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P.G. Dept. of Zoology, Berhampur University  
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## Education

- 2020**                    **Doctor of Science ( ZOOLOGY)**  
Berhampur University, Berhampur-760007
- 2014**                    **Post Doctoral Research (Mosquito Vector Biology)**  
Center for Infectious Disease and Dynamics and The Huck Institute of Life Sciences,  
The Pennsylvania State University, USA.
- 2010**                    **Doctorate of Philosophy (Zoology)**  
University of Delhi, Delhi-110021, India
- 2000**                    **Master of Philosophy (Zoology)**  
Berhampur University, Berhampur-760007

## Area of Specializations

- Teaching**            Nanotechnology, Radiation Biology, Cell Biology, Microbiology and Ecology
- Research**            Vector Biology and vector control

## Professional Affiliation

- 2011 - Present**      Assistant Professor, P.G. Dept. of Zoology, Berhampur University, Berhampur, Odisha.
- 2009-2011**          Project Coordinator, Vector Control Division, National Institute of Malaria Research, New Delhi.

## Awards and Prizes

- Best Teacher award-2021 for the overall performance by the Berhampur University
- Best Teacher award-2016 for the overall performance by the Berhampur University
- Raman Postdoctoral fellowship by UGC to visit Center for Infectious Disease and Dynamics and The Huck Institute of Life Sciences, The Pennsylvania State University, USA for one year from Nov. 2013 to Nov. 2014.

## Research Projects handled

- Title: Studies on dynamics and diversity of bacterial endosymbionts of field collected *Aedes aegypti* and *Culex quinquefasciatus* and their possible relationship with insecticide resistance. Duration: 3 years, Funding: ICMR, Principal Investigator- Dr. T. K. Barik and Co. I.- Dr. L. K. Murmu (2023-Continue)
- Title: Studies of Bionomics of two malaria vectors, *Anopheles culicifacies* and *Anopheles fluviatilis* with special reference to their behavior in response to intervention measures (IRS/LLINs) in Chhattisgarh state, India. Duration: 2 years, Funding: ICMR under MERA-India, Principal Investigator- Dr. A. K. Mishra and Co. I.- Dr. T. K. Barik (2021-2023)

- Title: Studies on Commercially important Fish of Gopalpur Coast, Odisha in Bay of Bengal and Development of Data Base Using Bar Coding Technique. Duration: 3 years, Funding: Department of Biotechnology, GoI, Principal Investigator- Dr. T. K. Barik and Co. P.I.- Prof. U. R. Acharya. (2015-2018)
- Title: Screening of small molecules for antiaging action using *C. elegans* and Zebrafish as organism models. Duration: 1 and ½ years, Funding: Institute of Nuclear Medicine and Allied Sciences, DRDO. Principal Investigator- Dr. T. K. Barik and Co. P.I.- Dr. I. Prem Kumar. (2011-2013).

## Research Projects guided

- Title: Molecular Identification of certain public health important Mosquito species through DNA barcodes. Duration: 3 years, Funding: Department of Science and Technology, Govt. of Odisha, Guide-Dr. T. K. Barik, Research Fellow-Deepika Panda. (2016-2021)
- Title: Community perception regarding mosquito-borne diseases in Puri district of Odisha state, India. Duration: 1 year, Funding: Department of Science and Technology, Govt. of India, Guide-Dr. T. K. Barik, Research Fellow-Chirasmita Mishra. (2013-2014)
- Title: Use of Nuclear techniques in establishing sterile insect techniques for the suppression of *Aedes aegypti* in interaction with other control tactics. Duration: 01 Year, Funding: University Grants Commission. Guide-Dr. T. K. Barik, Research Fellow-Kiran Bala Bhuyan. (2012-2013).

## Ph. D. Scholars Awarded

- Sisir Kumar Naik: Biology, Ecology and Oviposition Behaviour of Certain Mosquitoes.
- Jaya Kishor Seth: Phylogenetic analysis of species of the family Leiognathidae using DNA barcoding and assessment of Ichthyofaunal diversity of Gopalpur-on-sea.
- T. Sarita Achari: Impact of thermal stress on efficacy of Bt toxin against wild *Aedes* mosquitoes.
- Kiran Bala Bhuyan: Use of Nuclear Techniques in establishing Sterile Insect Technique for the suppression of *Aedes aegypti* in interaction with other control tactics.
- Deepika Panda: Molecular Phylogenetic Analysis of Certain Important Mosquito Species Using DNA Barcoding Technique.
- Laxman Kumar Murmu: Molecular assessment of drug resistance status of *Plasmodium falciparum* field isolates from Mayurbhanj district of Odisha, India.

## Ph. D. Scholars Working

- Basudev Nayak: Molecular characterization of Midgut microbiome of Dengue mosquito vector, *Aedes aegypti* under various stress conditions.
- Aishwarya B Acharya: Understanding the impact of plastic residues in emerging malaria vector, *Anopheles subpictus* and enigmatic role of their endosymbiotic bacteria.
- Pruthiraj Mohapatra: Assessment of mosquitocidal efficacy of abamectin and its formulation with attractive sugar bait for the control of Asian tiger mosquito, *Aedes albopictus*

- Suvam Acharya: Analysis of the role of insecticide imidacloprid for controlling *Culex quinquefasciatus* and deciphering its impact on detoxifying enzymes and mosquito microbiota.

## M. Phil Students Awarded

- Arpita A Sahu (2020) Rapid detection of malaria parasite positivity using novel molecular tools of Nanotechnology and DNA barcoding.
- Ipsita Biswal (2019): Geometric and morphometric analysis of wing shape in certain mosquito species.
- Chinmayee Panda (2018): Effects of temperature stress on the biochemical changes of certain field collected mosquito species.
- Deepasree Padmaja Behera (2017): Analysis of biological activity certain indigenous plant extracts as mosquitocidal agent.
- Simani Mohanty (2017): Evaluation of insecticidal potential of certain indigenous plant extracts against field collected *Culex* mosquitoes.
- Swarup Ranjan Mohanty (2017): Bioefficacy of indigenous plant extracts against wild *Aedes* mosquitoes.
- Ms. Deepika Panda (2016): Molecular identification of certain public health important mosquito species through DNA barcoding.
- Ms. Chrasmita Mishra (2012): Effect of Gamma radiation on field collected *Aedes* mosquitoes.
- Ms. Kiran Bala Bhuyan (2012): Effect of Gamma radiation on field collected *Aedes* mosquitoes.

## M. Sc Dissertation

- Amir Kumar Pattanayak (2022): Phylogenetics, genetic diversity and divergence time estimation of the species *Myripristis botche* (Cuvier 1829)(Family: Holocentridae and *Priacanthus tayenus* (Richardson 1846) of the Family Priacanthidae from Odisha coast, Bay of Bengal, India.
- Balakrishna Gopi Dalai (2022): Genetic diversity, phylogenetics and molecular dating of the species *Nemipterus japonicas* (Bloch 1791), *Scolopsis vosmeri* (Bloch 1792) (Family: Nemipteridae) and *Dendrophysa russelii* (Cuvier 1829) (Family: Sciaenidae) from Odisha coast, Bay of Bengal, India.
- Rakesh Kumar Dalai (2022): Studies on genetic diversity, phylogeny and divergence time of the species *Upeneus sulphureus* (Cuvier, 1829), *Upeneus pori* (Ben-Tuvia and Golani, 1989) (Family: Mullidae) and *Perois russelii* (Bennett, 1831)(Family: Scorpaenidae) from Odisha coast, Bay of Bengal, India.
- Soumya Ranjan Pradhan (2022): Genetic diversity, divergence dating and phylogenetic status of the species *Gerres filamentosus* (Cuvier, 1829), *Gerres erythrorus* (bloch, 1791)(Family: Gerreidae) & *Minous monodactylus* (Block and Schneider 1801) (Family: Synanceiidae) from Odisha coast, Bay of Bengal, India.
- Ashish Kumar Swain (2021): Identification and genetic divergence of *Aedes albopictus* through DNA Barcodes.
- Vivekananda Biswal (2021): Phylogenetic analysis and DNA based species confirmation of *Culex quinquefasciatus*.
- Alka Patro (2020): Analysis of molecular phylogeny and genetic diversity of *Aedes* mosquito species.
- Sthitipragyan Maharana (2019): Estimation of divergence pattern and phylogenetic relationship of *Anopheles subpictus*.
- Bijayalaxmi Maharana (2019): Analysis of population dynamics and molecular evolutionary relationship of *Anopheles subpictus*.

- Manas Ranjan Pradhan (2017): Molecular analysis of genetic diversity and gene flow of selected marine ornamental fishes of Bay of Bengal.
- Sreeja Nayak (2015): Molecular strategy for species identification of two fishes of Carangidae family using Cytochrome Oxidase I mitochondrial gene.

## Leadership Activities

2011-13	Assistant superintendent-Boys hostel-Berhampur University
2012-13	Programme Officer-NSS unit-Berhampur University
2013-Cont.	Radiological Safety Officer-Gamma irradiation facility centre-Berhampur University
2013-Cont	Scrutinizer for various courses of Berhampur University
2015-2019	Associate Coordinator, P.G. Department of Biotechnology (SFC)
2019-2022	Coordinator, P.G. Department of Biotechnology (SFC)
2021-2022	Coordinator, P.G. Department of Zoology
2023-Cont.	Coordinator, School of Pharmacy and Education Research (SFC)

## Other Administrative Responsibilities Handled

- Member, IQAC, Berhampur University
- Member, Board of Studies in Zoology
- Member, Board of Studies in Biotechnology
- Member, DRDC in Zoology of Berhampur University

## Publications

### Full Papers published in National and International journals

- **60.** Sahu B, Barik TK, Patel A. (2023) Exploring Genetic Diversity, Phylogenetics, and Molecular Dating of *Priacanthus tayenus* (Richardson, 1846) from the Odisha Coast, Bay of Bengal, India, *Advances in Bioresearch*, 14(5), In Press
- **59.** Sumitha MK, Kalimuthu M, Kumar MS, Paramasivan R, Kumar NP, Sunish IP, Balaji T, Sarma DK, Kumar D, Suman DS, Srivastava H, Bhowmick IP, Vaishnav K, Singh OP, Patil PB, Tyagi S, Mohanty SS, Barik TK, Uragayala S, Kumar A, Gupta B. (2023) Genetic differentiation among *Aedes aegypti* populations from different eco-geographical zones of India, *PLOS Neglected Tropical Diseases*, 17(7): e0011486
- **58.** Nayak B, Khuntia B, Murmu LK, Sahu B, Pandit RS, Barik TK, (2023) Artificial intelligence (AI): a new window to revamp the vector-borne disease control, *Parasitology Research*, 122(2): 369-379
- **57.** Murmu L K, Panda M, Meher, B R, Purohit P, Behera J, Barik TK (2023) Molecular surveillance of Kelch-13 gene in *Plasmodium falciparum* field isolates from Mayurbhanj District, Odisha, India, and in silico artemisinin-Kelch-13 protein interaction study, *Parasitology Research*, 122(3):717-727
- **56.** Nayak S K, Swain S N, Achari T. S, Barik T K (2022) Surveillance of population dynamics and breeding habitat diversity of *Anopheles subpictus* in different areas of Odisha, East Central India, *Rec. Zool. Surv. India*, 122(3): 323-336

- **55.** Nayak B, Khuntia B, Murmu LK, Sahu B, Pandit RS, **Barik T.K** (2022) Artificial Intelligence (AI): a new window to revamp the Vector-Borne Disease Control. *Parasitology Research*, 122(2):369-379
- **54.** Panda D, Patro A, **Barik T.K** (2022) Analysis of Phylogenetic relationship and genetic diversity of *Aedes* (Diptera: Culicidae) mosquito species based on mitochondrial genes. *Munis Entomology & Zoology*, 17(2), 698-710. .
- **53.** Achari TS, Panda C, **Barik TK.**, (2022). Biochemical response of *Aedes aegypti* and *Aedes albopictus* after exposure to thermal stress and toxin of *Bacillus thuringiensis*, *International Journal of Tropical Insect Science*, 42(1), 651-660. <https://doi.org/10.1007/s42690-021-00587-4>
- **52.** Nayak SK, Swain SN, Achari TS, **Barik TK**, (2022). Community perception regarding mosquito borne diseases in some selected areas of Ganjam district of Odisha state, India. *International Quarterly of Community Health Education*, 42(4) 403–408; <https://doi.org/10.1177/0272684X211004943>
- **51.** Panda D, Biswal I, Seth JK, **Barik T.K** (2021) Wing morphometric and DNA barcoding analysis of two different public health important Anopheles mosquito species. *Journal of Entomological Research Society*, 23(3), 239-255. . <https://doi.org/10.51963/jers.v23i3.2026>
- **50.** Murmu LK, **Barik TK**, (2021) An analysis of *Plasmodium falciparum*-K13 mutations in India. *Journal of Parasitic Diseases*. . <https://doi.org/10.1007/s12639-021-01425-7>
- **49.** Seth JK, **Barik TK** (2021) DNA Barcoding of the Family: Leiognathidae in the Water of Bay of Bengal, Odisha Coast, India Based on 16s rRNA and COI Gene Sequences, *Thalassas: An International Journal of Marine Sciences*, 37, 831-840. <https://doi.org/10.1007/s41208-021-00324-1>.
- **48.** Panda D, **Barik T.K** (2021). Molecular phylogenetic analysis of *Culex sitiens* based on the mitochondrial COI sequence. *International Journal of Mosquito Research*, 8(1), 25-30
- **47.** **Barik TK**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2021). Molecular evidence for *Myripristis jacobus* and *Scarus taeniopterus* new to Bay of Bengal: Sporadic appearance or preliminary colonization? *Marine Ecology*, 42 (1)e12632
- **46.** Murmu LK, Sahu AA, **Barik TK**, (2021). Diagnosing the drug resistance signature in *Plasmodium falciparum*: A review from contemporary methods to novel approaches. *Journal of Parasitic Diseases*, 45 (3): 869-876, <https://doi.org/10.1007/s12639-020-01333-2>.
- **45.** **Barik TK**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2020). Occurrence of *Pempheris schwenkii* and *P. mangula* (Teleostei: Pempheridae) from marine waters of Gopalpur-on-Sea, Odisha Coast, India. *Iranian Journal of Ichthyology*, 7 (2), 197-201
- **44.** Bhuyan KB, Achari T. S, **Barik T.K** (2020). Susceptibility assessment of F<sub>1</sub> progeny of irradiated *Aedes aegypti* to toxins of *Bacillus thuringiensis*. *Journal of Entomological Research*, 44(2), 257-259. Doi:10.5958/0974-4576.2020.00045.6
- **43.** **Barik TK**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2020). Morphological and molecular evidence supports the first occurrence of two fishes, *Siganus sutor* (Valenciennes, 1835) and *Seriolina nigrofasciata* (Rüppell, 1829) (Actinopterygii: Perciformes), from marine waters of Odisha coast, Bay of Bengal, India, *Acta Oceanol. Sin.*, 39(6), 26–35.
- **42.** **Barik TK**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2020). Documenting the first record of the Unicorn leatherjacket filefish *Aluterus monoceros*

(Tetraodontiformes: Monacanthidae) from the marine waters of Odisha coast, Bay of Bengal, India, Iranian Journal of Ichthyology, 7 (1), 85-91.

- **41.** Achari TS, **Barik TK.**, (2019). Assessment of temperature Induced cross-tolerance to *Bacillus thuringiensis* subsp. israelensis (Bti) on field-collected *Aedes albopictus*, Biopesticides International, 15 (2); 97-104.
- **40.** Swain SN, Makunin A, Dora AS, **Barik TK.**, (2019). SNP barcoding based on decision tree algorithm: A new tool for identification of mosquito species with special reference to *Anopheles*, Acta Tropica, 199; 105152 DOI: [10.1016/j.actatropica.2019.105152](https://doi.org/10.1016/j.actatropica.2019.105152)
- **39.** Seth JK, **Barik TK.**, Mishra SS., (2019). Geometric morphometric approach to understand the body shape variation in the pony fishes (Leiognathidae) of Odisha coast, India. Iranian Journal of Ichthyology. 6(3), 208-217.
- **38.** Seth JK, **Barik TK.**, Mishra SS., (2019). First Record of *Gazza dentex* (Leiognathidae) from Odisha Coast, India and Assessment of its Length-weight Relationship, Journal of Ichthyology, 59(2), 266–270.
- **37.** **Barik TK.**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2018). First record of non-native Bluering angelfish *Pomacanthus annularis* (Perciformes: Pomacanthidae) from the marine water of Odisha coast, Bay of Bengal, India, Iranian Journal of Ichthyology, 5 (4), 317-321.
- **36.** **Barik TK.**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2018). The first record of *Cephalopholis formosa* (Perciformes: Serranidae) from the marine waters of Odisha coast, Bay of Bengal, India, Journal of Ichthyology, 58(5), 751–753.
- **35.** Nayak SK, Swain SN, Barik TK, (2018). Assessment of population dynamics and breeding habitat diversity of *Culex quinquefasciatus*, International Journal of Biosciences 12(6), 183-192. DOI: 10.12692/ijb/12.6.183-192
- **34.** Nayak SK, Swain SN, **Barik TK.**, (2018). Behavioural study in relation to oviposition of wild *Culex quinquefasciatus* in laboratory condition, International Journal of Biosciences 12(5), 151-160.
- **33.** **Barik TK.**, Achari TS, Padhy SS, Sahu B, Acharya UR., (2018). Role of Thermal Stress on Development of Cross Tolerance to Toxins of *Bacillus thuringiensis* in Wild *Culex quinquefasciatus*, Journal of Entomological Research, 42(1): 67-74. DOI: 10.5958/0974-4576.2018.00012.9
- **32.** Seth JK, **Barik T.K.**, Choudhury RC. (2018). Karyomorphometry of two pony fishes, *Secutor insidiator* (Bloch, 1787) and *Leiognathus equulus* (Forsskal, 1775) (Leiognathidae) from the Odisha Coast, Bay of Bengal. Indian Journal of Geomarine Sciences, 47 (2):469-474.
- **31.** **Barik TK.**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2017). First record of *Tylosurus crocodilus* (Peron & Lesueur 1821) (Beloniformes: Belonidae) from Odisha coast, Bay of Bengal, India: exploration of a biological invasion using DNA barcoding., Thalassas. 10.1007/s41208-017-0053-y.
- **30.** Achari TS, Acharya UR, **Barik TK.**, (2017). Impact of thermal stress on survival and induced cross tolerance to toxins of *Bacillus thuringiensis* in wild *Aedes aegypti*, International Journal of Biosciences, 11(1), 156-164.
- **29.** Muppala S, Konduru SKP, Merchant N, Ramsoondar J, Rampersad CK, Rajitha B, Mukund V, Kancherla J, Hammond A, **Barik TK.**, Mannarapu M, Alam A, Basha R, Bramhachari PV, Verma D, Sushma PS, Pattnaik S, Nagaraju GP., (2017). Adiponectin: Its role in obesity-associated colon and prostate cancers, Critical

- **28. Barik TK**, Swain SN, Sahu B, Tripathy B, Acharya UR., (2017). Morphological and genetic analyses of the first record of longrakered trevally, *Ulua mentalis* (Perciformes: Carangidae) and of the pinjalo snapper, *Pinjalo pinjalo* (Perciformes: Lutjanidae) in the Odisha coast, Bay of Bengal, Mitochondrial DNA Part A, DOI: 10.1080/24701394.2017.1320993.
- **27.** Raghavendra K., Velamuri P.S., Verma V., Elamathi N., **Barik T.K.**, Bhatt R.M., Dash A.P., (2017). Temporo-spatial distribution of insecticide-resistance in Indian malaria vectors in the last quarter-century: Need for regular resistance monitoring and management, *Journal of Vector Borne Diseases*, 54; 111-130.
- **26. Barik T.K.**, Suzuki Y., Rasgon J.L. (2016). Factors influencing infection and transmission of *Anopheles gambiae* densovirus (AgDNV) in mosquitoes. *Peer J*, 4:e2691 <https://doi.org/10.7717/peerj.2691>.
- **25.** Bhuyan KB, **Barik T.K.** (2016). Impact of High Dose of Gamma Radiation on Field Collected *Aedes aegypti*. *Journal of Mosquito Research*, 6(11),1-6.
- **24. Barik T.K.** (2015). Antimalarial Drug: From its Development to Deface. *Current Drug Discovery Technologies*, 12(4): 225-228.
- **23.** Suzuki Y, **Barik T.K.**, Johnson R.M., Rasgon J.L. (2015) *In vitro* and *in vivo* host range of *Anopheles gambiae* densovirus (AgDNV). *Scientific reports*, 5:12701.
- **22.** Sahu B, **Barik T.K.**, Dhiman RC. (2015) Analysis of Sulphadoxine-Pyrimethamine drug resistance in *Plasmodium falciparum* from Khurda district of Odisha, India. *Research Journal of Pharmaceutical Biological Chemical Sciences*, 6(3): 1270 – 1277.
- **21.** Raghavendra K, **Barik T. K.**, Sharma S. K., Dash M. K., Dua, V.K., Pandey A., Ojha V.P., Tiwari S.N., Ghosh S.K., Dash A.P. (2014) A note on the insecticide susceptibility status of principal malaria vector, *Anopheles culicifacies* in four states of India. *Jr. Vect. Bor. Dis.*, 51:230-234.
- **20.** Elamathi N, **Barik T.K.**, Verma V, Velamuri PS, Bhatt R.M., Sharma S.K, Raghavendra K (2014) Standardization of bottle assay-an indigenous method for laboratory and field monitoring of insecticide resistance and comparison with WHO adult susceptibility test. *Parasitology Research*, 113:3859–3866.
- **19.** Panigrahi SK, **Barik T.K.**, Mohanty S, Tripathy NK. (2014) Laboratory evaluation of oviposition behavior of field collected *Aedes* mosquitoes. *Journal of Insects*, Article ID 207489, 8 pages, <http://dx.doi.org/10.1155/2014/207489>.
- **18.** Panigrahi SK., Tripathy NK., **Barik T.K.** (2013) Field survey of *Aedes* mosquito breeding sites in and near Berhampur city, Odisha, India. *Journal of Entomological Research*, 37 (2): 187-194.
- **17.** Joshi J, **Barik T. K.**, Shrivastava N., Dimri M., Ghosh S., Mandal R. S., Ramachandran S., Prem Kumar I. (2013) Cyclooxygenase-2 (COX-2) - A Potential Target for Screening of Small Molecules as Radiation Countermeasure Agents: An *In Silico* Study, *Current Computer-Aided Drug Design*, 9(1): 35-45.
- **16. Barik T.K.**, Raghavendra K and Gowswami A. (2012) Silica nanoparticle: a potential new insecticide for mosquito vector control. *Parasitology Research*, 111:1075–1083.
- **15.** Mishra A.K., Chand S.K., **Barik T.K.**, Dua V.K. and Raghavendra K. (2012) Insecticide resistance status in *Anopheles culicifacies* in Madhya Pradesh, Central India, *Jr. Vect. Bor. Dis.* 49, 39-41.

- **14.** Bhatt R.M, Sharma S.N., **Barik T.K.** and Raghavendra K. (2012) Status of insecticide resistance in malaria vector, *Anopheles culicifacies* in Chhattisgarh state, India. *Jr. Vect. Bor. Dis.* 49, 36-38.
- **13.** Raghavendra K., **Barik T.K.**, Bhatt R.M., Srivastav H.C., Sreehari U. and Dash A.P. (2011) Evaluation of the pyrrole insecticide chlorfenapyr for the control of *Culex quinquefasciatus* Say. *Acta Tropica.* 118(1): 50-55.
- **12.** Raghavendra, K., **Barik, T.K.**, Reddy Niranjana B.P., Sharma, P., Dash, A.P. (2011): Malaria vector control: From past to future. *Parasitology Research.* 108(4):757-79.
- **11.** Raghavendra K., **Barik T.K.**, Sharma P., Bhatt R.M., Srivastav H.C., Sreehari U. and Dash A.P. (2011): Chlorfenapyr: A new insecticide with novel mode of action can control pyrethroid resistant malaria vectors. *Malaria Journal.* 10:16 doi:10.1186/1475-2875-10-16.
- **10.** Raghavendra, K., **Barik, T.K.**, Swain, V. (2010): Studies on the impact of thermal stress on survival and development of adaptive thermotolerance in immature stages of *Anopheles culicifacies*. *Journal of EcoBiotechnology.* 2(5): 25-30.
- **09.** Raghavendra, K., **Barik, T.K.**, Adak, T. (2010): Development of larval thermotolerance and its impact on adult susceptibility to malathion insecticide and *Plasmodium vivax* infection in *Anopheles stephensi*. *Parasitology Research.* 107:1291-1297.
- **08.** Seth, R.K. and **Barik, T.K.** (2009): Assessment of infective behaviour and reproductive potential over successive generations of entomopathogenic nematodes, *Steinernema glaseri* (Rhabditida: Steinernematidae) reared within radio-sterilized host larvae, towards *Spodoptera litura* (Lepidoptera: Noctuidae). *Journal of Biocontrol Science and Technology.* 19, 111-125.
- **07.** Seth, R. K., **Barik, T.K.**, and Chauhan, S. (2009): Interaction of Entomopathogenic Nematodes, *Steinernema glaseri* (Rhabditida: Steinernematidae) cultured in Irradiated Host with F<sub>1</sub> sterility: Towards Management of a Tropical pest, *Spodoptera litura* (Fabr.) (Lepidoptera: Noctuidae). *Journal of Biocontrol Science and Technology.* 19, 139-155.
- **06.** **Barik, T.K.**, Sahu, B. and Swain, V. (2009): A review on *Anopheles culicifacies*: From Bionomics to Control with special reference to Indian subcontinent. *Acta Tropica.* 109, 87-97.
- **05.** Sureshbabu, A.V.S., **Barik, T.K.**, Namita I. and Prem Kumar, I. (2008): Radioprotective properties of *Hippophae rhamnoides* (Sea buckthorn) extract *in vitro*. *International journal of health sciences.* 2 (2), 27-34.
- **04.** **Barik, T.K.**, Sahu, B. and Swain, V. (2008): Nanosilica: From Medicine to Pest Control. *Parasitology Research.* 103, 253-258.
- **03.** Seth, R.K; and **Barik, T.K.** (2007): Effect of host irradiation on bio-infectivity and proliferation capacity of *Steinernema glaseri* as entomopathogenic nematodes on a serious tropical pest, *Spodoptera litura*. *Jr. Nuclear Agri. and Biol.* 36, 81-101.
- **02.** Seth, R. K., **Barik, T. K.** and Gautam, R. D. (2007): Safety evaluation of parthenium beetle, *Zygogramma bicolorata* pallister (Chrysomelidae: Coleoptera) against entomopathogenic nematode, *Steinernema glaseri* (Steiner). *Journal of Entomological Research,* 31 (4), 313-317.



- **01.** Pattnaik, S., Sahu, S. and **Barik, T. K.** (2006): Spontaneous Chromosomal Abnormalities in Culex and Aedes. *Journal of Entomological Research*, 30 (3), 199-206.

## Book chapters Published

- **19.** **T. K. Barik** and U.R. Acharya, "Paratransgenesis: a novel approach for malaria transmission control" in A Book "Biology and control of the dominant vectors of malaria in India" NASI, Allahabad Edited by Vas Dev. 2020. Pp.183-196.
- **18.** D. Panda and **T. K. Barik**, "Unravelling Mosquito Species Complex through DNA barcodes: Complementing Morphological Identification for Accurate Discrimination" in A Book "Molecular Identification of mosquito vectors and their Management", Springer-Verlag Edited by T.K.Barik. 2020. Pp 1-23.
- **17.** S. N. Swain and **T. K. Barik**, "From Linnaean system to Machine learning based-SNP Barcoding: A changing epitome of mosquito species Identification" in A Book "Molecular Identification of mosquito vectors and their Management", Springer-Verlag Edited by T.K.Barik. 2020. Pp23-34.
- **16.** T.Sarita Achari, **T.K. Barik**, and U.R.Acharya, "Toxins of *Bacillus thuringiensis*: A novel microbial insecticide for mosquito vector control" in A Book "Molecular Identification of mosquito vectors and their Management", Springer-Verlag Edited by T.K.Barik. 2020. Pp89-116
- **15.** Bijayalaxmi Sahu, **T. K. Barik**, A. K. Patel, "Nano-biotechnology: A new window for management of mosquito vectors" in A Book "Molecular Identification of mosquito vectors and their Management", Springer-Verlag Edited by T.K.Barik. 2020. Pp179-208.
- **14.** Kiran Bala Bhuyan, Arpita Arsmika Sahu, T. Sarita Achari, **T. K. Barik**, "Application of radiation for the management of mosquito vectors" in A Book "Molecular Identification of mosquito vectors and their Management", Springer-Verlag Edited by T.K.Barik. 2020. Pp209-225.
- **13.** **T. K. Barik** and J.K.Seth, "Understanding the process of evolution and the future of biodiversity under a changing climate with special reference to infectious diseases" in A Book "Biodiversity and conservation: The inventory, values, risks and benefits of life", CRC Press Taylor and Francis, Edited by Sangeetha. 2019. Pp. 341-359.
- **12.** **T.K.Barik** and S.N. Swain, "RON receptor kinase in pancreatic cancer progression" in A Book "Role of tyrosine kinases in Gastrointestinal malignancies" Springer-Verlag Edited by Nagaraju GP. 2017. Pp. 71-81.
- **11.** **T. K. Barik** and S.N. Swain, "Curcumin: Its role in regulation of HIF-1alpha in gastric cancer" in A Book "Role of transcription factors in Gastrointestinal malignancies", Springer-Verlag Edited by Nagaraju GP, and Bramha Chari PV. 2017. Pp. 203-211.
- **10.** Chinmayee Panda, **T.K. Barik**, "Filariasis" in A Text Book of "Human Diseases" Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 100-108.
- **09.** **T.K. Barik**, Simani Moanty, Sasmita Panda "Diarrhoea" in A Text Book of "Human Diseases" Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 93-99.
- **08.** **T.K. Barik**, T. Sarita Achari, Sasmita Panda, "Amoebiasis" in A Text Book of "Human Diseases" Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 86-92.

- **07.** Deepika Panda, **T.K. Barik**, “Malaria” in A Text Book of “Human Diseases” Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 77-85.
- **06.** Simani Mohanty, **T.K. Barik**, “Tuberculosis” in A Text Book of “Human Diseases” Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 59-67.
- **05.** **T.K. Barik**, Deepika Panda, Sasmita Panda “Leprosy” in A Text Book of “Human Diseases” Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 51-58.
- **04.** T. Sarita Achari, **T.K. Barik**, “Dengue” in A Text Book of “Human Diseases” Edited by S. Panda and S.N.Padhi. Anchor Academic Publishing, Hamburg, Germany. 2017. Pp. 35-45.
- **03.** **T. K. Barik**, “Ecologically Sound Mosquito Vector Control in River Basins” in A Book “Environmental Management of River Basin Ecosystems”, Springer-Verlag Edited by Mu. Ramkumar, K. Kumarasamy, R. Mohanraj. 2015. Pp. 749-761.
- **02.** **T.K. Barik**, C. Mishra, K.B. Bhuyan, “Lac Culture” in A Text Book of “Application of Biology for self employment” Edited by S.N. Padhi. Nanda Kishore Publications, Bhubaneswar Odisha, India. 2014. Pp. 95-128.
- **01.** **T.K. Barik**, “Recent Trend in Sericulture” in A Text Book of “Application of Biology for self employment” Edited by S.N. Padhi. Nanda Kishore Publications, Bhubaneswar Odisha, India. 2014. Pp. 28-47.

## Edited Book Published

- **T. K. Barik** (2020) edited a book entitled “Molecular Identification of mosquito vectors and their management” Springer Nature Publisher.

## Invited/Plenary lectures delivered

- *Mosquito Vector Management: Challenges and Alternatives*, **T.K.Barik** In: International Conference on “Recent Advances in Biological Sciences” organized by Dept. of Botany and Dept. of Zoology, Vikram Deb (Autonomous) College, Jeypore, Odisha. December 23-24, 2022.
- *DNA Barcoding: A rapid and reliable tool for species discrimination*, **T.K.Barik** In: national seminar on “Impact of Climate change on Biodiversity of Coastal Ecosystem of Odisha” organized by Department of Zoology, Kendrapara Autonomous College, Kendrapara, Odisha. March 12-13, 2022.
- *Implications of Nanobiotechnology: From atom to cell*, **T.K.Barik** In: national webinar on “Recent advances in Animal Sciences” organized by P.G. Dept. of Zoology, Kalahandi University, Odisha. May31, 2021.
- *Infection and host range assessment of Anopheles gambiae densovirus*, **T.K.Barik** and Usha R. Acharya. In: national seminar on “Biodiversity, Biotechnology and Bioinformatics: Innovative and Emerging trends” organized by P.G. Dept. of Botany, Berhampur University, Odisha. Feb.22-23, 2019.
- *Pathogenecity, infectivity and mode of transmission of Anopheles gambiae densovirus in malaria vector*, **T.K. Barik** and Usha R. Acharya. In: national seminar on “Crossroads of Biological Science and its applications” organized by P.G. Dept. of Zoology, Berhampur University, Odisha. Feb.15-16, 2019
- *DNA barcoding: A novel approach for species identification*, **T.K. Barik**, S.N. Swain, B. Sahu, B. Tripathy, U.R. Acharya. In: national seminar on “Biological Sciences for

Human Welfare: Teaching and Research in Modern Perspective”, Berhampore Girls College, Murshidabad, West Bengal. 29<sup>th</sup>-30<sup>th</sup> Sept.2018.

- *Understanding the impact of thermal stress and development of cross tolerance to toxins of Bacillus thuringiensis in immature stages of mosquito*, **T.K.Barik**. In National seminar on Air pollution: Its effects & Mtigation organised by Department of Chemistry, O.P.S. Mohavidyalaya, Hindol Road, Dhenkanal, Odisha. Jan. 7<sup>th</sup> & 8<sup>th</sup>, 2017.
- *Smaller than Micro*, **T. K. Barik**. In: Seminar at Talcher College, Angul, Odisha on 26<sup>th</sup> Nov. 2016.
- Environmental friendly insecticides for malaria vector control in India: An overview, T. K. Barik. In: National seminar on “Green chemistry: solution to environmental crisis”, Department of Chemistry, Berhampur University, Berhampur, Odisha, India. Oct. 13<sup>th</sup> & 14<sup>th</sup>, 2012.
- Recent trend in Sericulture, T. K. Barik. In: UGC sponsored Workshop/Seminar on “Biological Benefits for Solving Unemployment Problem”, KBDVA College, Nirakarpur in Collaboration with TITE College, Khordha, Odisha. Feb. 5<sup>th</sup>-6<sup>th</sup> 2012.

## Conference organized

- Organized National Seminar on “Advances and Challenges in Biological Sciences”(ACBS 2020) from 12<sup>th</sup> & 13<sup>th</sup> February, 2020 in P.G. Department of Zoology, Berhampur University, Bhanja Bihar-760007 Odisha, India as Organizing Secretary.
- Organized Webinar on “Frontiers in Biological Sciences from 28<sup>th</sup> Feb & 01<sup>st</sup> March, 2022 in P.G. Department of Zoology, Berhampur University, Bhanja Bihar-760007 Odisha, India as Organizing Secretary.

## Conference attended

- *Analysis of temperature-induced cross-tolerance to microbial insecticide, toxins of Bacillus thuringiensis and alteration in biochemical profile in wild Aedes mosquito species*, T. Sarita Achari and **T. K. Barik**, National Conference on “Recent advances in Chemical Sciences, organized by P.G.Department of Chemistry, Berhampur University, Odisha, India 19-20<sup>th</sup> March 2023
- *Understanding of oviposition preferences of field collected Anopheles subpictus using water from various breeding sites*, Sisir Kumar Nayak, T. Sarita Achari and **T. K. Barik**, In 23<sup>rd</sup> Odisha Bigyan ‘O’ Paribesh Congress National Seminar on “Science & Technology in Combating Climate Change, Sambalpur University and Orissa Environmental Society, Odisha, India 26-17<sup>th</sup> November 2022.
- *Molecular characterization and phylogenetic analysis of mosquito vectors from southern districts of Odisha state, India using DNA barcoding*, Deepika Panda **T. K. Barik**, In 3<sup>rd</sup> International Conference on “Genome Biology and 53<sup>rd</sup> Annual AQUA-TERRdy, School of Biological Sciences, Madurai Kamaraj University, Madurai, TamilNadu, India 28<sup>th</sup> Feb to 2<sup>nd</sup> March 2022.
- *Understanding mosquito faunal diversity: A predictive tool for assessing burden of vector-borne diseases in rural, peri-urban and urban areas*, Deepika Panda, Rabi Sankar Pandit, **T.K.Barik**, In national seminars on Life and Life processes: Interdisciplinary Approach for Sustainable Development, Department of Zoology, Goa University, 19-21<sup>th</sup> July 2021.

- *Impact of Bacillus thuringiensis israelensis on survival and life history traits of field collected Aedes aegypti and Aedes albopictus*, **T.K.Barik**, T. Sarita Achari. In International Virtual Conference on Present status and future trends in Entomological and Wildlife studies: An emerging platform for Zoologists, Department of Zoology, Mohanlal Sukhadia University, Udaipur (Raj.) 13-14 July 2021.
- *Management of Mosquito Menace*, **T.K.Barik**. In National Webinar Programme on 'Disease and Therapeutic Management' organized by the Department of Zoology, Science College(Autonomous) Hinjilicut. September 27th, 2020
- *A barcodes of Mosquitoes: A complementary approach for species discrimination*, **T.K.Barik**, S.N. Swain, D. Panda. In 14<sup>th</sup> International Conference on Vectors and Vector Borne Diseases, Bhubaneswar, Odisha. 9<sup>th</sup> -11<sup>th</sup> Jan 2019.
- *DNA barcoding: A novel approach for species identification*, **T.K. Barik**, S.N. Swain, B. Sahu, B. Tripathy, U.R. Acharya. In: national seminar on "Biological Sciences for Human Welfare: Teaching and Research in Modern Perspective", Berhampore Girls College, Murshidabad, West Bengal. 29<sup>th</sup>-30<sup>th</sup> Sept.2018.
- *Molecular identification of mosquito species using Mt DNA barcoding approach*, D. Panda, S.N. Swain, **T.K.Barik**. In: International on "Recent trends of Chemical & Biological Science in Medicine, Natural Product and Drug Discovery", P.G. Dept. of Chemistry, Berhampur University. 3<sup>rd</sup>-5<sup>th</sup> March 2017.
- *Effect of temperature stress and induced cross tolerance to toxins of Bacillus thuringiensis in wild Culex mosquitoes*, **T.K.Barik**, T. S. Achari, S.S Padhy, B. Sahu, U. R. Acharya. In: International on "Recent trends of Chemical & Biological Science in Medicine, Natural Product and Drug Discovery", P.G. Dept. of Chemistry, Berhampur University. 3<sup>rd</sup>-5<sup>th</sup> March 2017.
- *Understanding the impact of thermal stress and development of cross tolerance to toxins of Bacillus thuringiensis in immature stages of mosquito vectors*, **T.K. Barik**, T.S. Achari, B. Sahu, S.S. Padhy, U.R. Acharya. In: UGC sponsored National Seminar on "Air Pollution: It's effects & Mitigation", O.P.S Mohavidyalaya, Hindol Road, Dhenkanal, Odisha. Jan. 7th-8<sup>th</sup>, 2017.
- *Studies on the Impact of Thermal Stress on Cross Tolerance Level to Bacillus thuringiensis toxins on field collected Aedes mosquitoes*, T.S. Achari, S.S. Padhy, **T.K. Barik**, U.R. Acharya. In: Regional Science Congress at Bhubaneswar, Odisha, India. Jan. 27-28<sup>th</sup>, 2014.
- *Effect of Gamma radiation at higher doses on field collected Aedes mosquitoes*, K.B. Bhuyan, C. Mishra, B. Sahu, **T.K. Barik**. In: Regional Science Congress at Bhubaneswar, Odisha, India. Jan. 27-28<sup>th</sup>, 2014.
- *Assessment of Radio-Sensitivity of Field Collected Culex quinquefasciatus To Gamma Radiation*, C. Mishra, K.B. Bhuyan, B. Sahu, **T.K. Barik**. In: Regional Science Congress at Bhubaneswar, Odisha, India. Jan. 27-28<sup>th</sup>, 2014.
- *Impact of thermal stress on cross tolerance level to temephos on field collected Culex quinquefasciatus*, S. Mohanty, **T. K. Barik** and S. Patnaik. In: International symposium on "Environmental impacts, Health implications & Therapeutic Approaches and A special symposium on Water quality & Aquatic Biotechnology", Vikrama Simhapuri University, A.P, India. July 15-17<sup>th</sup>, 2012.
- *Epidemiology of malaria in Odisha state, India*, B. Sahu, C. Mishra, K. Bhuyan, and **T.K.Barik**. In: National seminar on "Man and Environment", Department of Zoology, Berhampur University, Berhampur, Odisha, India. June 10<sup>th</sup> & 11<sup>th</sup>, 2012.

- *Influence of environmental temperature on adult emergence of field collected Culex mosquitoes*, C. Mishra, K. Bhuyan, B. Sahu, and **T.K.Barik**. In: National seminar on “Man and Environment”, Department of Zoology, Berhampur University, Berhampur, Odisha, India. June 10<sup>th</sup> & 11<sup>th</sup>, 2012.
- *Community perception regarding mosquito borne diseases in Gajapati district of Odisha, India*, K. Bhuyan, B. Sahu, C. Mishra and **T.K.Barik**. In: National seminar on “Man and Environment”, Department of Zoology, Berhampur University, Berhampur, Odisha, India. June 10<sup>th</sup> & 11<sup>th</sup>, 2012.
- *Field survey of Aedes mosquito breeding sites in and near Berhampur city, Odisha, India*, S. K. Panigrahi, N. K. Tripathy and **T. K. Barik**. In: National seminar on “Ecotoxicology & Human Health”, Department of Zoology, Berhampur University, Berhampur, Odisha, India. Jan. 8<sup>th</sup> & 9<sup>th</sup>, 2012.
- *Chromosomes in some Culex mosquitoes in Bhanja Bihar population*, S. K. Sahu, S. Sethy, L. Araka, K. Sabar, I. Mishra, B.N. Sahoo, S.A.Achary, T.S. Achari, R. Desinayak, S. Panigrahy, S. Lenka, S. Padhi, P. Priyadarshini, A. Behera, M. Sandhibgraha, G. Basti, M. Mohanty, S. Nayak, S. Biswal, S. Patnaik and **T. K. Barik**. In: National seminar on “Ecotoxicology & Human Health”, Department of Zoology, Berhampur University, Berhampur, Odisha, India. Jan. 8<sup>th</sup> & 9<sup>th</sup>, 2012.
- *Studies on the impact of temperature stress on the survival of field collected Culex quinquefasciatus*. S. Mohanty, **T.K.Barik**, S. Behera and S. Patnaik In: National seminar on “Ecotoxicology & Human Health”, Department of Zoology, Berhampur University, Berhampur, Odisha, India. Jan. 8<sup>th</sup> & 9<sup>th</sup>, 2012.
- *Effect of Genotoxic Environmental Agents on Chromosomes of Culex and Aedes*. S. Pattnaik and **T.K. Barik** In: 30<sup>th</sup> All India Cell Biology Conference & Symposium on “Molecules to Compartments: Cross-Talks & Networks”, Department of Zoology, University of Delhi, Delhi, India. Feb. 2-4, 2007.
- *Bioefficacy of Entomopathogenic nematode Steinernema glaseri in relation to Moulting hormone agonist treatment: A biorational approach for management of a tropical pest, Spodoptera litura (Fabr.)*. R. K. Seth, **T.K. Barik** and S. Chauhan In: Biopesticides: Emerging Trends, BET 2005, Institute of Himalayan Bioresource Technology, Palampur, H.P. India. Nov. 11-13, 2005.
- *Integration of Entomopathogenic nematode, Steinernema glaseri with radiation induced F1 sterility: An ecologically compatible control strategy of a serious pest, Spodoptera litura (Fabr.)*. R.K.Seth and **T.K.Barik** In: 6<sup>th</sup> National Symposium on “Sustainable plant protection strategies: Health and environmental concerns”, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Ratnagiri, Maharashtra, India. Oct. 15-17, 2005.
- *Influence of radiation on Parasitoid-host interaction between entomogenous Steinernema glaseri and Spodoptera litura (Fabr.) vis-à-vis other biorational pest control measures*. R.K.Seth, **T.K.Barik**, S.Chauhan In: 4<sup>th</sup> Research Coordination Meeting (RCM) of the Coordinated Research Project on “Use of Nuclear Techniques for the Colonization and Production of Natural Enemies of Agricultural Insect Pests. Vienna, Austria. May, 13-17, 2005.
- *Influence of host irradiation on the bio-infectivity of Steinernema glaseri as entomopathogenic nematodes and their perpetuating parasitization potential on a serious tropical lepidopteran pest, Spodoptera litura*. R.K.Seth, **T.K.Barik**, S.Chauhan In: FAO/IAEA International Conference on Area-wide Control of Insect Pests. Integrating the Sterile Insect and Related Nuclear and other Techniques, Vienna, Austria. May 9-13, 2005.
- *Behavioral competence of entomopathogenic nematodes, Steinernema glaseri derived from radio-sterilized host on pest Spodoptera litura (Fabr.) treated with*

*moulting hormone-agonist*. R.K.Seth and **T.K.Barik** In: National Conference on Recent Trends in Radiation Biology and Cancer Research, Bikaner, Rajasthan. India. Oct.17-19, 2004.

- *Influence of radiation on parasitoid – host interaction between Steinernema glaseri and Spodoptera litura (Fabr.) vis-à-vis other biorational pest control measures*. R.K.Seth, **T.K. Barik**, S. Chauhan and R. Joshi In: XXII-International Congress of Entomology, Brisbane, Australia. Aug.15- 21, 2004.
- *Bio-infective potential of Entomopathogenic nematode, Steinernema glaseri in relation to Radio-sterilized host, Spodoptera litura (Fabr.)*. R.K.Seth, **T. K. Barik**, S. Chauhan and V. Baweja. In: 5<sup>th</sup> National Symposium on Bio-Control Agents for Sustainable Management of Pests. Uttaranchal, India. Dec.18-20, 2003.

## Membership of Academic Bodies

- Member: American Nano Society, Florida, USA.
- Member-National Academy of Vector Borne Diseases, India
- Life member-Alumni Association, P.G. Dept. of Zoology, Berhampur University
- Member-Berhampur University Teachers Association (BUTA)

## Workshops/Short-term Courses

- Online Faculty Development Programme on “E-Content Development” organized by Teaching Learning Centre, Tezpur University in association with University of Science and Technology, Meghalaya from 04<sup>th</sup>-08<sup>th</sup> April 2022.
- Online one week Workshop on “Research Methodology & Data analysis using open source software” organized by Rajiv Gandhi South Campus, Banaras Hindu University from 08<sup>th</sup>-12<sup>th</sup> March 2022.
- Online Training programme on “Metadata Management and Open Source Discovery System for Libraries” organised by Information and Library Network (INFLIBNET) Centre, Gandhinagar, Gujarat from 22<sup>nd</sup> to 26<sup>th</sup> June, 2020.
- Faculty Development Programme on “Earth & Environment Responses during COVID-19” at Sabitribai Phule Pune University from 11<sup>th</sup> July 2020 to 17<sup>th</sup> July 2020.
- Faculty Development Programme at Govt. P.G. College Bilaspur from 18<sup>th</sup> July 2020 to 29<sup>th</sup> July 2020.
- Workshop-cum-Training on “Recent Development and Future Trends of Bioinformatics in Biological Science” by Bioinformatics Infrastructure Facility Centre, Berhampur University, Berhampur, Odisha from 26<sup>th</sup>-27<sup>th</sup> Dec 2016.
- Refresher Course at Utkal University from 19<sup>th</sup> Aug. 2019 to 01<sup>st</sup> Sept. 2019
- Refresher Course at Central University of Hyderabad from 13<sup>th</sup> Nov. 2015 to 03<sup>rd</sup> Dec. 2015
- Workshop-cum-Training on Applications of Bioinformatics tools in Biological Science Teaching and Research by Bioinformatics Infrastructure Facility Centre, Berhampur University, Berhampur, Odisha from 22<sup>nd</sup> -24<sup>th</sup> March 2013.
- Training cum Certification course on Radiation Safety of Gamma Irradiation Chamber (Category-I Irradiators) by Bhabha Atomic Research Centre, Government of India, Mumbai from 18<sup>th</sup> -26<sup>th</sup> Feb 2013.
- Orientation Course at Sambalpur University from 28<sup>th</sup> Nov. 2011 to 25<sup>th</sup> Dec. 2011

- National training course on Mass Production Technology of Biological Control Agents conducted by National Centre for Integrated Pest Management (NCIPM), New Delhi from 15th-24th Feb 2005.
- Training programme on Proteomics: Bioinformatics Approaches Sponsored by Department of Biotechnology, Govt. of India from 13th –15th July 2004.

## Any other Activities (Member, Editorial Board)

- Editor: Advances of Entomology, Scientific Research Publishing, USA (2013-Continuing).
- Editor: International Journal of Malaria Research and Reviews, Discourse Journals, Nigeria (2013-Continuing).
- Editor: Immunology and infectious diseases, Horizon Research Publishing, USA (2014-Continuing).
- Review editor: Frontiers in Epidemiology
- Reviewer for Materials Research Bulletin, Elsevier.