association of Teachers in Biological Sciences (2016-19)**
[URL: <http://www.atbs.in/executive-council-1.html>]
- ***Editor, BIOME* [BIOlogy Education MEssenger] Published by Association of Teachers of Biological Sciences, [URL: <http://www.atbs.in/newsletter.html>]**
- ***Member, Editorial board:* Journal of Radiation & Cancer Research, published by SRR & Wolters Kluwer Publishers [URL: <http://www.journalrcr.org/editorialboard.asp>]**
- ***Elected as the Vice President*, Indian Society of Cell Biologists, for the term 2017-19.**
[URL: <http://www.iscb.org.in/homepage.htm>]
- ***Member, Board of studies in Zoology*, S.P. Pune University (2018- continuing) Pune India, BoS in Zoology at Sophia college (autonomous) Mumbai University, Mumbai India, BoS in Zoology at Fergusson college (autonomous), Pune, India.**
- ***Member, Advisory Committee of Centre for Publication Ethics*, S.P. Pune University, Pune India (2018- continuing)**
- **Member, संशोधन मंडल, Centre for Innovation, Incubation & Extension. SPPU (continuing)**
- **Member, Monitoring Committee of SPPU-PDF Programme, S.P. Pune University, Pune (continuing)**

Membership / Affiliation:

- **Life member, Indian Society of Cell Biologists (India)**
- **Life Member, Indian Society of Developmental Biologists (India)**
- **Founder Member, Microscope Academy of India, Mumbai (India)**
- **Life member & Founder member, Association of Teachers in Biological Sciences (India)**
- **Executive Committee member, Society for Radiation Research (India)**
- **Member, Society for Experimental Biology (U.K.)**
- **Member, Cell Stress Society International (USA)**
- **Member, The Japan Mendel Society (Japan)**

Mentorship

- **Undergraduate:** 10 students [4 students from National Initiative for Undergraduate Studies (NIUS) programme at HomiBhabha Centre for Science Education (TIFR), Mumbai.; 4 from Institute of Bioinformatics & Biotechnology, Pune University]
- **Post Graduate:** [~90 students from M.Sc. Zoology & M.Sc. Bioinformatics & 5-yrs Integrated MSc IBB since 1992 at the S.P. Pune University, Pune, India]
- **M.Phil** in Zoology: **3** [co-guided M.Phil in Biophysics **1**]
- **Doctoral** : [PhD in Zoology & in Biotechnology:**10** (6 awarded, 4 ongoing) [Total co-guided PhD in Zoology :**2** (1 awarded, 1 ongoing)]
- **Post-Doctoral** :**1** (co-mentor)

Grants and sponsored research projects:

- UGC sponsored Project (1993-1995) (as Co- P.I.)
- DST sponsored Project (Govt. of India, Department of Science & Technology Young Scientist Research Project (1995-1998) (as P.I.).
- UoP Department of Zoology supported project (1998-1999) (as P.I.).
- Collaborative research project supported by Agharkar Research Institute, Pune with Dr. D.G. Naik, A.R.I. (as Co-P.I.).
- I.C.M.R. sponsored project (as Co-P.I.)(2005-07)
- KVIC-S&T project (2004-05) (as P.I.).
- UoP-BARC collaborative research project (PhD programme) (2004-09) (as P.I.& PhD mentor).
- UoP research project (2006-08) (as P.I.).
- ISRO-UoP funded research project (2007-2010) (as P.I.).
- KVIC-Science &Technology approved research project (2009-2013) (as P.I.).
- UoP-BCUD funded research project (2011-2013) (as P.I.).
- UoP-BCUD project (2013-15) (as P.I.).
- UoP-BARC collaborative research project (PhD programme) (2012-17) (as P.I.& PhD mentor).
- CSIR sponsored research project (2013-16) (as P.I.).
- UoP-BCUD project (2015-17) (as P.I.).
- UPE-UoP project (2013-18) (as Co-PI)
- UGC 12th Plan sponsored Innovative research scheme (2015-17) (as P.I.).
- Indo-Israel joint Project with University of Haifa, Israel (2018-21) (as P.I.)
- RUSA phase II at SPPU under the Capacity building programme in Biodiversity Assessment of Northern Western Ghat of Maharashtra (2019- 2023) (as P.I.)

Academic Extension activities outside India

- Jury Leader of the Indian delegation team in the International Biology Olympiad held at **Argentina** in July, 2006.
- Invited Plenary talk at Nankai University, **China** in July 2009
- Invited talk at Norwegian University of Science & Technology, Trondheim, **Norway** July 2011
- **Visiting Scientist**, IMT, Marburg, **Germany** (November 2013)
- Invited talk at Charles University, Prague, **Czech Republic** (August 2014)
- Invited talk at MUSE, Trento, **Italy** (July 2017)
- **Visiting Scientist**, Freie Universitat, Berlin, **Germany** (August-September 2017)
- Invited talk at the Annual Meeting of the Society for Experimental Biology (UK), Seville, **Spain**. (July 2019)
- **Visiting Scientist**, University of Haifa, **Israel** (March -April 2020 ---Postponed due to COVID-19)

Convenor / Course Director of Symposia/ Workshops

- **Organising Secretary**, XXVII All India Cell Biology Conference & International Symposium Jan 7-10, 2004, University of Pune, Pune.
- **Co-Convener, Workshop** on “Dealing with evolution in the classroom: Evolutionary perspectives in modern biological teaching & research” 1-2nd April, 2011 at Homi Bhabha Center for Science Education (TIFR) Mumbai, India.
- **Convenor, National Symposium** “Recent Trends in Biology” 2013, Zool Dept. UoP.
- **Course Director**, Workshop on Microscopy for Life Sciences, Jan 2012, Venture Center NCL Innovation Park Pune [URL_ http://www.venturecenter.co.in/workshops/pdfs/Workshop_Microscopy-2.pdf]
- **Course Director**, Workshop on Microscopy: Seeing the unseen, Sept.2013, Venture Center NCL Innovation Park Pune [URL : http://www.venturecenter.co.in/workshops/pdfs/Workshop_Microscopy_4-09-13.pdf]
- **Convenor, National Symposium**: Recent Trends in Biology 2014, Zool Dept. UoP.
- **Convenor, National Symposium**: Recent Trends in Biology 2015, Zool Dept. UoP.
- **Course Director**, Microscopy Workshop Modern College Pune, 20th-21st Feb 2016.
- **Course Director**, Microscopy Workshop Modern College Pune, 21st-22nd Oct 2016.
- **Course Director**, Hands-on Workshop on Microscopy, Venture Center, NCL Innovation Park Pune URL: <http://www.venturecenter.co.in/workshops/pdfs/6-9-June-2018-Workshop-on-Microscopy-outline.pdf>

- **Organising Secretary**, VII International Conference on Molecular Signaling (ICMS 2019) Jan 23-25, 2019, S.P. Pune University & National Center for Cell Sciences, Pune [URL : <https://events.unipune.ac.in/sites/zoology2018/gen-info.html>]

INVITATION FROM UNIVERSITIES FOR EXAMINATION OF PhD THESIS

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| <ul style="list-style-type: none"> • Banaras Hindu University (BHU) • Jawaharlal Nehru University (JNU) • University of Delhi • IGNOU • Vishva Bharati Central University • Assam University • University of Calcutta • Patna University • University of Kerala • University of Kalyani • University of Mumbai • University of Goa • Mangalore University | <ul style="list-style-type: none"> • Kuvempu University • Coimbatore University • University of Burdwan • Rani Durgavati Vishwavidyalaya • Barkatullah University • Bihar University • NMIMS University • Indira Gandhi Tribal Central University • University of Mysore • CSIR-IITR • Kalyani University |
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SERVICES AS EXPERT / RESOURCE PERSON

- Resource person **Union Public Service Commission (UPSC)**. New Delhi [from 2001-2008 and from 2019-till date]
- National Biology Olympiad (**NBO**): Resource person [2004 till date]
- **Jury member** at the **International Biology Olympiad held at Cordoba, Argentina** in July, 2006 nominated by **MHRD, Govt. of India**.
- Expert for monitoring Biotech Industries Training Programme **BCIL, DBT, Govt. of India** [2013-2014]
- Member of National committee of (**CSIR-HRDG, Govt. of India**) ‘Animal Sciences & Biotechnology Research Committee) [2013- 2015]
- Reviewer of proposals submitted under **BIG** (Biotechnology Ignition Grant Scheme) is one of the leading programmes of **BIRAC/BIG, Department of Biotechnology, Govt. of India** [2015- till date]
- **Core member of the Expert Committee of UGC** for Reviewing Major Research Proposals submitted under Aquaculture/ Zoology [2018- till date] .

Award :

- Received Best Teacher Award (**Joag Award 2014**) of S.P. Pune University
- Received Annual special Teacher's award (**2015**) for prolonged & dedicated services in the field of Education from U.B. Sangh, Pune chapter.

Patent :

- **Trehalosometer** (An apparatus for detection of Trehalose and a method of use thereof)—
Inventors : Dr A. Shaligram, **Dr B.B.Nath**, Dr Leena Thorat, Mr R. Sarje (Application # 201921034960 dt 30.08.2019) [Patent filed through S.P. Pune University, Pune, India]

Consultancy :

- Survey of Ecological parameters, Flora and Fauna at proposed power plant site (Dondaicha, Dhule district, Maharashtra) of MAHAGENCO, Govt. of Maharashtra, India [Team of UPE Biodiversity PIs 2016]

International Collaboration & Ongoing (funded) Research

- India-Israel Joint Research Programme (4th Cycle 2018-2021) funded by Israel Science Foundation and UGC-India on “Role of chironomid midge microbiome versus its intrinsic physiological factors in maintaining homeostasis under environmental stress conditions” [Principal Investigators : **B.B.Nath** (S.P. Pune University, Pune, India) and **Malka Halpern (University of Haifa, Israel)**]

Peer Reviewer for Research Journals

Scientific Reports- Nature Publ Group, Acta Tropica, Journal of Genetics, Current Science, Chemosphere, International Journal of Radiation Biology, Journal of Radiation and Cancer Research, Indian Journal of Experimental Biology, Journal of Limnology, Journal of Essential oil-bearing Plants, Environmental Science & Pollution Research, Journal of Biomolecular Structure & Dynamics, Journal of Thermal Biology, European Journal of Environmental Sciences, Frontiers in Physiology, Environmental Science & Pollution Research, Free Radical Research, Journal of Bioscience etc.

Major Publications

1. Laviad-Shitrit S., Sharaby Y, Sela R., L. Thorat, **B.B. Nath**, M. Halpern (2021) Copper and chromium exposure affect chironomid larval microbiota composition. *SCIENCE OF THE TOTAL ENVIRONMENT* (in press) [Publisher: ELSEVIER]
2. Pratibha Bomble and **Bimalendu B. Nath** (2021) RONS generation and Redox homeostasis in *Chironomus ramosus* larvae under singular versus combinatorial stress. (MS communicated, under review)
3. Kanchan Phatak, P.K. Khanna and **B.B.Nath** (2021) Reversal of the leucistic phenotype in *Drosophila* when silver nanoparticles are in oxide form. (MS communicated, under review)
4. Thorat L, Emmanuel J., Nisal A., Shukla E., Ravikumar A., **Nath B.B.** (2020) Structural and physiological analysis of underwater silk from housing net composites of a tropical Chironomid midge. *INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES*. 163:934-942 [Publisher: ELSEVIER]
5. Laviad-Shitrit S., Sela R., Thorat L., Sharaby Y., Izhaki I., **Nath B.B.**, Halpern M. (2020) Identification of Chironomid species as natural reservoirs of toxigenic *Vibrio cholerae* strains with pandemic potential. *PLoS Negl. TROPICAL DISEASE* 14(12):E0008959 [Publisher: PLOS]
6. Bomble P.N. and **Nath B.B.** (2019) Comparative response profile of *Chironomus* and *Drosophila* showing differential threshold limit of lethality to environmentally induced desiccation, heat and starvation stress during singular vs. multiple exposure. *EUROPEAN JOURNAL OF ENVIRONMENTAL SCIENCE* [Publisher: Charles University, Karolina Press,] 9: 41-46.
7. Vartak R., Ronad A., **Nath B.B.** (2019) Teaching the vertebrate skeletal systems with cast and models avoiding animal dissection. *ASIAN JOURNAL OF BIOLOGY EDUCATION* 11: 14-18 [Publisher: Asian Association for Biology Education, Japan <http://www.aabe.sakura.ne.jp>]
8. **Nath B.B.** (2019) Dobzhansky and Evolutionary Cytogenetics: Pioneering Evolutionary studies with Chromosomes. In: "From so simple a beginning: The expansion of evolutionary thoughts." Y.N.C. Vidya (ed). Indian Academy of Sciences Publication, Bangalore, India. [Reproduced from *RESONANCE* (2000) 5: 61-65. SPRINGER]
9. Gaikwad R, Gaikwad S, Shouche Y, **Nath B B** (2019) Phylogenetic variation found in Indian honey bee species *Apis cerana* Fabr. of North Western Ghats of Maharashtra, India. *INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY* 57: 55-58. [Publisher: NISCAIR, India]

10. **B.B Nath** (2018) Extracellular hemoglobin and environmental stress tolerance in Chironomus larvae. *JOURNAL OF LIMNOLOGY* 77 (sI): 104-112.[Publisher: PAGEPress Science Publ.CNR-Water Res.Institute, Italy (Scopus ID29608)]
11. E. Shukla, L. Thorat, A.D. Bendre, S. Jadhav, J.K. Pal, **B.B.Nath**, S.M. Gaikwad (2018) Cloning and characterization of trehalose: a conserved glycosidase from oriental midge, *Chironomus ramosus*. *3BIOTECH*. 8: 352 (<https://doi.org/10.1002/s13205-018-1376-y>)[Publisher: SPRINGER]
12. LeenaJ.Thorat, **Bimalendu B. Nath** (2018) Insects with survival kits for desiccation tolerance under extreme water deficits. *FRONTIERS IN PHYSIOLOGY* 9:1843. doi: 10.3389/fphys.2018.01843 [Publisher:FRONTIERS Publ. (Scopus ID 21100215107)]
13. LeenaThorat and **B B Nath** (2018) Aquatic silk protein in chironomid midges: a review. *JOURNAL OF LIMNOLOGY* 77 (sI) : 95-103. [Publisher: PAGEPress Science Publ.CNR-Water Res.Institute, Italy (Scopus ID29608)]
14. Thorat L.J.,Oulkar D., Banerjee K, Gaikwad S., **Nath B.B.** (2017) High throughput mass spectrometry analysis revealed a role for glucosamine in potentiating recovery following desiccation stress in Chironomus. *SCEINTIFIC REPORTS* 7:3659 DOI 10.1038/s41598-017-03572-5 [Publisher: NATURE Publishing Group]
15. Ronad A and **Nath B.B.** (2017) Design and fabrication of a hypoxia-inducing chamber for simulation studies in environmental biomonitoring using Chironomus larvae. *RESEARCH & REVIEWS: JOURNAL ZOOLOGICAL SCIENCES* 5:45-51. [Publisher: RESEARCH & REVIEW Publ.]
16. Phatak K.A.,Khanna P.K., **Nath B.B.** (2016) Particle size-independent induction of leucism in *Drosophila melanogaster* by silver: nano vs micro. *METALLOMICS* 8:1243-1254. [Publisher: Royal Society of Chemistry Publ.]
17. ThoratLeena and **Nath B.B.** (2016) Quantitative assessment of larval desiccation tolerance in oriental *Chironomus* species. *CURRENT SCIENCE* 111: 1448-1449. [Publisher: Indian Academy of Science Publ.]
18. Shukla E., Thorat L., Bhavnani V., Bendre A.D., Pal J.K., **Nath B.B.**, Gaikwad S.M. (2016) Molecular cloning and *in silico* studies of physiologically significant trehalose from *Drosophila melanogaster*. *INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES* : 92: 282-292 Publisher: ELSEVIER.]
19. Thorat L., Oulkar D., Banerjee K., **Nath B.B.** (2016) Desiccation stress induces developmental heterochrony in *Drosophila melanogaster*. *JOURNAL OF BIOSCIENCES* 41:331-339. [Publisher:SPRINGER]

20. Gaikwad P.S., Panicker L., Mohole M., Sawant S., Mukhopadhyaya R, **Nath B.B.** (2016) Differential sensitivity of *Chironomus* and human hemoglobin to gamma radiation. *BIOCHEMICAL & BIOPHYSICAL RESEARCH COMMUNICATIONS* 476: 371-378. [Publisher: ELSEVIER]
21. Ghosh G, Gaikwad P.S., Panicker L., **Nath B.B.**, Mukhopadhyaya R. (2016) Unfolding and inactivation of proteins by counterions in protein-nanoparticles interaction. *COLLOIDS AND SURFACES B: BIOINTERFACES* 145: 194-200. [Publisher: ELSEVIER]
22. LeenaThorat, Mani,K-P, Thangaraj P., S. Chatterjee and **B.B.Nath** (2016) Downregulation of dTPS1 in *Drosophila melanogaster* larvae confirms involvement of trehalose in redox regulation following desiccation. *CELL STRESS & CHAPERONES* 21: 285-294. [Publisher: SPRINGER.]
23. Kumar A, Ali Manjoor, Ningthoujam R.S., Gaikwad P., Kumar M., **Nath B.B.**, Pandey B.N. (2016) The interaction of Actinide and Lanthanide ions with human hemoglobin and its relevance to human and environmental toxicology. *JOURNAL OF HAZARDOUS MATERIALS* 307: 281-293. [Publisher: ELSEVIER]
24. P. Gaikwad, **B.B.Nath**, R,Mukhopadhyaya (2016) Fate of gamma radiation exposure on radio-tolerant insect *Chironomus ramosus*. *JOURNAL OF RADIATION & CANCER RESEARCH* 7 (1):37 [Publisher: Wolters-Kluwer (Medknow)]
25. M. Ali, A. Kumar, B.N. Pandey, P. Gaikwad, **B.B.Nath** (2016) Biochemical interaction of thorium and uranium with hemoglobin: effect on oxygen-HB binding and its correlation with survival of *Chironomus* larvae. *JOURNAL OF RADIATION & CANCER RESEARCH* 7 (1):28 [Publisher: Wolters-Kluwer (Medknow)]
26. **Nath B.B.** (2015) Cytotaxonomy for the assessment of faunal diversity of *Drosophila* and *Chironomus* (Insecta: Diptera) *Proceedings of the seminar on 'Importance of Taxonomy in conservation of faunal diversity'* Venkataraman K. et al (eds) pp 9-11. Published by ENVIS, Zoological Survey of India. Kolkata, Government of India.
27. E. Shukla, L.J. Thorat, **B.B.Nath**, S.M. Gaikwad (2015) Insect trehalase: Physiological significance and potential applications. *GLYCOBIOLOGY* 25:357-367. [Publisher: OXFORD ACADEMIC Publ.]
28. Datkhile K.D., Gaikwad P., Mukhopadhyaya R., Ghaskadbi S.S. and **Nath B.B.** (2015) *Chironomus ramosus* larvae exhibit DNA damage control in response to gamma radiation. *INTERNATIONAL JOURNAL OF RADIATION BIOLOGY*91: 742-748. [Publisher: TAYLOR & FRANCIS Publ.]

29. **Nath B.B.** and Gharpure D.C. (2015) A novel computational approach of image analysis to quantify behavioural response to heat shock in *Chironomus ramosus* larvae. *EUROPEAN JOURNAL OF ENVIRONMENTAL SCIENCE*. 5: 57-61 [Publisher: Karolina Press]
30. Thorat Leena and **Nath B.B.** (2015) Tolerance to desiccation stress in *Chironomus ramosus* through plasticity in homeostatic control. *EUROPEAN JOURNAL OF ENVIRONMENTAL SCIENCE*. 5: 86 – 91 [Publisher: Karolina Press]
31. L.J. Thorat and **B.B.Nath** (2013) Chironomid midges: a forgotten model of developmental biology research *ACTA ZOOLOGICA* 94: 249–253. [Publisher: WILEY-BLACKWELL Publ.]
32. Thorat L.J., Gaikwad S.M. and **Nath B.B.** (2012) Trehalose as an indicator of desiccation stress in *Drosophila melanogaster* larvae: A potential marker of anhydrobiosis. *BIOCHEMICAL & BIOPHYSICAL RESEARCH COMMUNICATIONS* 419:638-642. [Publisher: ELSEVIER]
33. Datkhile K.D., R. Mukhopadhyaya, Dongre T.K. and **Nath B.B.** (2011) Hsp70 expression in *Chironomus ramosus* exposed to gamma radiation. *INTERNATIONAL JOURNAL OF RADIATION BIOLOGY* 87: 213-221. [Publisher: TAYLOR & FRANCIS Publ.]
34. Mukhopadhyaya R. and **Nath B.B.** (2011) Chironomid midges : an emerging model organism for radiation stress studies. *RADIATION SCIENCE TODAY* 13: 5-7. [Publisher: INDIAN SOCIETY OF RADIATION BIOLOGY Publ.]
35. Rahul Gaikwad and **B.B.Nath** (2011) A case study of honey bee population for selected commercially important traits in Uttaranchal forest. *Proceedings of National Conference on Forest for the Future of Man*. pp 251-255. Published by Association of Teachers in Biological Sciences ISBN no. 978-81-922163-0-0
36. **Nath B.B.** and Babrekar A.A. (2011) Implications of hypoxic stress in *Chironomus ramosus* larvae with reference to iron. In : “Contemporary Chironomid Studies” Wang Xinhua & Wei Liu (editors), Nankai University Press, Tianjen, China: pp 334-345 [ISBN : 978-7-310-03714-8]
37. Thorat L. and **Nath B.B.**(2010) Trends in Chironomid Research. *JOURNAL OF CHIRONOMIDAE RESEARCH: CHIRONOMUS* 23: 34-35. [Publisher: NTTU UNIVERISTY MUSEUM Publ.]
38. LeenaThorat ,**B.B.Nath** (2010) Effect of water hyacinth *Eichhorniacrassipes* root extracts on midge *Chironomus ramosus* larva : a preliminary note. *PHYSIOLOGICAL ENTOMOLOGY (UK)* 35: 391-393. [Publisher: WILEY.]
39. **B.B.Nath**, L.Thorat, A.A. Babrekar, K. Datkhile, Ghadge A., R. Gaikwad, D.C.Meshram (2009) Development of a new design of an insectary model for rearing and environmental assessment studies on chironomid midges. *JOURNAL OF CHIRONOMIDAE RESEARCH: CHIRONOMUS* 22: 11-13. [Publisher: NTTU UNIVERISTY MUSEUM Publ.]

40. Datkhile K.D., Mukhopadhyaya R., Dongre T.K., **Nath B.B.** (2009) Increased level of superoxide dismutase (SOD) activity in larvae of *Chironomus ramosus* (Diptera ; Chironomidae) subjected to ionizing radiation. *COMPARATIVE BIOCHEMISTRY & PHYSIOLOGY* 149: 500-506. [Publisher: ELSEVIER]
41. Datkhile K.D., Dongre T.K., Mukhopadhyaya R., **Nath B.B.** (2009) Gamma radiation tolerance of a tropical species of midge, *Chironomus ramosus* Chaudhuri (Diptera: Chironomidae) *INTERNATIONAL JOURNAL OF RADIATION BIOLOGY* 85: 1-9. [Publisher: TAYLOR & FRANCIS Publ.]
42. Mahapatra S.K., Banarjee I., Barhai P.K., Babrekar A.A., **Nath B.B.**, Bhoraskar V.N. (2007) 20keV energy electron induced breaks in chromatin materials for dosimetry and radiotherapy applications. *JOURNAL OF MEDICAL PHYSICS*. 32 Suppl O-29. [Publisher: ASSOCIATION OF MEDICAL PHYSICISTS OF INDIA Publ.]
43. Kundu S., Kulkarni G.R. & **Nath B.B.** (2007) Differential sensitivity of polytene chromosomes to Nd: YAG laser *INTERNATIONAL JOURNAL OF BIOL. & CHEM. SCIENCES* 1: 1-6. [Publisher: INTERNATIONAL FORMULAE GROUP Publ.]
44. Naik D.G., Babrekar A.A. and **Nath B.B.** (2006) Pheromone-like hydrocarbon in the cuticle of aquatic *Chironomus* larva. *CHEMISTRY & ECOLOGY* 22: 501-508. [Publisher: TAYLOR & FRANCIS Publ.]
45. **Nath B.B.**, Babrekar A.A. & Parthasarathy B. (2005) Assessment of cell viability in intact glandular tissue using dye-exclusion and colorimetric assays. *CYTOTECHNOLOGY* 49: 59-65. [Publisher: SPRINGER]
46. Babrekar, A.A., Kulkarni, G.R., **Nath B.B.** & Vidyasagar, P.B. (2004) Extracellular electrical activity from the photoreceptors of midge *JOURNAL OF BIOSCIENCES* 29:349-353. [Publisher: SPRINGER]
47. Hardikar A.A. & **Nath B.B.** (2001) Chromosomal polymorphism is associated with nematode parasitism in natural population of tropical midge. *CHROMOSOMA* 110: 58-64. [Publisher: SPRINGER]
48. **Nath B.B.** & Raut Neelam (1998) Behavioural studies on 'tube-recognition ability' of *Chironomus* larvae. *INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY* 36: 826-828. [Publisher: NISCAIR, India]
49. **Nath B.B.** & Godbole N.N. (1998) Technique for mass rearing of Indian *Chironomus* species. *STUDIA DIPTEROLOGIA* (). 5(2) : 187-193. [Publisher: AMPYX-VERLAG Germany Publ.]
50. **Nath B.B.** & Godbole N.N. (1997) Chromosomal characterization of a tropical midge. *CYTOBIOS* 91: 25-31. [Publisher: UNIVERSITY OF CAMBRIDGE Publ.]

51. **Nath B.B.** &Lakhotia S.C. (1991) Search for a *Drosophila* 93D-like locus in *Chironomus* and *Anopheles*. *CYTOBIOS* 65: 7-13. [Publisher: UNIVERSITY OF CAMBRIDGE Publ.]
52. **Nath B.B.**&Lakhotia S.C. (1989) Heat shock response in ovarian nurse cells of *Anopheles stephensi*. *JOURNAL OF BIOSCIENCES* 14(2): 143-152. [Publisher: SPRINGER.]
53. **Nath B.B.** &Lakhotia S.C. (1989) Heat shock response and the effect of developmental stage and tissue type on heat shock protein synthesis. *GENOME* 32: 676-686. [Publisher: CANADIAN SCIENCE PUBLISHING, NRC RESEARCH PRESS.]

Protocol of Laboratory Methodologies (Human Genetics/ Cytogenetics)

54. Raman R., Nath B.B., Swarn L (2018) G &C banding of mammalian metaphase chromosome. Pp159-164. In: LIFE SCIENCE PROTOCOL MANUAL. -Department of Biotechnology, Ministry of Science & Technology, Government of India.
55. **Nath B. B.** (2010) “Protocols on Cell Biology Experiments” :
[contributions by Dr B.B.Nath in 16 chapters, being sole authors in 3 chapters] *Published by the Indian Society for Cell Biologists [Regd.] Special issue of Cell Biology Newsletter Vol. 30, Sept. 2010* [URL : www.iscb.org.in/docs_pdf/ISCBProtocol.pdf] ISSN: 2349-8307

Articles / Reviews published in Science Educational Journal/ e-NewsLetters of scientific societies

56. **Nath B.B.** (2000) Dobzhansky and evolutionary cytogenetics. *RESONANCE* 5: 61-65. [URL : <https://www.ias.ac.in/describe/article/reso/005/10/0061-0065>] Springer.
57. **Nath B.B.** (2015) Evolution of documentation in Biology. *BIOME* 3: 5-7
(<http://www.atbs.in/newsletter.html>) [*Popular Science Article series*]
58. **Nath B.B.**(2016) Extinction stories: The legend of Martha. *BIOME* 4: 5-10
(<http://www.atbs.in/newsletter.html>) [*Popular Science Article series*]
59. **Nath B.B.** (2017) Lady Jane and Incas: The forgotten couple of a lost species of Parakeet. *BIOME* 5 : 5-7. (<http://www.atbs.in/newsletter.html>) [*Popular Science Article series*]
60. **Nath B.B.** (2018) Climate change and extinction of animals in recent years. *BIOME* 6:5-8
(<http://www.atbs.in/newsletter.html>) [*Popular Science Article series*]
61. **Nath B.B.** (2019) A history of the correction of the human chromosome number. *BIOME* 7:7-10
(<http://www.atbs.in/newsletter.html>) [*Popular Science Article series*]

BOOKS :

- 1) **Classroom Unplugged: Crossword Biology** --- Leena Thorat and Bimalendu B. Nath
[Pancha Tattva Publishers, India, (ISBN no. 978-81-929904-1-5)]

- 2) **A Biology Student's Companion to Microscopy**
 --- **Bimalendu B. Nath** and Leena Thorat (under preparation).
- 3) **Microscopy for Life Sciences**
 --- **Bimalendu B. Nath** (under preparation)

**Published information on gene sequence [at National Center for
 Biotechnology Information (NCBI) <http://www.ncbi.nlm.nih.gov>]
 Gene sequences deposited in the World Gene Bank**

- 1) **Nath BB** and Thorat LJ. *Chironomus ramosus* Pune_1_ Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: MN370037), 21-August-2019.
 [<https://www.ncbi.nlm.nih.gov/biosample/?term=Chironomus+ramosus>].
- 2) Shukla E, Thorat LJ, Jadhav S., Pal JK, **Nath BB** and Gaikwad SM. *Chironomus ramosus* trehalase mRNA, partial cds submitted to NCBI GenBank (Ref: KX857662.1), 07-February-2017. [<https://www.ncbi.nlm.nih.gov/nuccore/Kx857662.1>]
- 3) Shukla E, Thorat LJ, Bhavnani VA, Pal JK, **Nath BB** and Gaikwad SM. *Drosophila melanogaster* strain Oregon K trehalase mRNA, partial cds submitted to NCBI GenBank (Ref: KU049688), 20-April-2016. [<https://www.ncbi.nlm.nih.gov/nuccore/KU049688>]
- 4) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Nashik_1 ecotype_ Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255460), 31-May-2015 [
<https://www.ncbi.nlm.nih.gov/nuccore/KP255460>]
- 5) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Pune_1 ecotype_ Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255461), 31-May-2015
 [<https://www.ncbi.nlm.nih.gov/nuccore/KP255461>]
- 6) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Bhimashakar 1 ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255462), 31-May-2015
 [<https://www.ncbi.nlm.nih.gov/nuccore/KP255462>]
- 7) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Bhimashakar 2 ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255463), 31-May-2015
 [<https://www.ncbi.nlm.nih.gov/nuccore/KP255463>]

- 8) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Bhimashakar 3 ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255464), 31-May-2015
[<https://www.ncbi.nlm.nih.gov/nuccore/KP2554624>]
- 9) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Mahabaleshwar-2 ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255465), 31-May-2015
[<https://www.ncbi.nlm.nih.gov/nuccore/KP255465>]
- 10) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Mahabaleshwar-4 ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255466), 31-May-2015 [<https://www.ncbi.nlm.nih.gov/nuccore/KP255466>]
- 11) Gaikwad RR., **Nath BB**, Gaikwad SS, Souche YS. *Apis cerana* isolate Wai ecotype Cytochrome Oxidase subunit 1 (CO1) gene partial cds (mitochondrial) submitted to NCBI GenBank (Ref: KP255467), 31-May-2015 [<https://www.ncbi.nlm.nih.gov/nuccore/KP255467>]

PAPERS PRESENTED IN SELECTED CONFERENCES / SYMPOSIA

(Title of Abstracts)

1. **Nath B.B.** and Lakhotia S.C. (1984) Heat shock response in *Chironomus distinctus*, VII All India Cell Biology Conference, C.C.M.B., Hyderabad. India
2. **Nath B.B.** (1986) Seasonal variation in heat shock response in *Chironomus* grown under natural conditions. Xth All India Cell Biology Conference, Ahmedabad. India (***BBN won best paper presentation by Young Scientist award***)
3. **Nath B.B.** (1987) Developmental stage and Tissue specificity in the synthesis of heat shock polypeptides in *Chironomus distinctus*. XI All India Cell Biology Conference, Delhi, India
4. **Nath B.B.** (1987) Transcriptional and translational changes following heat shock in ovarian nurse cells in *Anopheles stephensi*, XI All India Cell Biology Conference, Delhi. India.
5. Lakhotia S.C., **Nath B.B.**, Burma P and Karchowdhury D (1989) Effect of pairing on the rate of ³H -uridine uptake at heat shock puff sites. XII All India Cell Biology Conference, C.C.M.B., Hyderabad, India.
6. **Nath B.B.** and Godbole N.N. (1994) Cytogenetic studies on *Chironomus ramosus* XVII All India Cell Biology Conference, Indore, India

7. **Nath B.B.**, Ghandi S. and Godbole N.N. (1995) Cold shock and heat shock responses exhibit differences in puff induction in *C. ramosus*. XVIII All India Cell Biology Conference, Lucknow, India.
8. **Nath B.B.** and Hardikar A.A. (1996) Inversion polymorphism is associated with nematode infection in a tropical midge. XIX All India Cell Biology Conference, Calcutta, (*presented by AAH and won best oral presentation award*).
9. **Nath B.B.** (1998) Heterochrony in the embryogenesis of evolutionary distant dipteran insects : *Chironomus* and *Drosophila*. XXI All India Cell Biology Conference, Bangalore, India.
10. Nair B.B., **Nath B.B.** and Godbole N.N. (1998) Effect of desiccation stress on the Balbiani Rings & other chromosomal loci of *C. ramosus*. VII All India Conference on Cytology and Genetics Gulbarga, India.
11. **Nath B.B.** (1998) Cytoembryological studies in *Chironomus ramosus*. VII All India Conference on Cytology and Genetics of Society of Cytologists and Geneticists of India, Gulbarga, India
12. **Nath B.B.** (2001) Exploration of *Chironomus* as model for behavioural studies. National Symposium on "Recent Trends in Modern Biology", Pune University, Pune, India.
13. Babrekar A.A. and **Nath B.B.** (2004) Structural and functional analysis of photoreceptor cells of *Chironomus ramosus*. XXVII All India Cell Biology Conference and International Symposium, Pune, India (*presented by AAB and won V.C. Shah best poster presentation award*) .
14. Babrekar A.A. and Nath B.B. (2004) Ontogeny of Photobehaviour : Developmental plasticity in the sensitivity of photoreceptor organs in *Chironomus ramosus*. Annual meeting of ISDB & Symposium on Development, Epigenetics & Plasticity. Bangalore, India.
15. Thomas D., Gaikwad R., Babrekar A.A. and **Nath B.B.** (2004) Analysis of selected quantitative traits and intraspecific variation in *Apismellifera* population. Annual meeting of ISDB & Symposium on Development, Epigenetics & Plasticity. Bangalore, India.
16. KunduSrikanya, **Nath B.B.**, Kulkarni G.R. (2005) Effect of laser radiation on polytene chromosome of *Chironomus ramosus*. National Symposium on Recent Trends in Molecular & Medical Biophysics. (organized by Dept. of Physics, School of Basic Medical Sciences & Indian Biophysical Society) 22nd-25th January, 2005, University of Pune, India.
17. Datkhile K., Dongre T.K., Mukhopadhyaya R. and **Nath B.B.** (2005) Preliminary studies on radiation stress responses in a primitive dipteran insect *Chironomus ramosus*. DAE-BRNS Life Science Symposium (LSS-2005) on Molecular Biology of Stress Response & its applications. BARC Mumbai Dec 19-21, 2005.India.
18. Datkhile Kailas, Rita Mukhopadhyaya, T.K. Dongre, **B.B. Nath** (2006) Do antioxidants have a role in radiation tolerance in *Chironomus ramosus* ? 5th International Conference on Low Dose

- radiation effects on Human health (LOWRAD) and symposium on Radiation Biology, BHU, Nov 22-25 2006, Varanasi, India.
19. Babrekar A.A., **Nath B.B.**, Bhaskaran S. & Vidyasagar P.B (2006)“Developmental effect of altered gravitational environment in *Chironomus*”. Annual Conference of ISDB Pune, India, Nov 23rd – 25th 2006
 20. Santosh B., Babrekar A.A., **Nath B.B.** & Vidyasagar P.B. (2007) Effect of altered gravity on insect development. National Symp. on Biophysics: Trends in Biomedical Research New Delhi, India, Feb 13-15 2007.
 21. Datkhile K.D., Mukhopadhyaya R., Dongre T.K. and **Nath B.B.** (2007) Radiation tolerance in tropical Indian midge *Chironomus ramosus*. All India Cell Biol. Conference 2nd-4th Feb 2007. Delhi. India.
 22. Datkhile K.D., Mukhopadhyaya R. Dongre T.K. and **Nath B.B.** (2007) Effect of gamma radiation on Indian tropical midge *Chironomus ramosus*: DNA damage and protein profiles. All India Cell Biology Conference 14th -16th Dec., 2007. Banaras Hindu University, Varanasi, India (*presented by KDD and won Mansi Ram memorial best poster presentation award*).
 23. Babrekar A.A. and **Nath B.B.** (2008) Role of iron in midges during homeostatic response to stress. XXXII All India Cell Biology Conference Dec.4th-6th 2008, Pune. India.
 24. Datkhile K. D., Mukhopadhyaya R., Dongre T.K. and **Nath B.B.** (2008) Exposure of *Chironomus ramosus* to gamma radiation: A case study at organismal, developmental and cellular level. XXXII All India Cell Biology Conference Dec.4th-6th 2008, Pune. India.
 25. **Nath B.B.** and Babrekar A.A. (2009) Implications of hypoxic stress in *Chironomus ramosus* larvae with reference to iron. XVII International symposium on Chironomidae, 5-10th July 2009, **Nankai University, Tianjin, China [Invited talk]**
 26. LeenaThorat, Sushama Gaikwad & **B. B. Nath** (2011) Desiccation stress responsive monitoring of trehalose biosynthesis in larvae of tropical midge *Chironomus ramosus*: a potential biomarker for climate change studies. [presented by LeenaThorat] **4th International Symposium on Environmental Ectotherms and Plants (ISEPEP3), 17-22 July 2011, Rennes, France.**
 27. Rahul Gaikwad & **B.B.Nath** (2011) A case study of honey bee population for selected commercially important traits in Uttaranchal forest. National Conference: Forest for the Future of Man. 16-17th Sept. 2011 Association of Teachers in Biological Sciences. Mumbai, India.
 28. LeenaThorat, Sushama Gaikwad & **B.B.Nath** (2011) Trehalose as one of the candidate molecules used by midge during anhydrobiotic stress augmented by antioxidant enzymes. DAE-BRNS Life Sciences Symposium (LSS-2011) 12-14th October 2011, BARC, Trombay, Mumbai, India (*presented by LeenaThorat and won best poster presentation award*).

29. **Nath B.B.**, Datkhile K.D., Mukhopadhyaya R. (2011) Experimental insights into the salient features of gamma radiation tolerance of *Chironomus ramosus*. XVIII International symposium on Chironomidae, 4-6th July 2011, Norwegian Univ. of Science & Technology, **Norway [Invited talk]**
30. LeenaThorat, S. Gaikwad, **B.B.Nath** (2012) A novel stress metabolite in midges during anhydrobiosis. XXXVI AICBC and International Symposium on Stress adaptive response and Genome integrity. BARC, Mumbai, India Oct 17-19, 2012.
31. **B.B.Nath**, K.D. Datkhile, R. Mukhopadhyaya (2012) An insight into gamma radiation tolerance of an ancient extremophilic insect *Chironomus ramosus*. International conference on Radiation Biology (ICRB 2012) ACTREC, Navi Mumbai, India Nov 22-24, 2012. **(Invited talk by BBN)**
32. Madhura Mohole, Sangeeta Sawant, **B.B.Nath** (2012) Evolutionary and functional studies of *Chironomus* hemoglobin using Bioinformatics methodology. Silver Jubilee Bioinformatics Conference. Dec.6-8, 2012. Pune, India.
33. AnupamaRonad, D. Kamath, R. Vartak & **B.B.Nath** (2013) Environmental exposure to iron: A study of the implications using *Chironomus* as an indicator organism. Annual Conference of Mutagen Society of India, BARC, Mumbai 28th-30th January, 2013.
34. B.B. Nath & L. Thorat (2013) Life without water: signaling molecules that ameliorate anhydrobiosis in *Chironomus*. International Symposium on Molecular Signaling, Feb 18-21, 2013, VisvaBharati Central University, Santiniketan, India **[Invited Symposium talk by BBN]**
35. B.B.Nath (2013) *Chironomus* as model for Stress-Biology studies **[Invited talk at IMT, Marburg Germany 27th Nov, 2013]**
36. LeenaThorat & **B.B.Nath** (2013) Biochemical adaptations during 'life without water': glucosamine playing a pivotal role in anhydrobiotic homeostasis in *Chironomus ramosus*. XXXVII All India Cell Biology Conference, Bangalore, India, Dec 21-24, 2013 [LeenaThorat was awarded the A.S. Mukherjee memorial best oral presentation prize by Young Scientist]
37. **Nath B.B.** (2014) Desiccation tolerance and anhydrobiosis in *Drosophila melanogaster*. *Drosophila* meeting 2014, BHU, Varanasi, India **[Invited talk]**
38. Thorat L. & **Nath B.B.** (2014) Tolerance to desiccation stress in *C. ramosus* through efficient homeostatic control. [presented by LT at Biology Center, Czech Academy of Sciences. Ceske Budejovice, **Czech Republic**. 17-22 Aug. 2014]
39. Thorat L. & Nath B.B. (2014) Effects of biotic and abiotic factors on survival and development of *C. ramosus*. [presented by LT at Biology Center, Czech Academy of Sciences. Ceske Budejovice, **Czech Republic**. 17-22 Aug. 2014]

40. Gaikwad P., Mukhopadhyaya R. & **B.B.Nath** (2014) Gamma radiation stress induced DNA damage and apoptosis in *C. ramosus*. [**Invited Talk by BBN** at Biology Center, Czech Academy of Sciences. Ceske Budejovice, **Czech Republic**. 17-22 Aug. 2014]
41. **B.B.Nath** & D.C. Gharpure (2014) A novel computational approach of image analysis to quantitate behavioural response to heat stress in *C. ramosus* larvae. [presented by BBN at Biology Center, Czech Academy of Sciences. Ceske Budejovice, **Czech Republic**. 17-22 Aug. 2014]
42. **B.B.Nath**(2014) Trends in detection and imaging techniques in abiotic stress-response research. National Symposium on Academic and Research Excellence in Animal Sciences (AREAS 2014). Sangamner College 26th Sept 2014, Sangamner, Maharashtra, India.
43. **B.B.Nath** (2014) Cross-Translational Studies in Human and *Drosophila*. Planary Invited talk at Internatinal Multifocal Conference organized by Krishna Institute of Medical Sciences Deemed University Karad, India and Uniformed Services University of Health sciences, USA. 3rd Dec.2014
44. **B.B.Nath** (2014) Cellular and molecular basis of tolerance to gamma radiation in midge. Invited talk at the International conference on “Molecular signaling: Recent trends in biomedical and translational research” (ICMS: RTBTR2014), organized by JNU & NII New Delhi & Roorkee IIT , India 17-19 Dec 2014.
45. **B.B.Nath** (2015) “Novel approach for biodiversity assessment in honeybees”: Invited talk at State level workshop on “Beekeepers and its role in college industry” 24th January 2015, Pune, India.
46. Phatak Kanchan, Khanna P.K. and **Nath B.B.** (2015) Interaction of silver nano particles with amino acids in haemolymph of *Drosophila melanogaster*. National conference on chemistry of chalcogens and related topics DIAT, Pune, India 12th-13th Jan 2015.
47. **Nath B.B.** (2015) Chironomid midge as an excellent bio-monitoring agent for freshwater ecosystem: Indian scenario and global perspective. Invited talk at the State level Seminar on “Freshwater Ecosystems of Maharashtra: Their biota, ecology and health”. 7th Feb 2015. Modern College, Shivajinagar. Pune, India.
48. **Nath B.B.** (2015) Current issues and challenges of experimental models in radiation research. Invited talk at Society for Radiation Research meeting, Tata Memorial Hospital, Parel, Mumbai, India. 10th Feb 2015.
49. **Nath B.B.** (2015) Chironomus: an emerging model system for stress biology studies. Invited Talk at Bioscience Group, BARC, Mumbai, India. 5th June 2015.
50. **Nath B.B.** (2015) Keynote address on “Indicators of environmental stress: Indian tropical midge” at National conference on Recent Trends in Life Sciences” S.M. Joshi College Pune, India 11 July 2015.

51. Pallavi Gaikwad, Rita Mukhopadhyaya, **B.B.Nath** (2016) Fate of gamma radiation exposure on radiotolerant insect *Chironomus ramosus*. [PG won award under Best Posters] International Conference on Radiation Research: Impact on human health and environment (ICRR-HHE 2016) Feb 11-13 2016, BARC, Mumbai, India.
52. **Nath B.B.** (2016) Differential sensitivity of gamma radiation in *Chironomus* and human hemoglobin. [*Invited Talk*] International Conference on Radiation Research: Impact on human health and environment (ICRR-HHE 2016) Feb 11-13 2016, BARC, Mumbai, India
53. **Nath B.B.** (2016) Teaching the vertebrate skeletal system with cast and models avoiding animal dissection. 26th Biennial International Conference of the Asian Association for Biology Education 20th-24th Sept 2016. The International Centre, Goa, India
54. Gaikwad P.S., Mukhopadhyaya R., **Nath B.B.** (2016) Chronic vs. acute gamma radiation stress in *Chironomus*: a decisive factor for apoptosis. XL All India Cell Biology Conference and International Symposium on Functional Genomics and Epigenomics. Nov 17-19 2016. Jiwaji University [PG won award under Best Posters], Gwalior, India
55. Phatak K.A., Khanna P.K., **Nath B.B.** (2016) Leucism in *Drosophila*: Response to silver metal stress. XL All India Cell Biology Conference and International Symposium on Functional Genomics and Epigenomics. Nov 17-19 2016. Jiwaji University, Gwalior, India.
56. Leena Thorat and **B.B.Nath** (2017) Trehalose acts as a Redox regulator in *Drosophila* during desiccation stress. XV Annual meeting of the Society for Free Radical Research India (SFRR-India 17), 9th-12th January 2017. BARC, Mumbai, India.
57. Phatak K.A., Khanna P.K., **Nath B.B.** (2017) Biological impact of Zinc oxide and Zinc micro and nanoparticles on survival of *Drosophila melanogaster*. National Conference on Chemistry of Chalcogen, 12th-13th Jan 2017. DIAT, Pune, India.
58. **B.B.Nath** (2017) New candidates of stress-protectant biomolecules: Cellular and molecular exploration in extremophilic midge. Invited talk at National Conference on Advances of Life Sciences & Radiation Biology. 17th-18th Feb 2017. University of Burdwan, Burdwan, India.
59. **Nath B.B.** (2017) Use of small Bioindicator animals for monitoring climate change and abiotic ecological factors. State level conference on 'Climate Change and Ecology (CCE-2016) on 14th Dec 2016, Pune, India.
60. **Nath B.B.** (2017) Extracellular haemoglobin of Chironomid midge and environmental stress tolerance. **Invited talk** at XX International Symposium on Chironomidae, 2-8th July 2017, **MUSE, Trento, Italy.**

61. Thorat L., Ravikumar A., Nisal A., **Nath B.B.** (2018) Aquatic silk protein: A unique metabolite from salivary gland cells of Indian chironomid midge. International Congress of Cell Biology (ICCB 2018), 27th-31st Jan 2018, CCMB, Hyderabad, India.
62. **Nath B.B.** (2018) Extracellular hemolymph of extremophilic midge insect: New insight for stress biology 6th International Conference on Molecular Signalling (ICMS 2018) University of Hyderabad 10th Feb 2018., India.
63. **Nath B.B.** (2018) Challenges and troubleshooting of imaging and documentation of cellular and developmental processes in *Chironomus* through modulation of microscope optics. Invited talk at II World Congress on Microscopy: Instrumentation techniques and application in life sciences and material sciences (WCM 2018). 10-12 Aug 2018 M. G. University, Kottayam. India.
64. **Leena Thorat and BB Nath.** Use of advanced microscopy tools and techniques for desiccation stress studies in *Chironomus* and *Drosophila*. Invited talk at II World Congress on Microscopy: Instrumentation techniques and application in life sciences and material sciences (WCM 2018). 10-12 Aug 2018 [Presented by LT) at Mahatma Gandhi University, Kottayam, India.
65. Leena Thorat, A. Shirolkar, S. Rapole, **B.B.Nath** (2018) Salivary gland proteome profile of *Chironomus ramosus*: Cellular and molecular investigations with reference to aquatic silk protein. (Presented by LT) International Conference on Proteomics for Cell Biology and Molecular Medicine, 12-14 Dec 2018. N.C.C.S. Pune, India
65. P. Bomble and **B.B.Nath** (2018) Oxidative stress mediated homeostasis in Chironomid midge during multiple stress regime. (poster presented by PB) XLII All India Cell Biology Conference, BITS Pilani, Goa Campus, Goa, India. Dec 21-24 2018.
66. Leena Thorat and **B.B.Nath** (2019) Fate determining metabolic pathway in chironomid midge under desiccation stress. International Conference on Molecular Signaling (ICMS 2019), 23-25 Jan 2019 [Dr Leena Thorat presented and awarded Best Oral Presentation by Young Scientist] SPPU and NCC Pune. India.
67. Leena Thorat and **B.B.Nath** (2019) Stress management for 'Life without water': Cellular and molecular lessons learned from *Drosophila*. Invited Talk by BBN at Two days' workshop cum National seminar on "Trends in Modern Biology, Techniques and Applications", 23rd & 24th March 2019, NIPER Kolkata & Dept. of Zoology, Visva-Bharati University, Santiniketan,
68. **B.B.Nath** (2019) "Chironomid midge as bioindicator of quality assessment of aquatic ecosystem." Invited talk at Limnology seminar "Wonders of Water" at Modern college of Arts Science & Commerce, Pune, in collaboration with Institute of Natural History and Research (INHER), India. 6th March 2019.

69. Leena Thorat and **B.B. Nath** (2019) Physiological plasticity under life without water: a biochemical tale of differential stress tolerance in *Chironomus* and *Drosophila*. Invited talk at the Annual Meeting of the Society for Experimental Biology, 2-5 July, Seville, **Spain**. [Dr. Leena Thorat presented and awarded Runner-Up for presentation by Young Scientist].
70. **B.B. Nath**, Malka Halpern, Leena Thorat (2019) Unique response patterns of chironomid midge to biotic and abiotic stress– an emerging model for stress biology studies. Invited talk at the Annual Meeting of the Society for Experimental Biology, 2-5 July, Seville, **Spain**.
71. Laviad-Shitrit, S., **Nath, B. B.**, Thorat, L. and Halpern, M. (2019) First evidence for the presence of pathogenic serogroups of *V. cholerae* in chironomids. The 8th conference on the biology of *Vibrios* (Vibrio2019). **November 2019**, McGill University, **Montreal, Canada**. [Presented by H.M.]
72. Shitrit-Laviad, S., **Nath, B. B.**, Thorat, L. and Halpern, M. (2020) First evidence for the presence of pathogenic serogroups of *V. cholerae* in chironomids. The 9th Congress of the Federation of the Israel Societies for Experimental Biology (FISEB 2020). **February 2020, Eilat, Israel**. [Presented by H.M.]
73. B.B. Nath (2020) DNA Barcoding: Pros & Cons. RMC Webinar, Pune, India [Invited guest lecture on 3rd June 2020]
74. B. B. Nath (2020) Researching to learn and learning to research with *Drosophila*. ATBS-RJC Online Biology Popular webinar series. [Invited lecture 20th Aug 2020 uploaded in YouTube]

Media Outreach

1. **Nath B.B.** – Interview with **THE TELEGRAPH** on “Aquatic flies with pandemic potential bacteria” , published on Dec 25, 2020
[<https://www.telegraphindia.com/science-tech/aquatic-flies-with-pandemic-potential-bacteria/cid/1801542>]
2. **Nath B.B.** – Interview with **SciDevNet** on “Aquatic insect can warn against cholera outbreaks” , published on Dec 30, 2020
[<https://www.scidev.net/asia-pacific/news/aquatic-insects-can-warn-against-cholera-outbreaks/>]
3. **Nath B.B.**- Interview with the **TIMES OF INDIA** on “*Study shows impact of climate and geography on ecotypes of bees*”, published on May 5, 2019
[<https://timesofindia.indiatimes.com/city/pune/study-shows-impact-of-climate-and-geography-on-ecotypes-of-bees/articleshow/69180737.cms>].

4. **Nath B.B.**- Interview with **INDIA BIOSCIENCE** on “*In higher education, what relationship do teaching and research share?*”, posted on Nov 16, 2018 under POLICY, TEACHING and RESEARCH. [<https://indiabioscience.org/columns/education/in-higher-education-what-relationship-do-teaching-and-research-share>].

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