

**G.B.N.CHAINY, Ph.D,FZSI, FNASc.**

*Professor of Zoology (Retired)*  
*UGC EMERITUS FELLOW(2013-2015)*  
*DBT VISITING RESEARCH(NER)(2018-2019)*  
*DEPARTMENT OF BIOTECHNOLOGY*  
*UTKAL UNIVERSITY*  
*BHUBANESWAR*

**Name:**

- Gagan Bihari Nityananda Chainy, DOB - 8<sup>th</sup> May, 1950 (Noamundi, India)

**Address & telephone Numbers**

- Apt. No. 603, Sudarshan Towers, Saheed Nagar, Bhubaneswar 751007, Orissa  
Phone (R) – (0674) 2585713; Mobile 09337116660, email: <chainyg@gmail.com>.  
Village address: Garai Sashan, P.O. Lathanga, Distirict Jagatsinghpur.Odisha.

**Present-position**

- Visiting Professor Honorary, Department of Biotechnology, Utkal University, Bhubaneswar, India.

**Past-position**

- Lecturer (Adhoc) in Post-Graduate Department of Zoology, Utkal University, Bhubaneswar from 15<sup>th</sup> December 1972-14<sup>th</sup> June,1973.
- Lecturer in Department of Zoology, Banaras Hindu University, 1977-1978.
- Lecturer in Post-Graduate Department of Zoology, Utkal University, Bhubaneswar, 1979-1986.
- Senior Lecturer Post-Graduate Department of Zoology, Utkal University, 1986-1988.
- Reader, Post-Graduate Department of Zoology, Utkal University, 1988-1999
- Professor, Department of Zoology, Utkal University (1999-2010)
- Head, Department of Zoology(2002-2004 & 2005-2009), Utkal University.
- Head & Coordinator, Biotechnology Programe, Department of Biotechnology, Utkal University, Bhubaneswar 751 004 (2002-2010):
- Chairperson, State Environment Appraisal Committee, Govt. of Orissa, India (2009-2011)
- Consultant, Imgenex India Pvt. Ltd., E-5, KIITS post Office, Infocity, Bhubaneswar 751 0024. (2010 -2012).
- UGC Emeritus Fellow, Department of Biotechnology, Utkal University, Bhubaneswar 751004 (2013-2015).
- Visiting Professor , Department of Biotechnology, Utkal University, Bhubaneswar 751004 (2015- 2017).
- DBT Visiting Research Professor(NER) , Department of Biochemistry, NEHU,Shillong, Meghalaya (2017-2018).

**Academic Qualifications**

- 1970-B.Sc. (Hons; Ist Class, Distn.) Ravenshaw College; Utkal University
- 1972-M.Sc.(Zoology, Ist Class, Biochemistry Special paper) Banaras Hindu University
- 1977-Ph.D. (Zoology, Metabolic changes during Aging:) Banaras Hindu University under guidance of late Padmashree Prof. M.S.Kanungo, F.N.A

**Fellowships/Sholarships awarded**

- 1970 National Merit Scholarship, Govt. of India to study M.Sc.
- 1973 UGC Junior Research Fellowship
- 1975 UGC Senior Research Fellowship
- 1978 National Scholarship, Govt. of India for post-doctoral study in U.S.A
- 1983 French Government Scholarship
- 1995 Visiting Scientist, M.D. Anderson Cancer Centre, U.S.A.
- 1996 Visiting Scientist, M.D. Anderson Cancer Centre, U.S.A.
- 2012 Visiting Fellow, Ravenshaw University, Cuttack

**Awards**

- 1994 University Grants Commission Visiting Associateship, New Delhi.
- 1999 University Grants Commission Research Awardee, New Delhi

- 1999 Samanta Chandrasekhar Award by Odisha Bigyan Acedemy, Odisha
- 2010 Emeritus Scientist, CSIR, New Delhi (awarded but not availed)
- 2013 Emeritus Fellow, UGC, New Delhi (awarded and availed).
- 2017 Visiting Research Professor NER, Dept.of Biotechnology, Govt. of India.

#### ***Fellow***

- 1994 Fellow Zoological Society of India.
- 1999 Fellow of Bioved Society for Research, Allahabad, UP.
- 2003 Fellow National Academy of Sciences, Allahabad, India.
- 2009 Honorary Fellow Association of Biotechnology & Pharmacy, India.

#### ***Member of Professional Societies***

- Indian Society for Study of Reproduction & Fertility, India.
- Association of Gerontology, India.
- Zoological Society of India.
- Society for Free Radical Research, India.
- Orissa Environmental Society.
- Society for Reproductive Biology & Comparative Endocrinology, India
- Indian Society for Comparative Endocrinology, India
- Member Odisha Bigyan Academy, Odisha.

#### **Thesis guidance**

- **Ph.D** 20
- **M.Phil** 22

#### **Research Publications:**

##### **CITATION INDICES (GOOGLE SCHOLAR )**

- Citations 6135.
- h-index 38.
- i-index 85.
- Research papers 123
- Books 08
- Proceedings 19
- Science popular articles 18

**Teaching Experiences:**

- 30 years : Post-Graduate teaching in M.Sc Zoology (Physiology, Biochemistry, Molecular Biology, Genetic Engineering).
- 12 years Post-Graduate teaching in M.Sc. Biotechnology (Biochemistry, Molecular Biology and Genetic Engineering).

**Administrative:****Utkal University**

1. Head, Post-Graduate Department of Zoology 2002-04, 05-2009.
2. Head, Post-Graduate Department of Biotechnology, Utkal University 2002-2010
3. Coordinator, one year P.G. Diploma in Clinical Biochemistry and Medical Biotechnology, Utkal University 1997-2002.
4. Coordinator, M.Sc. Biotechnology Program, Utkal University and (2002-2010)
5. Member, Board of Studies in Zoology, Biotechnology & Life Sciences
6. Associate Advisor to Students Union.
7. Additional Superintendent to Hostel.
8. Member, Library Committee
9. Member Academic Council
10. Member of Senate
11. Member of Academic Committee
12. Member of Examination Committee
13. Member of Disciplinary Committee
14. Deputy Coordinator for DRS , UGC program of the Department
15. Member Sexual Harassment Committee

**Other Universities/ Institutes**

1. Member Board of Studies, Ravenshaw College, Cuttack,
2. Member, Board of Studies, +2 Council of Orissa
3. Member, Human Ethical Committee, Institute of Life Sciences, Bhubaneswar
4. Member Board of Studies , Banaras Hindu University, Varanasi
5. Member Board of Studies, School of Life Sciences, NEHU, Shillong.
6. Member Board of Studies, Central University, Koraput, Odisha.

**State**

1. Member, Vision Committee Biotechnology Board, Govt. of Orissa. 2004-05
2. Member Environmental Clearance Committee, Govt. of Orissa (2009)
3. Chairperson, State Level Appraisal Committee, Orissa 2009-2012
4. Member, State Biodiversity Board, Orissa 2009-2013
5. Member, State Wild-Life Board, 2009-2013
6. Member, Policy Advisory Vision Group on Biotechnology, Govt. of Odisha, 2016.

**National**

1. Member of Expert Advisory Committee of Commission for Scientific and Technical Terminology, Ministry of Human Resource Development Govt. of India on Glossary of Biotechnology (Odiya) .
2. Member of NCRT ,Develop 3 years integrated M. Sc. (life science) M.Ed Program. 2016.
3. Member of NCRT , Capacity Building Program for Masters Trainer in Biology at Higher Secondary state for Andaman and Nicobar Island 2016.

**Special lectures :**

1. Enzymes- Mechanism and Kinetics in Refresher Course Department of Zoology, Utkal University 1998.
2. Free Radicals in Biology, in Refresher Course , Department of Zoology. Banaras Hindu University, 2000
3. Human Genome Project in Refresher Course, Department of Zoology, Berhampur University, 2002
4. Recombinant DNA technology in Refresher Course, School of Life Sciences, Sambalpur University, 2005
5. Know your body” in Orientation Course, DDC, Utkal University, 2003
6. Endocrine glands of Body in Refresher Course for Home Science, DDC, Utkal University. 2003
7. Human Genome and its significance in Refresher Course, Department of Statistics, Utkal University 2004
8. Molecular basis of smell in Institute of Physics, 2004
9. Resource person in National workshop on Critical Appraisal and Hands on training in advanced Techniques in Endocrine Research, held in Department of Zoology, Aligarh Muslim University, Aligarh , January 16-30, 2005
10. Nobel prize in Chemistry, 2006, in Institute of Physics, 27<sup>th</sup> Nov., 2006
11. DNA technology in Forensic science at State Forensic Laboratory, Bhubaneswar 31<sup>st</sup> Dec, 2006.
12. Genomics in Seminar of P.G. Department of Botany, Dhenkanal College, Dhenkanal, 13<sup>th</sup> January, 2007.
13. DNA story in Annual function of P.G. Department of Zoology, Ravenshaw University, Cuttack, 14<sup>th</sup> January, 2007.
14. DNA story and Biotechnology -Resource person in the workshop organized by JCNS and Biotechnology Department of B.J.B. Autonomous College, Bhubaneswar on 17<sup>th</sup> January, 2007.
15. Women, Hormones and Behavior, lecture delivered in Refresher Course, Department of Women’s Studies, Utkal University, 2008.
16. Oxygen Paradox, Lecture delivered in Winter School, CIFA, Kausalyagung, Bhubaneswar, 2008
17. Brain and Oxidative stress Lecture delivered in Workshop on “Applications of Bioinformatics and Proteomic Techniques in Neurobiology” , Department of Zoology, Banaras Hindu University, Varanasi, September 07-21, 2009
18. Brain, Memory and Behavior Lecture delivered in Annual Seminar Function, Salepur College, Salepur Dec.13, 2009
19. Thyroid and Oxidative stress Lecture delivered in 3<sup>rd</sup> Annual Convention and International meeting of Association of Biotechnologists and Pharmacy held in Nagarjuna University, Guntur, 20-21 Dec,2009
20. Genome. Lecture delivered in DST INSPIRE Program, BITS MISRA, Ranchi. January 31, 2010.
21. Testicular Antioxidant Defence System: Invited lecture delivered in International Symposium on current trends in Endocrine & Reproductive Health and 29<sup>th</sup> Annual meeting of the Society for RBCE, held in Mysore University, Mysore, Karnataka., Feb., 10-12 , 2011.
22. Free Radicals in Biology and Medicine. Lecture in Refresher course organized by Department of Zoology, BHU 28<sup>th</sup> February, 2011.
23. The present Status of Genomics. Lecture in Refresher Course organized by Department of Pharmacy, Utkal University May 17, 2011.

24. Recombinant DNA technology. Lecture in refresher Course organized by the Department of Pharmacy, Utkal University, May 18,2011.
25. Environment and Stress. Lecturer delivered in Current Issues in Environment and Science Program. Organized by Orissa Environment Society, Bhubaneswar on November 4, 2012.
26. Genes and Genome. Lecture delivered in DST INSPIRE program, Govt. of India, held in Ravenshaw University, Nov. 18, 2012.
27. Environment and Stress. Lecture delivered in Refresher Course in Environmental Sciences, Utkal University, Bhubaneswar Feb., 8, 2013.
28. Environment and Behavior. Lecture delivered in Refresher course in Environmental Sciences, Utkal University, Feb. 14, 2013.
29. Human Brain. Guest Lecture delivered in Annual Seminar Function of Department of Zoology, B.J.B. College, Bhubaneswar, March 19,2013.
30. Biotechniques. Key note address to participants on workshop on Biotechniques and Instrumentation, organized by Botany Department, Khallikote College, Berhampur. March 23 2013.
31. Recombinant DNA Technology. Lecture delivered to participants +2 teachers in workshop organized by D.A.V. School, Chandrasekharpur, Bhubaneswar on 4<sup>th</sup> May 2013.
32. Transgenic animals and plants. Lecture delivered to participants +2 teachers in workshop organized by D.A.V. School, Chandrasekharpur, Bhubaneswar on 6<sup>th</sup> May 2013.
33. RNAi. Lecture delivered to participants +2 teachers in workshop organized by D.A.V. School, Chandrasekharpur, Bhubaneswar on 9<sup>th</sup> May 2013.
34. Enzymes: Lecture delivered in Refresher Course in Life Sciences, Sambalpur University,Burla. August 16, 2013.
35. Genome. Lecture delivered in Refresher Course in Life Sciences, Sambalpur University, Burla. August17, 2013.
36. Antioxidant defences AND Fish Health. Lecture delivered in Winter School on Advances in Molecular and Serological Tools in Fish Disease Diagnosis in CIFA, Bhubaneswar, November 18,2013.
37. Modulation of methylation pattern of rat catalase gene by thyroid hormone(s). Current Trends in Life Sciences Reserch and Challenge a head: National Seminar organized by School of Life Sciences, Sambalpur University, Sambalpur, 28<sup>th</sup> Feb., 2014 to 2<sup>nd</sup> April, 2014.
38. Down regulation of hepatic catalase gene in PTU-induced hypothyroid rats is due to promoter methylation. National Academy of Sciences, India meeting held at Jodhpur from 20-23 December, 2014 at Jodhpur University, Rajasthan.
39. Mysterious Human Brain. Lecture delivered in Annual Science Day, Adashpur College, 2014
40. Invited Lecture in NIT, Rourkela 2015
41. Invited Lecture Department Zoology, Basic Science College, OUAT (2015).
42. Nucleic Acid: Structure and Function. Regional Institute of Education,Bhubaneswar 2016.
43. Human Brain.Refresher course in Zoology, Department of Zoology, Utkal Univ. 2017.
44. How to study a protein? Basic approach. In UGC sponsored skill develioment program in Department of Biotechnology, Utkal Univ., Bhubaneswar. 28<sup>th</sup> March 2017.
45. "DNA: Yesterday,Toady and Tomorrow"Invited Distingushed lecture in Berhampur University 28<sup>th</sup> January, 2023.
46. "DNA: Past,Present and Future"Refresher course in Biotechnology, Department of Biotechnology, Utkal Univ. Feb, 14, 2023

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**WORKSHOP/SYMPOSIUM/REFRESHER COURSES CONDUCTED**

1. Course co-ordinator for Introductory Course for Computer Application in Teaching & Research. Utkal University, 16 May, 1966 to 30 May, 1966.
2. National Seminar on Advances in Endocrine Research and its relevance, Department of Zoology, Utkal University, 24<sup>th</sup>-27<sup>th</sup> March, 1988. Secretary.
3. One day Workshop on instrumentation for State Fishery workers, Feb., 2000.
4. National Seminar on Role of Free Radicals in Biology & Health, 23-24<sup>th</sup> March, 2001. Convener-cum-Organizing Secretary.
5. Coordinator Refresher Course in Biotechnology, Utkal University, 2010.

**RESEARCH (34 yrs)****A. Research Experience**

1. Ph.D : Metabolic changes during Aging Department of Zoology, Banaras Hindu University, Varanasi under guidance of late Prof. M.S. Kanungo, FNA. (1973-1977).
2. Post-doctoral student, Department of Biochemistry and Obst. & Gynecology, University of Miami, USA (1978-1979).
3. Visiting scientist, INSERM, Clamart, Paris (1983-1984).
4. Visiting Scientist, M.D. Anderson Cancer Centre, Houston, USA (1995 for 03 months).
5. Visiting Scientist, M.D. Anderson Cancer Centre, Houston, USA (1996 for 03 months).
6. Independent research (1979 onwards).

**B. Workshop attended:**

1. Genetics and Development at Mahabaleswar organized by Tata Institute of Fundamental Research, Bombay and Biochemistry Department, Ahmad Nagar College, Puna (1975).
2. Ovarian Workshop at Miami. USA organized by Endocrine Society, USA.(1979).
3. Radioimmunoassay course at Bhaba Atomic Research Centre, Trombay, (1982).
4. Recent Trends in Contraceptive Research, Central Drug Research Institute, Lucknow. (1983).
5. Molecular Genetics workshop organized by Department of Atomic Energy, Govt. of India and Bose Institute, Calcutta.(1985).
6. Immunoenzyme assay and Western blotting organized by Department of Biotechnology, Govt. of India and Indian Institute of Science, Bangalore. (1986).
7. Computation for Biologists organized by Indian Chemical Biological Institute, Calcutta.(1987).
8. Cloning and transfer of gene constructs in fish embryo organized by Department of Biotechnology and National Institute of Immunology, New Delhi. (1989).
9. Human Resource Planning for Biotechnology , a Training Program organized by Department of Biotechnology, Government of India and Institute of Applied Manpower Research, New Delhi. (1995).
10. Biotechnology-Potentials in Orissa organized by Department of Science & technology, Govt. of Orissa sponsored by Department of Biotechnology, Govt. of India. (2005).
11. Vermi-Technology organized by MAMATA ,NGO supported by Department of Biotechnology, Govt. of India. (2006).

**C. Research and other Projects**

1. **Role of Prolactin in Reproduction of Male Musk Shrew**- funded by CSIR, New Delhi (0.52 lakhs, 1984-1987).
2. **Effects of Pesticides on enzymes of active oxygen metabolism on the testis of rat with special reference to sexual maturation and age**-funded by UGC Major Research Project, New Delhi (Rs.2.60 lakhs, 1992-1995)
3. **Seasonal variation in oxidative stress parameters of different tissues of toad** UGC Minor Research Project (Rs.0.11 lakhs, 1995-1996).
4. **Effect of aluminum on different tissues of chick**- UGC Minor Research Project (Rs.0.19 lakhs, 1997-1998).
5. **Involvement of thyroid hormones in oxygen metabolism of birds and mammals: A comparative study**- Funded by Department of Science & Technology, Govt. of India (Rs.13.65 lakhs, 1998-2000).
6. **One year P.G. Diploma Course in Clinical Biochemistry & Medical Biotechnology**, Department of Biotechnology, Govt. of India, New Delhi (Rs.42 lakhs, 1999-2002).
7. **Two year M.Sc. Biotechnology Program** , Department of Biotechnology, Govt. of India, New Delhi (Rs.77.86 lakhs, 2002-2007).
8. **Evaluation of oxidative damages, mitochondrial oxidant generation and antioxidant defenses in testes of rats during critical stages of maturation and their modulation by thyroid hormones**- Ind.Council of Medical Research, New Delhi ( Rs.7 lakhs, 2003-2006)
9. **Thyroid hormone induced oxygen metabolism in rat liver mitochondria and its modulation by various factors**- Department of Science and Technology, Govt. of India, New Delhi (Rs. 27.5 lakhs, 2004-2007)
10. **Biochemical and Molecular Studies on antioxidant defense system of the Mud Crab *Scylla serrata* , a commercially important species from Chilika lagoon of East Coast of India**, UGC Major Research Project, New Delhi (Rs. 6.84 lakhs, 2006-2009).
11. **Age related changes in the expression of antioxidant enzymes and apoptotic proteins in testis of neonatal hypothyroid rats** , Ind.Council of Medical Research, New Delhi ( Rs.10 lakhs, 2007-2010)
12. **Biomolecular and chemical basis of evaluation of *Rauwolfia serpentina* Q1C,30C in hypertension induced rat model**. AYUSH, Govt. of India (21 lakhs, 2009-2012)
13. **Effects of radiation from tailing ponds near Jadugoda Uranium mines on burrowing animals (rats)"**. Board of Nuclear Research Science, BARC, Mumbai (42 lakhs. 2009 Transferred after superannuation).

#### **D. Research Guidance:**

##### **(a). M.Phil Dissertation guided: (22)**

1. Effects of seasons and hormones on testicular cholesterol content of the musk shrew .(N.Mohanty, 1983).
2. Effect of estradiol on the testis and accessory reproductive organs of the musk shrew, *Suncus murinus* L. (J.Panigrahi, 1985).
3. Some properties and effect of endosulfan on glucose-6-phosphatase from liver microsomes of *Anabas testudineus* (Bloch). (S.K.Senapati, 1986).
4. Effect of estradiol and bromocriptine on rat testicular and prostatic acid phosphatase. (C.Swain, 1989).
5. Effects of estradiol and testosterone on testicular acid phosphatase activity of rat. (A.Sahoo, 1990).
6. Effect of aluminum on lipid peroxidation and glutathione content in chick brain. (R.K.Mohanty, 1991).
7. Seasonal variation in lipid peroxidation of various tissues of common Indian toad (*Bufo melanostictus*). (S. Nayak. 1992).

8. Lindane -induced lipid peroxidation in chick liver. (L. Samanta, 1993).
9. Effect of aluminum on hepatic antioxidant system of the female rat. (N.Rout, 1994).
10. Haematological studies in *Hemidactylus vivipiridus*. (M. Pattanaik, 1995). Testosterone-induced change in rat testicular antioxidant system. (S.Samantarai, 1996).
11. A comparative study of superoxide dismutase, catalase and lipid peroxidation in gills and accessory respiratory organs of *Anabas testudineus* and *Heteropneustes fossilis* ( P. Parida, 1997).
12. A comparative study of superoxide dismutase, catalase and lipid peroxidation in liver and muscle of *Anabas testudineus* and *Heteropneustes fossilis* (A.Vimla, 1997).
13. Antioxidant properties of pippali (J.Sen, 1998).
14. Antioxidant properties of kababchini (J.Kanungo, 1998).
15. Effect of thyroid hormones on lipid peroxidation and catalase activity of rat heart mitochondria (G.Zaidi, 1999).
16.  $\gamma$ -HCH-induced changes in some oxidative parameters of mice tissues (M.Polei).
17. Modulation of the activities of rat heart superoxide dismutase and catalase antioxidant enzymes by thyroid hormone (S.Chattopadhyaya, 2000).
18. Purification and characterization of catalase antibody (P.Samanta, 2001)
19. A comparative account of mitochondrial respiration in vertebrates and its regulation by T3 in vitro in a model system: rat hepatic mitochondria (B. Paital, 2005).
20. Effect of mercury on plasmid (pBSIISK): in vitro and in vivo study (D.Asish Rathod, 2006).
21. Studies on effect of mercuric acetate on posies plasmid by spectrophotometric, spectrofluorimetric and electrophoretic analyses ( M. Priyadarshani (2007).
22. Isoenzyme profile of suproxide dismutase in different tissues of mud crab *Scylla serrata* ( P.K.Palai, 2007).

**(b).Ph.D Dissertation guided:**

1. Reproduction in musk shrew (*Suncus murinus*) (N.Mohanty 1989).
2. Activities of ATPases in the brain and the testis of the rat during development and effect of hexachlorocyclohexane (A. Roy, 1997).
3. Effect of pesticide on rat : A behavioral and biochemical study ( M. Swain,1999).
4. Effect of hexachlorocyclohexane on rat testicular enzymes of active oxygen metabolism as a function of age. (L. Samanta, 1999).
5. Antioxidant defence system of rat cerebral hemisphere during aging: Effect of hexachlorocyclohexane(A. Sahoo, 1999).
6. Effect of aluminum on enzymes of active oxygen metabolism in avian tissue (C. Swain, 1999).
7. Cytological assessment among occupational workers engaged in saw (wood-cutting) mills.(P. Parida; 2001).
8. Antioxidant defence system in giant prawn; *M.rosenbergii* (J. Dandapat, 2002).
9. Hormonal regulation of free radical metabolism in brain and testis of rats (K. Das, 2004).
10. Hormonal regulation of free radical metabolism in testis of rats (S. Choudhury, 2005).
11. Tandem repeat polymorphisim in deciphering genetic variation population: special reference to Y-STR polymorphisim (S. Sahoo, 2006).
12. Modulation of rat testicular antioxidant defence system by experimentally induced hypo- and hyperthyroidism (D. Sahoo, 2007).
13. Changes in oxidative stress and antioxidant defence parameters of liver of rats by thyroid hormone (S. Chattopadhyaya, 2008).
14. Antioxidant defnce system in *Perna Viridis* : Effect of pollutants (K. Jena, 2009).

15. Modulation of hepatic antioxidant gene expression in hypo-and hyperthyroid rats by vitamin E and curcumin. (U. Subudhi, 2010).
16. Regulation and expression of antioxidant defenses by thyroid hormone in kidney of rats (S. Jena, 2012).
17. Antioxidant defence system and its regulation in crabs, *Scylla seratta* (B. R. Paital, 2012).
18. Study of integrating biophysical electrical impedance with biochemical markers for pelvic inflammation diagnosis (S. Das, 2013).
19. Antioxidant defence system in germ cells and their regulation by thyroid hormone (S. Sahoo, 2016).
20. Effects of dietary seaweed supplementation on experimentally induced oxidative stress in rat (Priyadarshani Routray, 2018).
21. Modulation of methylation of CpG in promoter region of catalase gene: Effect of thyroid hormone (S. Bunkar, 2018).

#### **D. Collaborative Research Work**

1. Role of antioxidant defence system in rat brain with particular reference to behavior in collaboration with Dr. S.Patra, Reader, Department of Psychology, Utkal University. (1995-98).
2. Characterization of antioxidant system in prawn in collaboration with Dr. K.J. Rao, Senior Scientist, Central Institute of Freshwater Aquaculture (Central Inland Fresh water Aquaculture, Indian Council for Agricultural Council), Bhubaneswar (97-2002).
3. DNA databank of population of Orissa with Dr. V.K. Kasyap (Central Forensic Research Laboratory, Govt. of India, Calcutta. 97-07).
4. Characterization of antioxidant defence system in mussels of sea coast of Orissa and its relation to environmental pollution with Dr. X.Verlekar (National Institute of Oceanography, Goa, India 2002-2009).
5. DNA template driven self assembly of HgTE nano particles with Prof. S.Sahu, and Dr. Sikha (Institute of Physics, Bhubaneswar).
6. Effect of thyroid hormone on testis ( Prof. M.M.Mishro, National Institute for Health & Family Planning, New Delhi).
7. Gene polymorphism in human population (Prof. R.M.K. Bamezai, School of Life Sciences, JNU, New Delhi).

**E. Research Publications:**

<b>Publications of G.B.N.Chainy, Ph.D.</b>		
<i>Former Professor &amp; Head; Department of Zoology and</i>		
<i>Founder Head; Department of Biotechnology, Utkal University, Bhubaneswar 751004</i>		
<b>Citation Indices</b>	<b>All</b>	<b>since 2018</b>
<b>Citations</b>	<b>6135</b>	<b>2346</b>
<b>h-index</b>	<b>38</b>	<b>28</b>
<b>i10-index</b>	<b>85</b>	<b>50</b>
1.	<b>Chainy, G.B.N &amp; Kanungo, M.S. (1976)</b> Sex and age dependant response of pyruvate kinase of brain of rats to estradiol and testosterone. <b>Biochem. Biophys. Res. Commun.72 :777-781 .</b>	
2.	Aggarwal, B.B., <b>Chainy, G.B.N.</b> et al (1976). Some observations on the effects of epinephrine on cholinesterase in the brain and muscle of some Indian fresh water fish. <b>Comp. Physiol. Ecol. 1: 63-66.</b>	
3.	<b>Chainy, G.B.N. &amp; Kanungo, M.S. (1978)</b> Induction and properties of pyruvate kinase of the cerebral hemisphere of rats of various ages. <b>J. Neurochem. 30: 419-427.</b>	
4.	<b>Chainy, G.B.N. &amp; Kanungo, M.S. (1978)</b> Effects of estradiol and testosterone on the activity of pyruvate kinase of the cardiac and skeletal muscle of rats as a function of age and sex. <b>Biochim. Biophys. Acta 540: 65-77.</b>	
5.	Clark, M.R., <b>Chainy, G.B.N.</b> , Marsh, J.M. & LeMaire, W.J. (1979) Stimulation of prostaglandin synthetase activity in rat granulosa cells by gonadotrophin in vivo. <b>Prostaglandins 17: 967-974.</b>	
6.	Clark, M.R., <b>Chainy, G.B.N.</b> , Mrash, J.M. & LeMaire, W.J. (1980) Characterization of rat ovarian prostaglandin synthetase. <b>Adv. Prost. Thromb. Res. 8: 1357-1359.</b>	
7.	Mohanty, A.K, <b>Chainy, G.B.N.</b> & Naik, D.R. (1982) Electrophoretic comparision of protein patterns of pars distalis of the pituitary glands of three species of Indian amphibians. <b>Life Sci. Adv. 1: 283-285.</b>	
8.	Mohanty N. & <b>Chainy, G.B.N.</b> (1985) Follicular growth in the musk shrew. Quantitative analysis and characterization of follicles. <b>J. Zool. Soc., India 37: 45-52.</b>	
9.	Mohanty, N. & <b>Chainy, G.B.N. (1986)</b> Failure of hCG in depleting testicular cholesterol content of the musk shrew, a nonscrotal mammal in different seasons. <b>Ind. J. Expt. Biol. 24: 791-792.</b>	
10.	Mohanty, N. & <b>Chainy, G.B.N.</b> (1987) Effects of aminoglutethemide phosphate	

on adrenal glands of the musk shrew, <i>Suncus murinus</i> L.. <b>Curr. Sci.</b> 56: 435-437.		
11. Gougeon, A. & <b>Chainy, G.B.N.</b> (1987) Morphometric studies of small follicles in human ovaries of women at different ages. <b>J. Reprod. Fertl.</b> 81: 133-442.		
12. Mohanty, N. & <b>Chainy, G.B.N.</b> (1988) Effects of prolactin and bromocriptine on physiological status of the testis of the musk shrew, <i>Suncus murinus</i> L. <b>Andrologia</b> 20: 426-432.		
13. Mohanty, N. & <b>Chainy, G.B.N.</b> (1988) Seasonal and hormone-induced changes in the testis of the musk shrew ( <i>Suncus murinus</i> ). <b>Ind. J. Expt. Biol.</b> 26: 724-726.		
14. Mohanty, N. and <b>Chainy, G.B.N.</b> (1989) Testosterone propionate induced changes in testicular phosphatases of the musk shrew. <b>Andrologia</b> 21: 334-339.		
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