

# ANNUAL REPORT

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the past to today”

## ANNUAL REPORT 2081/082

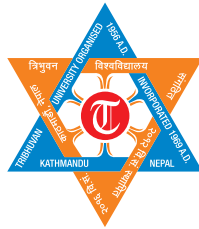


**Tribhuvan University**  
**Institute of Science and Technology**  
**Central Department of Microbiology**  
(Estd. 14 November 1990)

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# ANNUAL REPORT

FY 2081/082 (2024/025)



## Central Department of Microbiology

Tribhuvan University

Kirtipur, Kathmandu, Nepal

Estd. 14 November 1990

November 2025

## Report Preparation Team

Dr. Dev Raj Joshi, Reader and Head of Department

Dr. Anjana Singh, Professor

Dr. Dwij Raj Bhatta, Professor

Dr. Prakash Ghimire, Professor

Dr. Megha Raj Banjara, Reader

Dr. Shyam Prakash Dumre, Reader

Dr. Reshma Tuladhar, Reader

Dr. Shaila Basnyat, Lecturer

Dr. Supriya Sharma, Lecturer

Ms. Purnima Baidya, Lecturer

Dr. Manita Aryal, Lecturer

Mr. Nabaraj Adhikari, Lecturer

Mr. Upendra Thapa Shrestha, Lecturer

Mr. Sanjib Adhikari, Lecturer

Mr. Binod Khanal, Chief Office Assistant

Ms. Bimala Pandey, Chief Account Assistant

## Executive Summary

This annual report summarizes activities conducted and progress made by the Central Department of Microbiology (CDMi), TU in the fiscal year 2081/2082 (16 July 2024 to 16 July 2025). CDMi currently has 4 Professors, 5 Readers, and 7 Lecturers. Most of the faculty members have PhD, while others are in the process of completing PhD. The department is supported by 10 administrative staff and 4 laboratory support staff for daily operations and laboratory management. In this fiscal year, 30 students were enrolled in the first semester of the M.Sc. program. The proportion of female students in the M.Sc. program has increased each year over the last three years. In the Ph.D. Microbiology program, a total of 9 students (6 male and 3 female) were enrolled in the academic year 2081/082. The department purchased some laboratory equipment to strengthen its facilities in Microbiology and Molecular biology. The faculty members are involved in national and international activities including academic and consultancy activities. Prof. Dr. Binod Lekhak was appointed as the Registrar of Far Western University, Mahendranagar, Kanchanpur and Reader Dr. Komal Raj Rijal was appointed as the Assistant Dean of the Institute of Science and Technology, TU, Kirtipur. In FY 2081/082, 3 PhD and 25 M.Sc. students graduated in Microbiology from the department. The faculty members collectively published more than 45 research articles in international journals and more than 15 research articles in national journals in this fiscal year.

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## Background

The Central Department of Microbiology (CDMi), established in 1990 under the Institute of Science and Technology (IoST) at Tribhuvan University (TU), provides advanced microbiology education in the country. The department offers Master's and Ph.D. degree programs in Microbiology. Since its inception, the department has produced more than 662 master's graduates and 19 doctoral graduates. It is staffed with highly qualified, skilled, and competitive faculty members with specializations in various microbiology fields, including medical, public health, biotechnology, environmental, food, and agriculture microbiology. In addition to these expert faculty, the department also has strong support staff in laboratories, administration, and finance to assist with the daily operations of teaching, learning, and research activities.

The M.Sc. Microbiology program at TU is carefully designed and regularly updated to incorporate recent global developments in science and technology. For the first 15 years, the program followed an annual system, which was revised in 2013 to adopt a semester-based system. From its inception, the program has included a mandatory dissertation based on original research, which students complete under the supervision of faculty member. This provides students with an opportunity to learn research methodology and to document their research findings in the form of a thesis or through publications in peer-reviewed journals. Recently, there has been an increasing trend of publishing articles in national and international journals. The department encourages faculty members to pursue research and apply for grants whenever opportunities arise. Since its inception, the department has conducted research and activities in diverse areas, including food, water and environment, as well as medical and public health issues, especially in vector-borne diseases, vaccine studies, laboratory capacity assessment and strengthening, training in quality assurance systems, malaria microscopy, climate change and its impact on vector-borne and waterborne diseases. Additionally, the department has carried out studies on antimicrobial use and resistance in the country, in collaboration with various government bodies and UN agencies.

The department has its own building with teaching and demonstration rooms, as well as a teaching laboratory equipped with essential instruments required for

daily student experiments. Internet access and a small departmental library are additional resources to support teaching and research activities.

This annual report summarizes the activities conducted and progress achieved by the department during the fiscal year 2081/2082 (July 16, 2024, to July 16, 2025). It includes an overview of the department's human resource capacity, such as academic progress, pass rate trends, academic programs, educational methods, physical infrastructure status, faculty activities, graduates of the fiscal year, and departmental publications in both national and international journals.

## Human Resource Capacity of the Department

Central Department of Microbiology has 4 Professors, 5 Reader, and 7 Lecturers. Twelve faculties have PhD degree, while the others are in the process of completion of their PhD degree.

**Table 1: Teaching faculties in the department, FY 2081/082**

Particulars	Total	Male	Female	PhD	Non-PhD
Professors	4	3	1	4	-
Readers	5	4	1	5	-
Lecturers	7	3	4	3	4*

\*have enrolled the Ph D

**Table 2: Name of Teaching Faculties of CDMi, FY 2081/082**

S.N.	Name	Position	Email address
1	Dr. Dev Raj Joshi	Reader and Head	dev.joshi@cdmi.tu.edu.np
2	Dr. Anjana Singh	Professor	anjana.singh@cdmi.tu.edu.np
3	Dr. Dwij Raj Bhatta	Professor	dwij.bhatta@cdmi.tu.edu.np
4	Dr. Prakash Ghimire	Professor	prakash.ghimire@cdmi.tu.edu.np
5	Dr. Binod Lekhak*	Professor	binod.lekhak@cdmi.tu.edu.np
6	Dr. Megha Raj Banjara	Reader	megha.banjara@cdmi.tu.edu.np
7	Dr. Komal Raj Rijal*	Reader	komal.rijal@cdmi.tu.edu.np
8	Dr. Shyam Prakash Dumre	Reader	shyam.dumre@cdmi.tu.edu.np
9	Dr. Reshma Tuladhar	Reader	reshma.tuladhar@cdmi.tu.edu.np
10	Dr. Shaila Basnyat	Lecturer	shaila.basnet@cdmi.tu.edu.np
11	Dr. Supriya Sharma	Lecturer	supriya.sharma@cdmi.tu.edu.np
12	Ms. Purnima Baidya	Lecturer	purnima.baidya@cdmi.tu.edu.np
13	Dr. Manita Aryal	Lecturer	manita.aryal@cdmi.tu.edu.np
14	Mr. Nabaraj Adhikari	Lecturer	naba.adhikari@cdmi.tu.edu.np
15	Mr. Upendra Thapa Shrestha	Lecturer	upendra.thapashrestha@cdmi.tu.edu.np
16	Mr. Sanjib Adhikari <sup>#</sup>	Lecturer	sanjib.adhikari@cdmi.tu.edu.np

\*Prof. Dr. Binod Lekhak: Appointed as Registrar of Far Western University, Mahendranagar, Kanchanpur

\*Reader Dr. Komal Raj Rijal: Appointed as the Assistant Dean of Institute of Science and Technology, TU, Kirtipur,

#Lecturer Sanjib Adhikari: PhD study leave.

The department is supported by ten administrative staff who manage its administrative functions and four laboratory support staff to assist in laboratory.

**Table 3: Administrative and laboratory staff in the department, FY 2081/082**

Particulars	Total	Male	Female
Officer level	2	1	1
Non-officer level	4	1	3
Laboratory support staff	4	4	-

**Table 4: Name of supporting staff of CDMi**

S.N.	Name	Position	Email address
1	Mr. Binod Khanal	Chief Office Assistant	binod.khanal@cdmi.tu.edu.np
2	Ms. Bimala Pandey	Chief Account Assistant	bimala.pandey@cdp.tu.edu.np
3	Mr. Madhukar Thapa	Senior Lab Boy	
4	Mr. Hikmat Lal Shrestha	Senior Lab Boy	
5	Mr. Diwakar Thapa	Senior Lab Boy	
6	Mr. Ramesh Khadka	Senior Lab Boy	
7	Mr. Akal Man Maharjan	Office Helper	
8	Ms. Shova KC	Office Helper	
9	Ms. Nisha Tamang	Office Helper (Contract)	
10	Ms. Pabitra Dewala	Cleaning Staff (Contract)	

## Academic Enrollment

### Student Enrolment Trend

Each academic year, the department enrolls 30 students in the first semester of the M.Sc. program. In subsequent semesters, few students discontinue. The proportion of female students in the M.Sc. program has consistently been higher each year than that of male students, and their percentage increased each year over the last three years. In the academic year 2079/2080, 24 female and 6 male students enrolled. In 2080/ 2081, 18 female and 12 male students enrolled. For the Ph.D. microbiology program, in the academic year 2080/081, 3 males and 1 female students enrolled. In 2081/82, 24 female and 6 male students enrolled in the M.Sc. Microbiology first

semester, with 2 students later dropping out. In the same year, 9 students enrolled in the Ph.D. program.

**Table 5: Level wise enrolment trends over the past three years, disaggregated by gender and educationally disadvantaged groups**

Year	M.Sc.		Ph.D.	
	Male	Female	Male	Female
2079/080	6	24	3	1
2080/081	12	18	2	2
2081/082	8	22	6	3

### Pass rate trend

The pass rate trend showed that students pass rate exceeds ninety percent each year. The pass rate is relatively higher among female students than that of male students. In the academic year 2081/82, the M.Sc. first semester students achieved a hundred percent pass rate.

**Table 6: Pass rate trends of M.Sc. students over the last three years, disaggregated by gender**

Enrollment year	Semester	Total students		Passed students	
		Male	Female	Male	Female
2079/080	First	5	23	5	21
	Second	5	20	5	19
	Third	5	20	4	18
	Fourth	4	20	4	20
2080/081	First	10	18	7	16
	Second	10	17	7	15
	Third	9	16	-	-
	Fourth*	-	-	-	-
2081/082	First	7	21	7 (100%)	21 (100%)**
	Second*	7	21	-	-
	Third	-	-	-	-
	Fourth	-	-	-	-

\*\*Two students drop-out in the first semester and all students who appeared in the examination passed the first semester examination.

## Academic Programs

The CDMi offers courses for M.Sc. and Ph.D. programs in Microbiology. The Ph.D. program is designed as a three years, consisting of two semesters of coursework followed by dissertation research in the remaining semesters. The M.Sc. program

is a four semester structure spanning over two academic years. The first semester includes General Microbiology, Immunology, Microbial Genetics, and Microbial Biochemistry, along with corresponding practical courses. In the second semester, students select a specialization from four different disciplines within Microbiology. Among the four disciplines, the department currently offers specializations in Medical Microbiology and Public Health Microbiology. The fourth semester is entirely dedicated to skill development and research, which include internships and the dissertation.

## Educational Pedagogy

The department emphasizes close interaction between students and faculty. The classroom teaching combines theoretical instruction with practical laboratory sessions for the students to gain both conceptual understanding and hands-on experience. The classrooms are equipped with LCD projectors, overhead projectors, and whiteboards. Students also visit laboratories and industries, as an exposure to the real-world. They are encouraged to actively ask questions to deepen their understanding of the subject matter. Student performance is assessed through class assignments, project work, internal assessments, and final examinations. The fourth semester of the M.Sc. program is entirely focused on skill development and research, including internships and dissertation work.

## Physical Progress

The department purchased and maintained following equipment during the FY 2081/082:

1. Refrigerator (-20°C) (Supriya Sharma, OWSD project)
2. Orbital Shaking Incubator (Supriya Sharma, OWSD project)

The department has requested the Central Library to procure reference books for M.Sc. microbiology.

## Participation of Faculties in National/International Activities, FY 2081/082

1. Prof. Dr. Anjana Singh: Nominated as the Assembly Member (Pragya Sabha) (2025-2027) of Nepal Academy of Science and Technology (NAST)
2. Prof. Dr. Anjana Singh: Honored with Asta Matrika Honour for women. 8<sup>th</sup> March 2025
3. Prof. Dr. Anjana Singh: Delivered lecture as Invited Speaker. 'Environmental Hazards in Asia', The First International Conference, organized by Institute of Astronomy and Geophysics, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia August 12-15<sup>th</sup> 2024. Presentation title "Waste Water Hazards in Nepal"
4. Prof. Dr. Anjana Singh: Delivered lecture as invited Speaker. Resilience to High Impact Low Occurrence (HILO) disasters: A cross-sector comparison. National Academy of Sciences, Sri Lanka (NASSL), Sept 5-7<sup>th</sup>, 2024, Colombo, Sri Lanka. Presentation entitle 'Covid 19 Pandemic in Nepal'
5. Prof. Dr. Anjana Singh: Delivered lecture as Invited Speaker at AASSA-NAST PHL Symposium on "Digital Transformation in Healthcare and 6<sup>th</sup> AASSA General Assembly. Presentation entitled, Artificial Intelligence in Clinical Microbiology Diagnostic Testing, Manila, Philippines. 28-30<sup>th</sup> Oct 2024
6. Prof. Dr. Anjana Singh: Delivered lecture as Invited speaker at 4<sup>th</sup> International Science Communication Conference and 24<sup>th</sup> Indian Science Communication Conference (ISCC-2024) 19-20<sup>th</sup>, Dec 2024. Presentation entitled, 'Isolation of Lytic bacteriophage against *Salmonella typhi* for its use as potential alternative to antibiotics'. IIMT Engineering College, Meerut, online
7. Prof. Dr. Anjana Singh: Delivered lecture as Speaker on Phenotypic and Genotypic Identification of *Bacteroides fragilis* in SSIs from Eastern Nepal. International 3rd Conference of the Biotechnology Society of Nepal (ICBSN-2025) 24-25<sup>th</sup> Feb 2025. Theme "Biotechnological Innovations for Knowledge and Entrepreneurship" (BIKE). Hotel Manang, Kathmandu, Nepal
8. Prof. Dr. Anjana Singh: Delivered lecture as Speaker at Global Alliance Rapid Diagnostics (GARD) 2025. Save lives sustain health. Plastic Degrading *Pseudomonas* spp. from soil. 20-22<sup>th</sup> March 2025. Sponsored by the Department of Biosystems and Agricultural Engineering, Michigan State University, USA. In collaboration with Global Youth Advancement Network, Asian Studies Center, and Center for European, Russian, and Eurasian Studies at Michigan

State University, and De La Salle University, Philippines, virtual online

9. Prof. Dr. Anjana Singh: Panelists on "South Asian Regional Round table on Plastic Waste Management, Colombo, Sri Lanka, 7-8<sup>th</sup> April, 2025"
10. Prof. Dr. Anjana Singh: Panelists on "Kathmandu Conference on Plastic Waste Management 2025 (KCPWM) organized by Department of Applied Sciences and Chemical Engineering, TU, PLEASE Project implemented by Waste to Wealth: Plastic Free Himalayan Rivers to Advanced Functional Materials implemented by the South Asia Co-operative Environment Program (SACEP) and supported by UNOPS and World Bank, supported by the World Bank, 20-22<sup>th</sup> April, 2025, Kathmandu, Nepal
11. Prof. Dr. Prakash Ghimire: Reported on Vector Borne Disease Research and Training Centre- Nepal- Strategic Plan 2025-2050. Ministry of Health & Population, Federal Republic Government of Nepal, July 2025, with WHO-Nepal TA
12. Prof. Dr. Prakash Ghimire: Reported on the Institutional Capacity Assessment of Vector Borne Disease Research and Training Center, Ministry of Health & Population, Federal Republic Government of Nepal, May 2025, with WHO-Nepal TA
13. Prof. Dr. Prakash Ghimire: 37<sup>th</sup> GOARN Steering Committee Meeting. 29-30<sup>th</sup> April 2025. Kathmandu, Nepal. Organized at TU
14. Prof. Dr. Prakash Ghimire: GFATM/CCM Nepal Relected as a member representing academia and research constituency. Relected CCM Nepal Over site Committee Chairperson
15. Prof. Dr. Prakash Ghimire: Facilitated for in receiving Rapid Response Mobile Laboratory Nepal as a steering Committee Member of GOARN
16. Reader Dr. Megha Raj Banjara: Appointed as a RTAG member for malaria and kala-azar for World Health Organization South East Asia Regional Office (WHO-SEARO) from 2025 to 2027 on 17<sup>th</sup> October, 2024
17. Reader Dr. Megha Raj Banjara: Appointed as an expert member of "National Expert Review Committee for Measles, Rubella, and Congenital Rubella Syndrome" on 22<sup>nd</sup> May, 2025
18. Reader Dr. Megha Raj Banjara: As a RTAG member for malaria and kala-azar for World Health Organization South East Asia Regional Office (WHO-SEARO) from 2025 to 2027. WHO-SEARO invited him to participate in the meeting of the national program managers and the Regional Technical Advisory Group on kala-azar and malaria elimination in South-East Asia Region, Colombo, Sri

Lanka, 25-27<sup>th</sup> February, 2025

19. Reader Dr. Megha Raj Banjara: Presented on “Visceral Leishmaniasis (VL): Changing Epidemiology and Response to Control Strategies in Nepal” on 27<sup>th</sup> December, 2024 in 17<sup>th</sup> Asian Conference on Diarrheal Diseases and Nutrition (ASCODD) held at Soaltee Hotel, Kathmandu, Nepal
20. Reader Dr. Dev Raj Joshi: Invited for talk on “Burden of Viral and Antibiotic Resistant Bacteria in Water Environment, and Search for New Bioactive Active Compounds” One-day seminar: Research Center for Eco-Environmental Sciences, Beijing, China (21<sup>th</sup> April, 2025)
21. Reader Dr. Dev Raj Joshi: Invited for talk on “Environmental Dissemination of Antibiotic-Resistance Genes from Hospital, Municipal, and Industrial Sources in Nepal” at Workshop for Microbial Geochemical Cycling in the Trans-Himalayan and Polar Regions, Lanzhou University, Lanzhou, China (13-17<sup>th</sup> April, 2025)
22. Reader Dr. Dev Raj Joshi: Invited for Talk on “Environmental Resistome: A Silent Threat of Antibiotic Resistance” at International Conference on Role of Biotechnology in Biological Sciences: Striving for a Sustainable Future (RBBS-2025), Miranda House, University of Delhi, 6-8<sup>th</sup> February 2025
23. Reader Dr. Dev Raj Joshi: Plenary talk on “A Silent threat of antibiotic resistance: Biotechnological solutions”, 7th International Conference on Contemporary Developments at Biotech-Bioinformatics Interface (CDBBI), Gujarat Technological University, Ahmedabad, India 3-5<sup>th</sup> Feb 2025
24. Reader Dr. Dev Raj Joshi: Plenary talk on “Environmental Antibiotic Resistance: A Public Health Threat” at 4th Conference on Recent Trends in Science, Technology and Innovation, Pokhara University, Pokhara, Nepal, (20<sup>th</sup>, March, 2025)
25. Reader Dr. Dev Raj Joshi FAO Webinar: Speaker on “Antibiotic Resistance in the Water Environment of Kathmandu, Nepal”, FAO-led RENOFARM Initiative Knowledge dissemination dialogues on AMR. Webinar series (12<sup>th</sup> December, 2024)
26. Reader Dr. Dev Raj Joshi: Delivered speech on Invited talk on “Circulation of Antibiotic resistance in water environment: A potential public health threat” at First Workshop on Climate Change impact on Bacterial Community and Potential Pathogenic Risks in the Cryosphere of the Tibetan Plateau and Polar Regions, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, 17<sup>th</sup> November, 2024, Kathmandu, Nepal
27. Reader Dr. Dev Raj Joshi: Plenary talk on “Antibiotic Resistance in Wastewater

- and River: A potential Risk of Transmission” at First international conference on Microbes and Applied Biotechnology (ICMAB-2024), St. Peter’s, Institute of Higher Education and Research, Department of Biotechnology Government of India, Chennai, India, (6-8<sup>th</sup> November, 2024)
28. Reader Dr. Dev Raj Joshi: Invited for talk on “Environmental Antibiotic Resistance: An Alarming Risk to Public Health” Mustang Ancient DNA symposium, Max Plank Institute Germany / TU, Kathmandu, Nepal (4<sup>th</sup> March, 2024)
  29. Reader Dr. Reshma Tuladhar: Attended training in vector competence assays, mosquito dissection, and analysis conducted in the entomology and virology laboratories of the Institute of Tropical Medicine (ITM) in Antwerp, Belgium from 2<sup>nd</sup> January to 17<sup>th</sup> February 2025
  30. Reader Dr. Reshma Tuladhar: Presented an oral talk entitled "Bridging Borders Through Science: Global collaboration for Nepal's scientific progress" at the symposium "Science Diplomacy: Leveraging knowledge for sustainable solutions" on 17<sup>th</sup> September, 2024, organized by the Resources Himalaya Foundation commemorating National Science Day
  31. Reader Dr. Reshma Tuladhar: Delivered Oral presentation on "Potential Implication of Wastewater Based Surveillance for Pathogenic Viruses in Developing Country" at the ANSO Workshop on Climate Change on Bacterial Community and Potential Pathogenic Risks in the Cryosphere of the Tibetan Plateau and Polar Regions, Kathmandu, on 17<sup>th</sup> November, 2024
  32. Reader Dr. Reshma Tuladhar: Delivered oral presentation on "Can We Combat the Global Spread of Dengue?" at 17<sup>th</sup> Asian Conference on Diarrhoeal Disease and Nutrition (17<sup>th</sup> ASCODD), Kathmandu, Nepal, 8-10<sup>th</sup> December, 2024
  33. Reader Dr. Reshma Tuladhar: Invited talk on "Bacteriophage Therapy: A Renaissance in Antimicrobial Therapy" at the 4<sup>th</sup> conference on Recent Trends in Science, Technology and Innovation-2025, Pokhara, Nepal, on 21<sup>st</sup> March, 2025
  34. Reader Dr. Reshma Tuladhar: Expert trainer in the "Comprehensive Hands-on Training on Basic Molecular Biology"- workshop for faculty members, held on 25-26<sup>th</sup> July 2024 at the Central Campus of Technology, Hattisar, Dharan
  35. Lecturer Upendra Thapa Shrestha: Delivered oral presentation entitled on “Interlinkage of  $\beta$ -Lactam Resistant Bacterial Genes from Clinical, Environmental, and Poultry Isolates from Kathmandu; A Big Threat of AMR” at International Conference-2024 on Inclusive and Sustainable Development through Transformation, Innovation and Digitalization at Chitwan, Nepal 16-

17<sup>th</sup> November, 2024

36. Lecturer Upendra Thapa Shrestha: Attended the orientation program of Global One Health, a collaborative program jointly run by Institute of Tropical Medicine (ITM), Antwerp, Belgium and University of Pretoria (UP), South Africa hosted at the Faculty of Veterinary Science, University of Pretoria, as well as at the Hans Hoheisen Wildlife Research station, Hoedspruit, South Africa of the Department of Veterinary Tropical Diseases from 17 to 28<sup>th</sup> February, 2025

## Activities in the Department FY 2081/082

“Hands-on Training on Real-Time PCR for Scrub Typhus Diagnosis” was organized by the CDMi, TU, supported by the University Grants Commission, Nepal 5 to 9<sup>th</sup> June, 2025.

## Memorandum of Understanding (MoU) between CDMi, TU and Different Organizations

1. CDMi, TU, Kirtipur and Stupa Community Hospital (SCH), Chuchepati, Kathmandu, Nepal
2. CDMi, TU, Kirtipur and Tokha Chandeshwori Hospital, Kathmandu, Nepal
3. CDMi, TU, Kirtipur, and the Natural History Museum (NHM), Kathmandu, Nepal

## Students Graduated in FY 2081/082 and their Dissertations

### Doctor of Philosophy

1. Bindu Ghimire: Characterization of Antimicrobial Resistance in *Escherichia coli* Isolated from River Basin of Kathmandu Valley (Defense date: 11<sup>th</sup> September, 2024)  
Supervisor Prof. Dr. Prakash Ghimire, Co-Supervisor Reader Dr. Komal Raj Rijal
2. Pushpa Man Shrestha: Molecular characterization of antimicrobial resistant

*Pseudomonas aeruginosa* isolates at the Tertiary Care Hospital in Kathmandu" (Defense date: 24<sup>th</sup> January, 2025)

Supervisor Reader Dr. Komal Raj Rijal, Co-Supervisor Prof. Dr. Prakash Ghimire, Prof. Dr. Bhupendra Kumar Basnet

3. Hari Prasad Kattel: Genotyping of Hepatitis C Virus from patients attending a selected referral hospital in Nepal" (Defense date: 30<sup>th</sup> May, 2025)

Supervisor Reader Dr. Megha Raj Banjara, Co-Supervisor Prof. Dr. Ashild K Andreassen

### **Master of Science**

1. Ranjana Karki: Detection of selected viruses in different stages of treatment plant in Kathmandu Valley
2. Anish Parajuli: Isolation identification and antibiotic susceptibility testing of thermo tolerant *Escherichia coli* isolates from drinking water samples of consumers end in Kathmandu
3. Babita Neupane: Carbapenemase genes in *Klebsiella pneumoniae* isolates from Upendra Devkota Memorial National Institute of Neurological and Allied Sciences, Bansbari
4. Sujit Tandukar: Isolation of lytic bacteriophage against *Salmonella typhi* for its use as potential alternative to antibiotics
5. Aashma Khadka: Seropositivity of Hepatitis A and E virus in febrile and healthy cohort
6. Rajendra Sapkota: Bloodstream infections and leptospirosis in acute febrile patients at Sukraraj Tropical and Infectious Disease Hospital, Kathmandu, Nepal
7. Uma Devi Sharma: Water quality and sanitation status of a urban drinking water supply system in Nawalpur, Nepal
8. Suprabha Subedi: Molecular detection of dengue virus among febrile patients visiting Bharatpur Hospital, Chitwan, Nepal
9. Suman SK: Hypervirulent *Klebsiella pneumoniae* (HvKp) in sewage and river water of Kathmandu valley
10. Subita Shrestha: Prevalence of hypervirulent *Klebsiella pneumoniae* causing infection among patients visiting Nepal Korea Friendship Municipality Hospital
11. Umesh Raj Thapa: Antibiotic-phylogroups of *Escherichia coli* in surface water
12. Mamta Thapa: Opportunistic bacterial infection and its relation with HIV viral

- load and cotrimoxazole preventive therapy in people living with HIV
13. Sandhya Gurung: Antimicrobial activities and bacteriocin encoding genes detection in lactic acid bacteria isolated from fermented foods
  14. Soni Maharjan: Efficacy of zinc oxide nano particles against multidrug resistant hypervirulent *Klebsiella pneumoniae* from cardiac patients
  15. Bhashkar Mahatau: Comparative evaluation *Plasmodium vivax* malaria treatment with chloroquine and 7 days verses 14 days primaquine
  16. Srishti Sapkota: Occurrence of quinolone resistant qnr in *Salmonella enterica* isolates from raw chicken breast meat
  17. Sanam Maharjan: Detection of blaTEM and blaCTX-M gene in extended spectrum beta lactamase producing *Klebsiella pneumoniae* isolates
  18. Anjali Thakur: Efficacy of zinc oxide-nanoparticles against multidrug resistant *Escherichia coli* isolated from clinical specimens at a tertiary care hospital, Kathmandu
  19. Deepshikha: Vaginal discharge among reproductive aged females: a cross-sectional study
  20. Ila Shrestha: Evaluation of procalcitonin levels in microbial infection in a tertiary care hospital
  21. Kajol Jha: *Escherichia coli* phylogroups and intestinal parasitosis among children under five attending community hospital in Kathmandu Valley, Nepal

## Publications of Articles from the Department's Faculties, FY2081/082

### Scimago Ranking Journals

1. Shrestha S, Ghimire P, Kattel H, Sharma S, Banjara MR. Carbapenemase Producing Multi Drug Resistant *Klebsiella pneumoniae* from a Referral Hospital in Nepal. Journal of Nepal Health Research Council. (2025). 23 (02), 236-242. <https://doi.org/10.33314/jnhrc.v23i02.4667> (Q3)
2. Acharya J, Shrestha A, Rijal N, Jha R, Rijal KR, Sharma S, Banjara MR, Ghimire P. Multidrug resistant *Escherichia coli* isolated at National Public Health Laboratory, Nepal. Journal of Nepal Health Research Council. (2025). 23 (01), 31-41. <https://doi.org/10.33314/jnhrc.v23i01.5067> (Q3)
3. Dahal C, Adhikari S, Regmi RS, Sapkota S, Adhikari N, Sharma S, Banjara MR, Chalise BS, Ghimire P, Rijal KR. Detection of plasmid-mediated mcr-1

- gene in multidrug-resistant *Escherichia coli* from clinical specimens at a tertiary hospital in Nepal. *Infectious Diseases & Immunity*. (2025). 5 (02), 112-119. <https://mednexus.org/doi/pdf/10.1097/ID9.000000000000157> (Q3)
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## Book publication

1. Banjara MR, Ghimire L. *Basics of Pharmaceutical Microbiology*. First Edition, 2024. Samiksha Publication, Kathmandu.
2. Dhimal M, Joshi P, Banjara MR, Marashini BP, Khatri E, Poudel S, Sharma BK, Upadhyaya MK, Acharya J, Gyanwali P. *Situational assessment of antibiotics use and its resistance in Nepal*. Kathmandu: Nepal. (2024). Health Research

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**Book Chapter**

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2. Baidya P, Aryal M, Dahal V. Soil Microbes and Carbon Sequestration. In book: Soils and Sustainable Agriculture. M. Shaaban (eds). Soils and Sustainable Agriculture, Frontier Studies in Soil Science, Springer, Nature. (2025) [https://doi.org/10.1007/978-3-031-91114-9\\_8183](https://doi.org/10.1007/978-3-031-91114-9_8183)

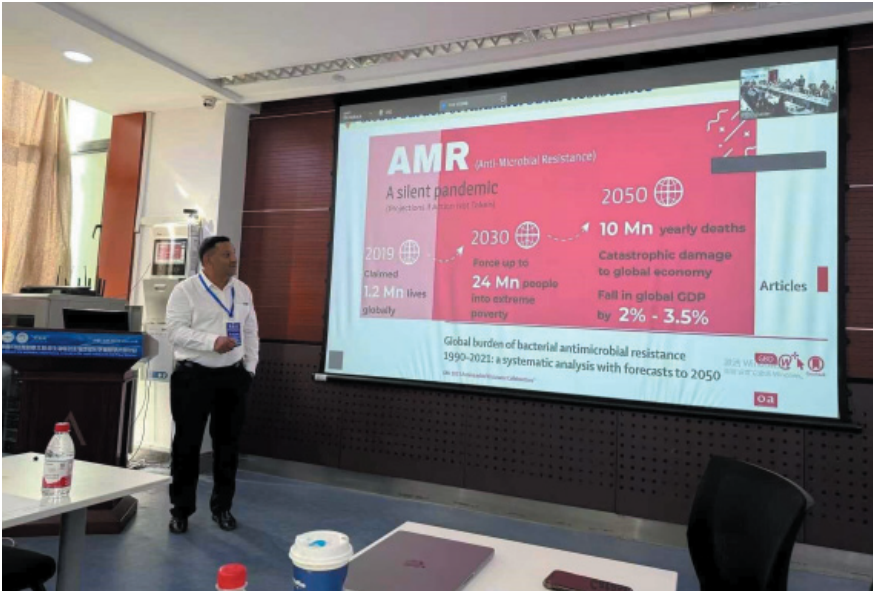
## Photographs



**Photograph: CDMi congratulates Prof. Dr. Binod Lekhak for being appointed as the Registrar of Far Western University, Mahendranagar, Kanchanpur and Reader Dr. Komal Raj Rijal for being appointed as the Assistant Dean of the Institute of Science and Technology, TU, Kirtipur**



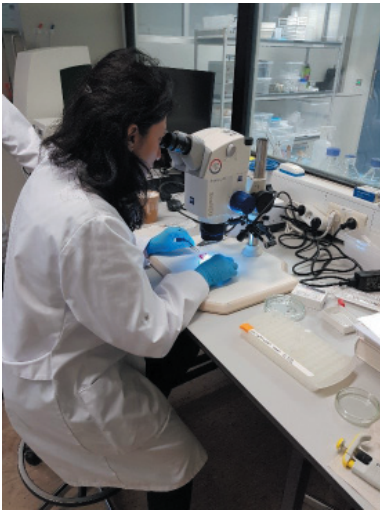
**Photograph: Participation of workshop by Reader Dr. Komal Raj Rijal and Reader Dr. Dev Raj Joshi in Lanzhou, China**



**Photograph: Presentation by Reader Dr. Dev Raj Joshi in Lanzhou, China on AMR**



**Photograph: Reader Dr. Megha Raj Banjara presenting on “Addressing new kala-azar (KA) cases in non-endemic areas and high child KA cases in Nepal” on February 26, 2025 in Colombo, Sri Lanka.**



Mid-gut dissection of mosquito

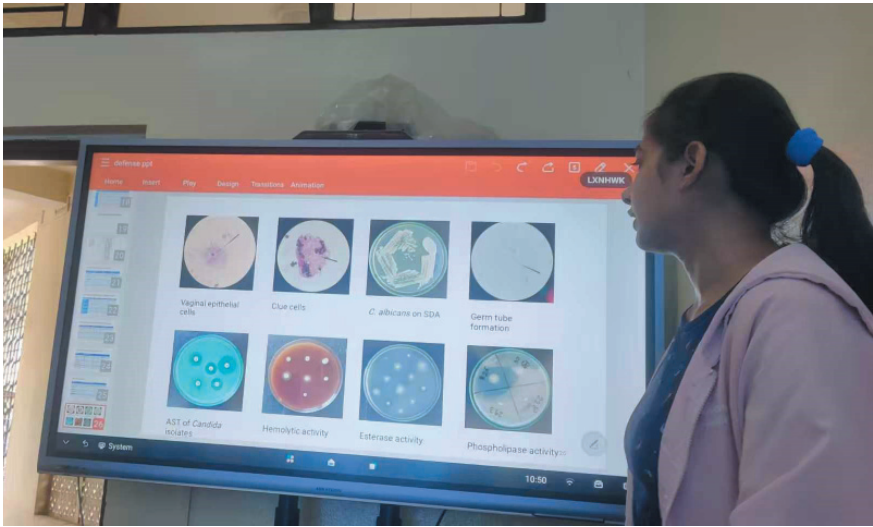


BSL III laboratory

**Photograph: Reader Dr. Reshma Tuladhar attending training in vector competence assays, mosquito dissection, and analysis conducted in the entomology and virology laboratories of the Institute of Tropical Medicine (ITM) in Antwerp, Belgium.**



**Photograph: Prof. Phaik Yeong Cheah delivered lecture on Adapting the 'Just Transitions' Approach to Mitigate Antimicrobial Resistance on 13<sup>th</sup> August 2025.**



**Photograph: Thesis defense presentation by Master's degree student.**



**Photograph: Inauguration of training organized by CDMi on “Real Time PCR for Scrub Typhus Diagnosis”**



**Photograph: Participants of training organized by CDMi on “Real Time PCR for Scrub Typhus Diagnosis”**

## ANNEX-I Faculties



**Dr. Dev Raj Joshi**  
Associate Professor & Head of Dept.



**Prof. Dr. Anjana Singh**  
Professor



**Prof. Dr. Dwij Raj Bhatta**  
Professor



**Prof. Dr. Prakash Ghimire**  
Professor



**Prof. Dr. Binod Lekhak**  
Professor



**Dr. Megha Raj Banjara**  
Associate Professor



**Dr. Komal Raj Rijal**  
Associate Professor



**Dr. Shyam Prakash Dumre**  
Associate Professor



**Dr. Reshma Tuladhar**  
Associate Professor



**Dr. Shaila Basnyat**  
Lecturer



**Dr. Supriya Sharma**  
Lecturer



**Ms. Purnima Baidya**  
Lecturer



**Dr. Manita Aryal**  
Lecturer



**Mr. Nabaraj Adhikari**  
Lecturer



**Mr. Upendra Thapa Shrestha**  
Lecturer



**Ms. Supriya Sharma**  
Lecturer

## ANNEX-II

### Staff



**Binod Khanal**  
Administrative Officer



**Bimala Pandey**  
Account Assistant



**Madhukar Thapa**  
Senior Lab Boy



**Diwakar Thapa**  
Senior Lab Boy



**Ramesh Khadka**  
Senior Lab Boy



**Hikmat Lal Shrestha**  
Senior Lab Boy



**Akal Man Maharjan**  
Office Assistant



**Shova KC**  
Office Helper



**Nisha Tamang**  
Office Helper



**Pabitra Deula**  
Office Helper

## ANNEX-III

त्रिभुवन विश्वविद्यालय  
विज्ञान तथा प्रविधि केन्द्रीय विभाग  
माइक्रोबायोलोजी केन्द्रीय विभाग  
आ.ब. २०८१।०८२ आषाढ महिना को वासलात

कोड	सम्पति विवरण	अनुसुचि	चालु वर्षसम्मको	गत वर्षसम्मको
०१	पूँजीगत सम्पति	१	३९,८४७,०६१।५६	३९,५८१,२५।५६
	जम्मा		३९,८४७,०६१।५६	३९,५८१,२५।५६
०३	चल सम्पति			
	लगानी (इक)	३		
	मौज्जात (इग)			
	असुल हुने आसामी तथा कृण (इख,घ)			
	पेशकी (इड)			
	जम्मा			
०४	बैंक मौज्जात	६	१५,९९४,९३१।०१	३,५६०,८९३।५१
	जम्मा		५५,८४१,९९२।५७	४३,१४२,१५१।०७
	जम्मा सम्पति			
	दायित्व विवरण			
२	त्रिभुवन विश्वविद्यालय कोष			
	त्रिभुवन विश्वविद्यालय केन्द्रिय कोष(उक)			
	पूँजीगत सम्पति कोष (उख)		३९,८४७,०६१।५६	३९,५८१,२५।५६
	विपेश कोष (उग)	७		
	जम्मा		३९,८४७,०६१।५६	३९,५८१,२५।५६
०५	घरौटी	२	६,३००।००	
	दायित्व	२क	१३,९४६,१३४।५०	१,६५५,८०९।१५
	जम्मा		१३,९५२,४३४।५०	१,६५५,८०९।१५
०६	केन्द्रीय कार्यालय यस वर्षको बचत	८	२,०४२,४९६।५१	१,९०५,०८४।३६
	गतवर्षको अन्वया		१९०५।०८४.३६	
	यस वर्षको खुद बाकी बचत		१३७४१२.१५	
	जम्मा दायित्व		५५,८४१,९९२।५७	४३,१४२,१५१।०७

### आर्थिक वर्ष २०८१।०८२ आम्दानी र खर्चको विवरण

आम्दानी विवरण		अनुसुचि	चालु वर्षको	गत वर्षको
	यस वर्षको आम्दानी	९	२३,३३२,४७४।९३	२६,२२३,०७५।२०
	निकास	८	२३,६६३,३४४।३६	२१,७३७,२३३।२६
	जम्मा आम्दानी (क)		४६,९९५,८१९।२९	४७,९६०,३०८।४६
	खर्च विवरण			
०५	यस वर्षको खर्च	५	४४,९५३,३२२।७८	४६,०५५,२२४।१०
	पेशकी	४		
	यस वर्षको बाँकी बचत केन्द्रिय कार्यालय सारको		२,०४२,४९६।५१	१,९०५,०८४।३६
	जम्मा खर्च (ख)		४६,९९५,८१९।२९	४७,९६०,३०८।४६

विमला पाण्डे  
लेखा प्रमुख

आ.ब. ०८१।०८२ को  
आर्थिक विवरण प्रमाणित गरेको  
०८/२१/०८

डा. देवराज जोशी  
विभागीय प्रमुख





**Tribhuvan University**  
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