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Academic Editor: Journal of Aging Research

Brief Introduction

I am working as an Assistant Professor in the Department of Zoology at *University of Lucknow, India*.

I did my UG from Delhi University ***(College Topper),*** Master's from PGIMER Chandigarh ***(Institute Topper)*** and Ph.D. from AIIMS, New Delhi.

I received Newton-Bhabha fellowship to do part of my Ph.D. work at Manchester Metropolitan University, Manchester, U.K. Beside several other awards, I received young scientist award in 2021 by Microbiologists Society, India.

Currently, I am involved in Teaching and Research along with additional duties given to me from time to time by University and Government authorities.

Research Supervision

Ph.D.: 01 (Awarded); 03 (In Progress)
PG Dissertation: 18 (Awarded)

Research Profile:

Total Research Publication: ***22***
(Combined Impact factor: 87.6)

Research Projects

Total: 05
UGC-Startup Grant (10 L)
MHRD RUSA 2.0 (30 L & 50 L)
DHR (80 L)
UGC-DAE CRS (1.95 L)

Book Chapters: 08
Conference Papers: 16

Research Achievements So Far

Current Research Activity

My current research area is mainly focused on exploration of herbal formulations and active molecules effective against xenobiotic induced neurotoxicity model of cell line and interrogating the mechanistic understanding behind the therapeutic action.

Past Research Activity

- Using SPR technology, an antioxidant protein Sestrin was determined in the sera of Alzheimer's disease and Parkinson's disease patients as an early diagnostic protein marker.
- Interrogated the neuroprotective effect of clove against PD type neurotoxicity in SHSY-5Y cells and elucidated key molecular players involved.
- Studied the role of sestrin using Neural Stem Cells (NSCs) derived from induced pluripotent stem cells (iPSCs) of Alzheimer's disease to get better insights of their function under such condition.

Research Grants: 05; [**Total Amount Received: Rs. 171.95 Lakhs**]

1. Research Project Under UGC-DAE Collaborative Research Scheme (CRS) project entitled "Synthesis of Carbon Quantum Dots from Acorus calamus rhizome of Garhwal Himalayan range for investigation of potential Senotherapeutic activity" awarded by Department of Health Research, GOI. **(In Progress)**
2. Research Project Under Grant-In-Aid Scheme entitled "Identification of mitochondria-related proteins as plausible biomarkers and therapeutic targets in Alzheimer's disease" awarded by Department of Health Research, GOI. **Amount: Rs. 80 Lakh. (In Progress)**
3. Research and Innovation Project entitled "Evaluation of neuroprotective effect and its underlying molecular mechanism by Costus speciosus, a traditional medicinal plant of Udaipur district, Rajasthan" awarded by RUSA-MHRD, New Delhi. **Amount: Rs. 30 Lakh. (In Progress)**
4. Research and Innovation Project entitled "In-vitro and In-vivo screening of polyherbal formula (PHF-1) in age induced Alzheimer's disease in mice" awarded by RUSA-MHRD, New Delhi. **Amount: Rs. 50 Lakh. (In Progress)**
5. Startup Grant project entitled "To evaluate the neuroprotective effect of Hydroxychavicol, an active component of Piper betel leaves, using cell line model of neurotoxicity" awarded by UGC, Govt of India. **Amount: Rs. 10 Lakh. (Completed)**

Publications

Research Papers: 22 ***(Combined Impact factor: 87.6)***

1. **Nitish Rai**, Saurabh K. Sinha, Neeraj Kumar, Sharmistha Dey and Vivek Jain. Callistemon viminalis (Sol. ex Gaertn.) exhibiting anti-neuroblastoma activity via molecular interaction of ascorbic acid and 5-lipoxygenase: An in vitro and in silico study. Res. J. Biotech. 2025; 20(2):114-121.
2. Preet Jain, Meetu Jain, Chetan Sharma, Rahul N. Gaikwad, Amit Porwal, Diplina Barman, Rounik Talukdar, and **Nitish Rai**. Comparative efficacy of flapped versus flapless dental implant procedures: A meta-analysis. Int J Health Sci (Qassim). 2024; 18(4):58-69.
3. Namita Ashish Singh, **Nitish Rai**, Ashish Kumar Singh, Vidhi Jain, and Jagriti Narang. Paper based Microfluidic Devices for the Analysis of Various Pathogens from Diverse Samples. Current Analytical Chemistry. 2024; 20(6):367-382. **IMPACT FACTOR 1.7**
4. Rupali S. Prasad, Jun M. Kalita, **Nitish Rai**, Nikhil Y. Yenorkar, Suhas R. Dhaswadikar, Pravesh Sharma, Mahaveer Dhobi et al. "Antidiarrhoeal screening of Himalayan edible plant Begonia rubrovenia and its marker followed by its validation using computational analysis." Future Journal of Pharmaceutical Sciences (2024): 1-15. **IMPACT FACTOR 2.6**
5. Juhi Goyal, Preet Jain, Vivek Jain, Dibyajyoti Banerjee, Rajasri Bhattacharyya, Sharmistha Dey, Rambabu Sharma, **Nitish Rai (Corresponding Author)**. Melamine Exacerbates Neurotoxicity in D-Galactose-Induced Neuronal SH-SY5Y Cells. Journal of Aging Research (2023): 9. **IMPACT FACTOR 4.7**
6. Preet Jain, Meetu Jain, Md Ahsanul Haq, Ambika Singh Rathore, **Nitish Rai (Corresponding Author)**, Sudeshna Banerjee, Susmita Sinha, Santosh Kumar, Mainul Haque. Comparison of the flapped and flapless surgical implant procedure on gingival biotype: A prospective split-mouth study. Journal of Applied Pharmaceutical Science (2023): 207-214. **Indexed in Scopus [Q2]**
7. Rupali S Prasad, Rupesh V Chikhale, **Nitish Rai**, Natasha S Akojwar, Raksha A Purohit, Pravesh Sharma, Onkar Kulkarni, Damiki Laloo, Shailendra S Gurav, Prakash R Itankar, Satyendra K Prasad. PRutin from Begonia roxburghii modulates iNOS and Sep A activity in treatment of Shigella flexneri induced diarrhoea in rats: An in vitro, in vivo and computational analysis." Microbial Pathogenesis (2023): 106380. **IMPACT FACTOR- 3.8**
8. Vivek Jain, Saurabh K Sinha, Kajol Rustage, Ashutosh Pareek, Manish Srivastava, Mukesh K Meena, Anshul Shakya, Madan Mohan Gupta, **Nitish Rai**, Aaushi Pareek, Yashumati Ratan, Min Hua Chen, Satyendra Kumar Prasad, Ghulam Md Ashraf. Solasodine Containing

Solanum torvum L. Fruit Extract Prevents Chronic Constriction Injury-Induced Neuropathic Pain in Rats: In Silico and In Vivo Evidence of TRPV1 Receptor and Cytokine Inhibition. Molecular Neurobiology (2023). 1-17 **IMPACT FACTOR-5.1**

9. Rupali S Prasad, Nikhil Y Yenorkar, Suhas R Dhaswadikar, Saurabh K Sinha, **Nitish Rai**, Pravesh Sharma, Onkar Kulkarni, Neeraj Kumar, Mahaveer Dhobi, Damiki Laloo, Shailendra S Gurav, Prakash R Itankar, Satyendra K Prasad. A systematic antidiarrhoeal evaluation of a vegetable root Begonia roxburghii and its marker flavonoids against nonpathogenic and pathogenic diarrhoea. Food Bioscience 53 (2023). 102672 **IMPACT FACTOR-5.2**

10. Abhinay Kumar Singh, Masroor Anwar, Rashmita Pradhan, Mohd Suhail Ashar, **Nitish Rai,** and Sharmistha Dey. Surface plasmon resonance based-optical biosensor Emerging diagnostic tool for early detection of diseases. Journal of Biophotonics. (2023) e20220038017 **IMPACT FACTOR- 2.8**

11. **Nitish Rai**, Sheemona Chowdhary, Deepak Kumar, Rajasri Bhattacharyya, and Dibyajyoti Banerjee. Molecular docking analysis of melamine with nuclear factor erythroid 2-related factor 2 and succinate dehydrogenase. Bioinformation 18, no. 8 (2022) 718. **IMPACT FACTOR-1.9**

12. Rathore, Rinu, and **Nitish Rai.** Pharmacological action and underlying molecular mechanism of Callistemon A genus of promising medicinal herbs. Phytomedicine. 99 (2022) 154013 **IMPACT FACTOR- 7.9**

13. **Nitish Rai (Corresponding Author),** Sharmistha Dey, 2020, Protective response of Sestrin under stressful conditions in aging, Ageing Research Reviews, 64, 101186. **IMPACT FACTOR- 13.1**

14. **Nitish Rai**, Ashish Datt Upadhyay, Vinay Goyal, Sadanand Dwivedi, A.B. Dey, Sharmistha Dey, 2020, Sestrin2 as serum protein marker and potential therapeutic target for Parkinson's Disease, The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences, 75(4), 690-695. **IMPACT FACTOR- 5.1**

15. **Nitish Rai**, G Venugopalan, Rashmita Pradhan, Akash Ambastha, Upadhyay Ashish Datt, Sadanand Dwivedi, Aparajit B. Dey, Sharmistha Dey, 2018, Exploration of Novel Anti-Oxidant Protein Sestrin in Frailty Syndrome in Elderly. Aging Dis., 9(2), 220-227. **IMPACT FACTOR- 7.4**

16. Shashank Shekhar, Saroj Kumar Yadav, **Nitish Rai,** Rahul Kumar, Yudhishthir Yadav, Manjari Tripathi, Aparajit B. Dey, Sharmistha Dey, 2018, 5-LOX in Alzheimer's Disease: Potential Serum Marker and In Vitro Evidences for Rescue of Neurotoxicity by Its Inhibitor YWCS, Mol Neurobiol., 55 (4), 2754-2762. **IMPACT FACTOR- 5.1**

17. **Nitish Rai (Corresponding Author)** and Dibyajyoti Banerjee, 2017, Melamine adulteration of food: detection by point-of-care testing tool. Current Science. 112. **IMPACT FACTOR- 1.0**

18. **Nitish Rai**, Rahul Kumar, Md Anzarul Haque, Md Imtaiyaz Hassan, Sharmistha Dey, 2017, A Study of Recombinant Human Sestrin 1 and Sestrin 2 Proteins Produced in a Prokaryotic System. Molecular Biology (Mosk.), 51, 473-482. **IMPACT FACTOR- 1.2**

19. Rashmita Pradhan, Rahul Kumar, Shashank Shekhar, **Nitish Rai**, Aakash Ambashtha, Joyita Banerjee, Mona Pathak, Sadanand Dwivedi, Sharmistha Dey, Aparajit B. Dey, 2017, Longevity and healthy ageing genes FOXO3A and SIRT3: Serum protein marker and new roadmap to burst oxidative stress by Withania somnifera, Exp Gerontol., 95, 9-15. **IMPACT FACTOR- 3.9**
20. **Nitish Rai**, Rahul Kumar, Gaurav Rajesh Desai, G. Venugopalan, Shashank Shekhar, Prasun Chatterjee, Manjari Tripathi, Ashish Datt Upadhyay, Sadanand Dwivedi, Aparajit B. Dey, Sharmistha Dey, 2016, Relative alterations in Blood-Based Levels of sestrin in Alzheimer's Disease and Mild Cognitive Impairment Patients, Journal of Alzheimer's disease, 54, 1147-1155. **IMPACT FACTOR- 4.0**
21. Shashank Shekhar, Rahul Kumar, **Nitish Rai (Co-first author),** Vijay Kumar, Kusum Singh, Ashish Datt Upadhyay, Manjari Tripathi, Sadanand Dwivedi, Aparajit B. Dey and Sharmistha Dey, 2016, Estimation of Tau and Phosphorylated Tau 181 in serum of Alzheimer's disease and Mild cognitive impairment patients, PloS One, 11, e0159099. **IMPACT FACTOR- 2.74**
22. Rahul Kumar, Abhay Kumar Singh, Manoj Kumar, Shashank Shekhar, **Nitish Rai**, Punit Kaur, Rajinder Parshad and Sharmistha Dey, 2016 Serum 5-LOX: A progressive protein marker for breast cancer and new approach for therapeutic target, Carcinogenesis, 37, 912-7. **IMPACT FACTOR- 4.7**
23. **Nitish Rai**, Dibyajyoti Banerjee, Rajasri Bhattacharyya, 2014, Urinary melamine: Proposed parameter of melamine adulteration of food. Nutrition. 30, 380–385. **IMPACT FACTOR- 3.639**

Book Chapters: 09

1. Girima Nagda, **Nitish Rai**, Jaya, Shakshi, Chhavi Bhalothia, Namita Ashish Singh (2024). Nanoparticles Synthesis Using Extremophilic Microbes and their Potential Agricultural Applications. In Extremophiles for Sustainable Agriculture and Soil Health Improvement (pp. 137-162). Cham: Springer Nature Switzerland.
2. Namita Ashish Singh, Avinash Marwal, Juhi Goyal, Nitish Rai **(Corresponding Author)**

(2024). Bioactive Molecules Derived from Extremophilic Fungi and Their Agro-Biotechnological Application. In Extremophiles for Sustainable Agriculture and Soil Health Improvement (pp. 137-162). Cham: Springer Nature Switzerland.

3. Juhi Goyal, Preet Jain, Priti Yadav, Priyank Upadhyay & **Nitish Rai (Corresponding Author)** (2024). Nanobiofungicides: Effective Tools for Control of Fungal Pathogens. In Microbial Biotechnology for Sustainable Agriculture Volume 2 (pp. 75-103). Singapore: Springer Nature Singapore.
4. **Nitish Rai (Corresponding Author)**, Namita Ashish Singh, Vivek Jain, Preet Jain, Alexander Choi & Saurabh K. Sinha. Introduction to Systems Biology. In: Joshi, S., Ray, R.R., Nag, M., Lahiri, D. (eds) Systems Biology Approaches: Prevention, Diagnosis, and Understanding Mechanisms of Complex Diseases. Springer, Singapore. https://doi.org/10.1007/978-981-99-9462-5_1
5. **Nitish Rai (Corresponding Author)**, Namita Ashish Singh, Juhi Goyal, Priyank Upadhayay & Vidhi Jain (2024). CRISPR-Cas and Its Applications in Food Production. In: Kumar, A., Arora, S., Ogita, S., Yau, YY., Mukherjee, K. (eds) Gene Editing in Plants. Springer, Singapore. https://doi.org/10.1007/978-981-99-8529-6_13
6. Namita Ashish Singh, **Nitish Rai,** Jaya, & Shakshi. (2024). Novel Thermal and Nonthermal Processing of Dairy Products: A Multidisciplinary Approach. In: Prakash, A., Kuila, A. (eds) Nonthermal Food Processing, Safety, and Preservation. John Wiley & Sons, Inc. https://doi.org/10.1002/9781394186631.ch12
7. Sanhita Sarkar, Namita Ashish Singh, **Nitish Rai (Corresponding Author)**. Xerophilic Fungi: Physiology, Genetics and Biotechnology, In Extremophilic Fungi: Ecology, Physiology and Applications (pp. 253-270). Singapore: Springer Nature Singapore.
8. Namita Ashish Singh, **Nitish Rai (Corresponding Author)**, Avinash Marwal, 2021, Nanosensors for the Detection of Chemical Food Adulterants, In: Nanotoxicology and Nanoecotoxicology Vol. 2, (ed) Vineet Kumar, Praveen Guleria, Shivendu Ranjan, Nandita Dasgupta, Eric Lichtfouse, ISBN: 978-3-030-69492-0, Springer, Cham
9. Sharmistha Dey, **Nitish Rai**, Shashank Shekhar, Amrendra Pratap Singh, Vertica Agnihotri, 2019, Molecular Marker and Therapeutic Regimen for Neurodegenerative Diseases Models, In: Molecules and Mechanisms in Biogerontology, (ed) Pramod C. Rath, ISBN 978-981-13-3584-6, Springer, Singapore.

Invited Lectures: 07

1. Lecture on "An Account of Gut Microbiota and its Effect on Human Pathophysiology" organised by Microbiologist's society of India on 25th January 2021.
2. Career Counselling lecture in "Sookshma Alumni Webinar Series" organised by Department

of Microbiology, Swami Shraddhanand College, University of Delhi, Alipur, Delhi on 16th May 2020.

3. Invited talk on topic entitled "Syzigium aromaticum as Potential Plant-Based Therapeutics in Parkinson's Disease" on 3rd September, 2022 at Department of Botany, Mohanlal Sukhadia University, Udaipur (lndia).

4. Delivered Expert Lecture on the topic "Application of Electron Microscopes (SEM and TEM) for Visualization of Dairy and Food Microbes" on 20.10.2023 in a Hands-on Training on "Advance Microscopic Techniques Used in Dairy and Food Industry" organized by Department of Dairy and Food Microbiology, College of Dairy and Food Technology, under IDP-NAHEP project, Maharana Pratap University of Agriculture and Technology, Udaipur.

5. Invited talk entitled "Syzygium aromaticum as Potential Phytotherapeutics in Parkinson's Disease" on 5th March, 2024 at Department of Botany, T.D. College, Jaunpur (lndia).

6. Invited talk in Alumni Lecture series in Swami Shraddhanand College, University of Delhi on 23.01.2025 via online mode.

Conference Papers

S.No.	*Author(s)*	*Year*	*Title*	*Name and Place of Conference*
1.	**Nitish Rai**	*2025*	Aggravation of aging-type toxicity upon Melamine exposure in D-galactose model of neuronal SH-SY5Y	14th NABS - NATIONAL CONFERENCE – 2025, AC & RI, Kudumiyanmalai, Tamil Nadu, India
2.	**Nitish Rai**	*2024*	Exposure to melamine exacerbates D-galactose-induced aging-type toxicity in neuronal SH-SY5Y cells.	Alzheimer's Association International Conference
3.	**Nitish Rai** and Sharmistha Dey	*2023*	Syzigium aromaticum may protect against paraquat mediated toxicity via p53 and Sestrin2 modulation	Alzheimer's Association International Conference® (AAIC®), 2023 (Online and Amsterdam, Netherlands)
4.	**Nitish Rai** and Sharmistha Dey	*2022*	Anti-aging role of Sestrin at cellular and molecular level	Association of Gerontology (India) BHU, Varanasi
5.	**Nitish Rai** and Sharmistha Dey	*2022*	*Clove mediated Rescue in parkinson's disease involves modulation of p53 and Sestrin2 in SHSY5Y cell line model*	Movement Disorder society and Madrid, Spain
6.	**Nitish Rai**, Sheemona Chowdhary, Deepak Kumar, Rajasri Bhattacharyya, Dibyajyoti Banerjee	*2022*	*In-silico study of oxidative stress and mitochondrial dysfunction induced by melamine and potential approach to develop POCT analysis*	North Zone ACBICON 2022, PGIMER, Chandigarh

7.	**Nitish Rai** and Sharmistha Dey	*2021*	Sestrin as a key inducer of protective response against aging stressors	Alzheimer's Association International Conference® (AAIC®), 2021 (Online and Denver, USA)
8.	**Nitish Rai** and Sharmistha Dey	*2021*	Sestrins: An important player in Aging associated stressors	Keystone eSymposia meeting, Neurodegenerative Diseases: Genes, Mechanisms and Therapeutics
9.	**Nitish Rai** and Sharmistha Dey	*2020*	Serum Sestrin2 level in Parkinson's disease patients: A potential therapeutic target.	AAIC Neuroscience Next
10.	**Nitish Rai**, A.B. Dey, Sharmistha Dey	2019	Novel Antioxidant Molecules in the pathophysiology of Alzheimer's disease: Diagnostic and Therapeutic Prospects.	19th Biennial Conference of AGI, New Delhi.
11.	**Nitish Rai**, A.B. Dey, Sharmistha Dey	2019	Identification of elevated levels of sestrin in early MCI and Alzheimer's disease: An opportunity for a potential marker.	IBRO-APRC Associate school of Neuroscience
12.	**Nitish Rai**, Rinu Rathore, A.B. Dey, and Sharmistha Dey	2019	Novel Protein in Parkinson's Disease: Evaluation for a Plausible Serum Diagnostic Marker and Therapeutics	VII- Rajasthan Science Congress (RSC)
13.	**Nitish Rai**, Amrendra Pratap Singh, Shashank Shekhar, Yudhishthir Yadav, A.B. Dey, Sharmistha Dey.	2017	Sestrin levels in patients diagnosed with Mild Cognitive Impairment and Alzheimer's disease: A potential marker.	Alzheimer's Association International Conference® (AAIC®), 2017. London, UK.
14.	**Nitish Rai**, Shashank Shekhar, Amrendra Pratap Singh, A. B. Deyand Sharmistha	2016	Relative Alterations in Blood-Based Levels of Sestrin in Alzheimer's Disease and Mild Cognitive Impairment Patients.	18th Biennial Conference of AGI and 14th Annual conference of Indian Academy of Geriatrics as Indian Ageing Congress
15.	**Nitish Rai**, Shashank Shekhar, Vijay Kumar, Manjari Tripathi, A.B. Dey and Sharmistha Dey	2015	Serum SIRT1 protein as a plausible marker for early detection of Alzheimer's Disease.	International Congress on Gerontology And Geriatric Medicine 2015, New Delhi, India

16.	Sharmistha Dey, **Nitish Rai,** Amrendra Pratap Singh, Shashank Shekhar, Aparajit B. Dey	2017	Evaluation of Serum Sestrin protein in Parkinson's disease: a plausible diagnostic marker	International Congress of Parkinson's Disease And Movement Disorders, Vancouver, BC.
17.	Sharmistha Dey, Amrendra Pratap Singh, **Nitish Rai**, Shashank Shekhar,	2017	Serum Sirtuins as Novel Protein Markers for Frailty	International Association of Gerontology and Geriatrics (***IAGG***) World Congress, San Francisco,

Educational Degrees

Degree	**University/Institution**	**Year**	**Percentage of marks**
Ph.D.	All India Institute of Medical Science (AIIMS), New Delhi	2019	N/A
MASTER'S DEGREE (M.Sc.) **(Achieved Top Position)**	Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh	2013	68% ***(Institute Topper)***
BACHELOR'S DEGREE (B.Sc.) **(Achieved Top Position)**	University of Delhi, Delhi	2011	74 % ***(College Topper)***

Awards/Recognitions

S. No.	**Award Name**	**Awarding Organization**	**Awarded Work**
1.	Prof. T. S. Sadasivan Memorial NABS-Best Research Paper Award 2025	National Academy of Biological Sciences, India	Research
2.	Young scientist Award 2021	Microbiologists Society, India (MSI)	Research
3.	Newton-Bhabha PhD placement award	Department of Science and Technology, India and British Council, UK	Research Internship
4.	AV Tilak Prize (Biogerontology)	Association of Gerontology and Indian Academy of Geriatrics, India.	Oral Presentation
5.	First Prize (Gold medal)	Gericon 2017, 15th annual Conference of Indian academy of	Oral Presentation

		geriatrics.	
6.	Best Young Scientist Award	Novel Research Academy	Academics
7.	Young achiever award	Institute of Scholars	Research
8.	Award	3rd International congress on Gerontology and Geriatric medicine (ICGGM) 2015.	Oral Presentation
9.	Award	ACBICON- 40th National Conference of Association of Clinical Biochemists of India, 2013, New Delhi, India.	Poster Presentation

Fellowships

1.	Innovation in Science Pursuit for Inspired Research (INSPIRE) - Junior Research Fellowship	Department of Science and Technology, Government of India.	Research
2.	NET- Junior Research Fellowship	Council of Scientific and Industrial Research (CSIR) – University grant commission Government of India.	Research
3.	NET- Junior Research Fellowship	Indian Council of Medical Research (ICMR), Government of India.	Research
4.	Qualified with an All India Rank of 225 (98.25 percentile).	Graduate Aptitude Test in Engineering (Life Science) 2013, Government of India	Research

Teaching

Development of Innovative Pedagogy

Pictionary, an innovative teaching method- The method was introduced by me in the class of M.Sc. Biotechnology and Microbiology at Department of Biotechnology, MLSU, Udaipur. In this method, the students were divided into groups and a student from the group is asked to draw a picture based on a concept provided by coordinator. The other students of the group were asked to guess the correct answer based on the picture drawn by the student. Based on a google form based survey of my class, the majority of students agreed that the method was engaging, interactive, joyful, collaborative and helpful in clearing key concepts.

Organization of conferences and webinars

- Organized **(Organizing Secretary)** National Conference on "Recent Trends in Biotechnology" under the auspices of SERB-DST, GOI & National Academy of Sciences, India – Rajasthan Chapter on March 3rd – 4th 2023.

- Organized **(Coordinator) IPR awareness Program** under the auspices of NIPAM on April 8th 2022.

- Organized **(Organizing Secretary)** National Webinar on "Role of Technology in Higher Education" on 10th August 2021 to celebrate 1 year of NEP 2020 at Department of Biotechnology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan.

- Organized **(Organizing Secretary)** National Webinar on "COVID-19: Key Perspective on Food & Neurosciences" on 19th May 2021 under Anandam Program, Department of Biotechnology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan.

- Organized **(Organizing Secretary)** International Webinar on "Career Prospects in Life sciences: Let's explore" on June 7th 2020 under Department of Biotechnology & Department of Microbiology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan. More than 350 participants took part in the event from all across the globe.

- Organized **(Department Council)** online E Quiz series on COVID-19 for Spreading Awareness: Level One (Basics) on 20th May 2020 organized by Department of Biotechnology & Microbiology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan.

- Organized **(Organizing Committee Member)** in VII- Rajasthan Science Congress (RSC) (A National Conference on Current Scenario in Science and Technology: Facing the Challenges and Creating Opportunities) held during October 14-16, 2019 at MLSU, Udaipur.

- Organized **(Department Council)** International Virtual Conference on COVID-19: Myths and Facts on 14th July 2021 at Department of Biotechnology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan.

- Organized **(Department Council)** International Virtual Conference on Recent Trends and Innovations in Microbiology on 15th July 2021 at Department of Biotechnology & Microbiology, University College of Science (UCoS), MLSU, Udaipur, Rajasthan.

Reviewer of prestigious journal

Dr. Nitish is a reviewer of various research articles for prestigious international journals including Ageing Research Reviews and Journal of Aging Research.

Contribution to Society

Under the Anandam programme at MLSU, Dr. Rai has mentored a group of UG and PG students for working towards society. Together they have planted 200 plant saplings in the campus and around the city. Also, his group have installed 50 bird feeders in the campus which were handmade by the students using waste bottle and material. Further, He has facilitated the

placement of several PG students in the COVID-19 testing lab around the city who worked tirelessly throughout the second wave of COVID-19.

Professional Membership

- The National Academy of Sciences (NASI), India (Life Member)
- Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART)
- International Parkinson and Movement Disorder Society (MDS)
- Indian Academy of Neurosciences (IAN) (Life Member)
- Association of Gerontology India (Life Member)
- National Academy of Biological Sciences (Life Member)
- Indian Science Congress (Life Member)