

ANNUAL REPORT

“The experience from
the past to today”

ANNUAL REPORT 2078/079 (2021/022)



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

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FY 2078/079 (2021/022)



Central Department of Microbiology

Tribhuvan University

Kirtipur, Kathmandu, Nepal

(Estd. 14 November 1990)

August 2022

Report Preparation Team

Assoc. Prof. Dr. Komal Raj Rijal, Head of Department

Prof. Dr. Anjana Singh

Prof. Dr. Dwij Raj Bhatta

Prof. Dr. Prakash Ghimire

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Assoc. Prof. Dr. Megha Raj Banjara

Assoc. Prof. Dr. Dev Raj Joshi

Assoc. Prof. Dr. Shyam Prakash Dumre

Assoc. Prof. Dr. Reshma Tuladhar

Shaila Basnyat, Lecturer

Supriya Sharma, Lecturer

Sanjib Adhikari, Lecturer

Ramesh Ghimire, Main Account Assistant

Executive Summary

This annual report summarizes the different activities conducted and progress made by the Central Department of Microbiology, Tribhuvan University in the fiscal year 2078/2079 (17 July 2021 to 16 July 2022). Central Department of Microbiology has 4 Professors, 5 Associate Professors, and 7 Lecturers. Most of the faculties have PhD and others are in the process of completing PhD. The department is providing administrative services through Seven administrative staff. There are six laboratory support staff in the department. The department has 30 students enrolled in the first semester of M.Sc. program every year. The proportion of female students in the M.Sc. program increased every year in the last three years. In case of Ph.D. microbiology program in academic year 2078/079, 1 male and 2 female students were enrolled. Recently, Department is equipped with CCTV in the class room and laboratories, lab top computer for all faculties. The teachers of the department involved in national and international activities including academic and consultancy services. Three PhD students and 16 M.Sc. students from the department were graduated in microbiology in FY 2078/079. The faculties of the department published more than 40 research articles in the national and international journals in this fiscal year.

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Background

Central Department of Microbiology established in 1990 under Institute of Science and Technology (IOST) at Tribhuvan University is providing advanced level Microbiology education in the country. The department is offering Master's and Ph. D. Degree courses in Microbiology. Since its establishment, department is able to produce more than 574 Masters graduates and 13 doctoral level graduates. The department is enriched with highly qualified, skillful and competitive faculty members having specializations in various fields of microbiology: medical, public health, biotechnology, environmental, food and agriculture microbiology. In addition to the expert level faculties, department also has good support staff in the laboratory, administration and finance to support departments day to day operation of teaching learning and research activities.

Masters level Microbiology course of Tribhuvan University is designed and timely revised in such a way that it has been able to include global developments in science and technology in the curriculum. Initially for first 15 years, the Masters course was based on annual system, which was revised in 2013 to move on semester-based system. The course from the very beginning has made provision of a compulsory dissertation based on the short original research, which student is supposed to complete with supervision of the faculty supervisor; providing opportunity to learn research methodology and document research findings in the form of a thesis and or original research published in a peer reviewed journal. Recently, there is increasing trends of publishing the articles in national and international journals. The department also encourages

the faculties for research and grant applications, as and when available. The department from its beginning has been able to conduct, research in milk, meat, water, other foods, medical/health particularly in vector borne diseases, vaccines, laboratory capacity assessment and strengthening, conducting trainings in quality assurance systems, conducting training on malaria microscopy, climate change and its impact on vector borne and water borne diseases, assessment of antimicrobial use and resistance status in the country in collaboration with the different agencies of the Government and UN agencies.

The department has its own building with teaching/demonstration rooms and teaching laboratory equipped with basic instruments required for day-to-day student experimentations. Internet and small departmental library facilities are added assets in the department for research activities.

Human Resources

Central Department of Microbiology has 4 Professors, 5 Associate Professors, and 7 Lecturers. Nine faculties have PhD degree and most of others are in the process of completion of their PhD degree. Six faculties have already enrolled in the PhD program and they are in different stages of their research and completion process (Table 1). Details of the teaching faculties is given in Table 2 and Annex-I.

Table 1: Teaching faculties in the department, FY 2078/079

Particulars	Total	Male	Female	PhD	Non-PhD
Professors	4	3	1	4	-
Associate Professors	5	4	1	5	-
Lecturers	7	3	4	1	6
Teachers on leave	5	2	3	-	-

The department has been providing administrative and laboratory services through ten non-teaching staff. There are six administrative and four laboratory support staff in the department to ensure smooth running of the department (Table 3). Details on the administrative and laboratory support staff is given in Table 4.

Table 2. List of faculties and contact details, FY 2078/079

Name	Position	E-mail
Komal Raj Rijal, PhD	Associate Professor and Head	komal.rijal@cdmi.tu.edu.np
Anjana Singh , PhD	Professor	anjana.singh@cdmi.tu.edu.np
Dwij Raj Bhatta, PhD	Professor	dwij.bhatta@cdmi.tu.edu.np
Prakash Ghimire, PhD	Professor	prakash.ghimire@cdmi.tu.edu.np
Binod Lekhak, PhD	Professor	binod.lekhak@cdmi.tu.edu.np
Megha Raj Banjara, PhD	Associate Professor	megha.banjara@cdmi.tu.edu.np
Dev Raj Joshi, PhD	Associate Professor	dev.joshi@cdmi.tu.edu.np
Shyam Prakash Dumre, PhD	Associate Professor	shyam.dumre@cdmi.tu.edu.np
Reshma Tuladhar, PhD	Associate Professor	reshma.tuladhar@cdmi.tu.edu.np
Shaila Basnayat	Lecturer	shaila.basnet@cdmi.tu.edu.np
Supriya Sharma, PhD	Lecturer	supriya.sharma@cdmi.tu.edu.np
Purnima Baidya	Lecturer	purnima.baidya@cdmi.tu.edu.np
Manita Aryal	Lecturer	manita.aryal@cdmi.tu.edu.np
Nabaraj Adhikari	Lecturer	naba.adhikari@cdmi.tu.edu.np
Upendra Thapa Shrestha	Lecturer	upendra.shrestha@cdmi.tu.edu.np
Sanjib Adhikari	lecturer	sanjib.adhikari@cdmi.tu.edu.np

Table 3: Administrative and laboratory staff, FY 2078/079

Particulars	Total	Male	Female
Officer level	1		1
Non-officer level	5	3	2
Laboratory support staff	5	5	-

Table 4. List of Supporting Staffs of Central Department of Microbiology, FY 2078/079

Name	Position
Parmila Thakur	Account Officer
Raiman Shakya	Main Office Assistant
Ramesh Ghimire	Main Account Assistant
Madhukar Thapa	Senior Lab Boy
Ramesh Maharjan	Senior Lab Boy
Hikmat Lal Shrestha	Senior Lab Boy
Diwakar Thapa	Senior Lab Boy
Ramesh Khadka	Senior Lab Boy
Akal Man Maharjan	Office Helper
Pabitra Dewala	Cleaning staff

Academic Progress

Student enrolment trend

In every academic year, the department enrolled 30 students in the first semester of MSc program. In the following semesters, there was drop out of some students. The proportion of female students in the MSc program was more every year than male students. The proportion of female students in the MSc program increased every year in the last three years. In academic year 2078/079, 24 female and 6 male students have been enrolled in the MSc Microbiology first semester (Table 5).

For the PhD microbiology program, 2 male and 2 female PhD students were enrolled in academic year 2078/079 Table 5).

Table 5: Level wise enrolment trend analysis of the last three years disaggregated by female students

Year	MSc		PhD	
	Male	Female	Male	Female
2074/075	8	22	2	2
2075/076	7	23	2	3
2076/077	6	24	3	3
2077/078	7	23	2	2
2077/078*			1	2

*No enrollment in 2078

Pass rate trend

The pass rate trend analysis showed that the pass rate of the students is greater than ninety percent every year (Table 6). Pass

rate is relatively high in female students than the male students. The pass rate of students enrolled in AY 2077/078 in the MSc first semester was hundred percent.

Table 6: Pass rate trend analysis of the last three years of MSc students disaggregated by female

Enrollment year	Semester	Total students		Passed students	
		Male (%)	Female (%)	Male (%)	Female (%)
2074/075	First	8	22	7	21
		(26.66)	(73.33)	(87.5)	(95.45)
	Second	8	22	8	22
		(26.66)	(73.33)	(100.0)	(100.0)
Third	8	22	8	22	
	(26.66)	(73.33)	(100.0)	(100.0)	
	Fourth*	-	-	-	-
2075/076	First	7	23	7	21
		(23.33)	(76.67)	(100.0)	(100.0)#
	Second*	7	21	-	-
		(25.0)	(75.0)		
Third	8	22	8	22	
	(26.66)	(73.33)	(100.0)	(100.0)	
Fourth	8	20	8	20	
	(28.57)	(71.42)	(100)	(100)	
2076/077	First	7	23	6	22
		(23.33)	(76.67)	(85.7)	(95.6)
	Second*	7	23	7	21
		(23.33)	(76.67)	(100.0)	(100.0)
Third	7	21	7	21	
	(25.0)	(75.0)	(100)	(100)	
Fourth	8	22	8	22	
	(26.66)	(73.33)	(100.0)	(100.0)	

*Students enrollments of Academic year 2077 took place in 2078 because of COVID-19 pandemic. There was no enrollment in 2078 B.S.

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

Academic Programs

Central Department of Microbiology offers courses on MSc and PhD degree in Microbiology. The course of PhD Microbiology has been scheduled for three years with two semesters courses and other semesters dissertation. The course of MSc Microbiology has been divided into four semesters within two academic years. The first semester course covers the disciplines of General Microbiology, Immunology, Microbial Genetics, Microbial Biochemistry and practical on these courses. The second semester offers track selection among four different disciplines of Microbiology for specialization. Among four disciplines from second semester the department has offered Medical Microbiology and Public Health Microbiology. The fourth semester is completely skill development and research oriented that includes internships and dissertation.

Educational Pedagogy

There is close communication between the student and teacher. The class room teaching is divided into theoretical subject matter conducted in the class room as well as practical content delivered in the laboratory. The class rooms are equipped with LCD-projector, overhead projector, and white board. The students also visit laboratories and industries. The students are given enough opportunity to address their query in the subject matter. Class assignment, project work, internal assessment and final examination are conducted to evaluate the students. The fourth semester of MSc is completely skill development and research oriented that includes internships and dissertation.

Physical Progress

The department purchased and maintained the following equipment during the FY 2077/078:

- CCTV sets-1
- Binocular microscope: 20
- Laptop computer-12
- Advanced desktop computer-1
- Hot/cold water dispenser-1
- Waste disposal system-1

The department purchased few newer books required for the students. The department requested Central Library to purchase reference books for MSc microbiology.

Participation of Faculties in International Activities/ National Seminars/ Workshops, FY 2078/079

1. Prof. Dr. Prakash Ghimire was appointed as Team Leader- Social Welfare Council, Govt. of Nepal- for evaluation of health system, reproductive health, infectious diseases, antimicrobial resistance programs funded internationally and implemented in Nepal by local NGO's/INGO's- 2021-2023
2. Prof. Dr. Prakash Ghimire was nominated as Consultant- Evaluation of AMR surveillance Program implemented by Royal Govt of Bhutan and funded through UKDHSC- 2022
3. Prof. Dr. Prakash Ghimire was appointment as non-clinical judge (oral) for the medical research symposium (mrs) 2022, The Kulliyyah of Medicine, International Islamic University Malaysia (IIUM)
4. Prof. Dr. Ghimire was nominated as Chairperson - CCM Oversight Committee Country Coordination Mechanisms Nepal
5. Associate Professor Dr. Dev Raj Joshi, was participated in Dissemination meeting entitled "Dhaka Environmental Surveillance" Dissemination meeting/Workshop" at International Center for Diarrheal Disease Research (icddr), Dhaka, Bangladesh" from 12 Dec 2021 to 19 Dec 2021.
6. Associate Professor Dr. Shyam Prakash Dumre participated in International Conference organized by American Society of Microbiology, Washington DC, America from 9 June to 13

June, 2022 and presented poster entitled Genetic Diversity of Human Filarial Parasite *Wucherichia bancrofti* in Nepal.

7. Associate Professor Dr. Reshma Tuladhar participated in International consultative meeting on SARS COV-2 virus and COVID related issues at Tulanae University, and Virginia University, USA from 21 May to June 23, 2022.

News/Activities in the Department FY 2078/079

1. Associate Prof. Dr. Komal Raj Rijal, Head of the Department received Science award of 2078 from Nepal Academy of Science and Technology (NAST).
2. Prof. Dr. Anjana Singh and Prof. Dr. Dwij Raj Bhatta-felicitated with "Lifetime achievement award/दीर्घ सेवा पदक" by Tribhuvan University on 28 Kartik, 2078.
3. Professor Dr. Prakash Ghimire of the department received "जैविक प्रबिधि विज्ञान पुरस्कार २०७८" for his invaluable contributions in Science and Technology at National and International arena on the occasion of 9th National Science Day today awarded by the Ministry of Education, Science and Technology.
4. In coordination with Prof. Dr. Anjana Singh, TWAS Researcher/ Molecular Biologist UNESCO-TWAS EXPERT Dr. Suneeta Panicker delivered molecular biology training for

M. Sc/ PhD students during May 15th 2022 to 29th May 2022 at the department.

5. Central Department of Microbiology conducted three days Training Program on workshop on Students' performance Evaluation Scheme for B. Sc and M. Sc microbiology program during September 27-29, 2021 at the department with support of UCG-Nepal
6. Central Department of Microbiology conducted five days Training Program on Hands on Skill-based Training on application of Real-time PCR in infectious Diseases Diagnosis and Research during September 29- 04 October, 2021 at the department with support of UCG-Nepal
7. Associate Professor Dr. Binod lekhak was promoted to Professor and Dr. Reshma Tuladhar was promoted to Associate Professor from TU Service commission on November, 2021.
8. Ms. Supriya Shrama, Lecturer of the department was awarded Doctor of Philosophy in Microbiology from Central Department of Microbiology, Tribhuvan University. The title of her PhD thesis was " Molecular characterization of carriage and meningitis associated *Neisseria meningitidis* in Nepal on November, 2021.
9. Ms. Shaila Basnyat joined the department after PhD study leave on February, 2022.

10. Tribhuvan University Journal of Microbiology (TUJM)- Volume 8 (1) published on the occasion of Microbiology Day on 28 Kartik, 2078 (14 November, 2021).
11. Central Department of Microbiology intensified the remaining task of SSR preparation and submitted its first report to University Grants Commission (UGC-Nepal).

List of PhD Graduates (PhD in Microbiology) from the Department (as of Ashad 2079)

Name of the student	Title of PhD thesis	Supervisor	Award year
Bharat Mani Pokharel	Clonal analysis of <i>Hemophilus influenzae</i>	Prof. Dr. Achyut Prasad Sharma	1997
Basista Prasad Rijal	Study of Multi-drug resistance Tuberculosis in Nepal	Prof. Dr. Prakash Ghimire	2008
Bishnu Raj Tiwari	Immune status of HIV Patients in Nepal	Prof. Dr. Prakash Ghimire	2009
Keshab Parajuli	Standardization of PCR for the diagnosis of malaria in Nepal	Prof. Dr. Prakash Ghimire	2011
Ganesh Raj	Epidemiological study and	Prof. Dr.	2016

Pant	molecular characterization of Rabies virus in Nepal	Dwij Raj Bhatta	
Dharma Raj Bhatta	Phenotypic and molecular characterization of methicillin- Resistant <i>S. aureus</i> (MRSA)	Prof. Dr. Dwij Raj Bhatta	2018
Jagat Bahadur Khadka	Detection of Rifampicin Resistance Genes in Nepalese <i>Mycobacterium tuberculosis</i> isolates using Rapid molecular techniques	Prof. Dr. Prakash Ghimire	2018
Dhurba Kumar Khadka	Identification of mutations in rpoB gene (β -subunit of DNA-dependent RNA polymerase) in Rifampicin Resistant <i>Mycobacterium tuberculosis</i> among retreatment tuberculosis patients in Nepal	Prof. Dr. Anjana Singh	2019
Bishnu Prasad Upadhyaya	Molecular Epidemiology and antigenic characterization of Influenza virus circulating in Nepal	Assoc. Prof. Dr. Megha Raj Banjara	2020
Kirtika Gautam	Studies on extended spectrum β -lactamase (ESBL), producing <i>Salmonella</i> and <i>E.</i>	Prof. Dr. Dwij Raj Bhatta	2020

	<i>coli</i> isolates from clinical samples of Nepal		
Binod Lekhak	Screening and Characterization of bioactive <i>Actinomycetes</i> and their products from Nepal against multi-drug resistant bacteria and fungi	Prof. Dr. Dwij Raj Bhatta	2020
Dipendra Shrestha	Study of normal flora in different ethnic groups of Nepal and identification of the CCR5 Δ 32 HIV resistant allele.	Prof. Dr. Dwij Raj Bhatta	2021
Supriya Sharma	Molecular characterization carriage and meningitides associated <i>Neisseria meningitis</i> in Nepal.	Prof. Dr. Anjana Singh	2021

List of MSc Graduates (PhD in Microbiology) graduates in FY 2078/079 and their dissertations

1. Dipendra Shrestha: Study of normal flora in different ethnic groups of Nepal and identification of the CCR5 Δ 32 HIV resistant allele.

2. Supriya Sharma: Molecular characterization carriage and meningitides associated *Neisseria meningitis* in Nepal.

List of MSc Graduates (MSc in Microbiology) from the Department (FY 2078/079)

1. Bhimarjun Bhusal: Co-existence of *mcr-1* and *blaNDM-1* Genes in carbapenem resistant *Escherichia coli* isolates from clinical specimens.
2. Sarala Nhemhaphuki: Evaluation of water quality and detection of *blaKPC* and *blaKPC-2* genes in carbapenemase producing *E. coli* and *K. pneumoniae* of the Bagmati River.
3. Sandesh Dhakal: Prevalance of oral candidiasis among HIV infected ART Naïve Patients attending Sukraraj Tropical and Infectious Diseases Hospital Teku, Kathmandu
4. Samjhana Rai Sunuwar: Genotypic Detection of CTX-M Type Extended Spectrum Gram –negative bacterial isolates causing Urinary Tract Infection.
5. Divya Maharjan: Antioxidant, antimicrobial and wound healing activity of formulated Herbal Cream.
6. Samikshy Sharma: Screening of antimicrobial resistant Biomarker (NDM-1, *mcr-1*, and MexB) among multidrug resistant *Pseudomonas aeruginosa*.
7. Christina Khadka: Detection of Class-1 Integron in ESBL, MBL and AmpC B-lactamase Producing *Pseudomonas aeruginosa*.

8. Kusal Sitoula: Correlation of molecular profile of metal resistant and antibiotic resistant bacteria from Bagmati River.
9. Manita Shyaula: Characterization of thermostable cellulase from *Bacillus licheniformis* isolated from soil.
10. Nirmala Joshi: Molecular detection of blaKPC Gene in Carbapenemase producing *Klebsiella pneumoniae* isolates from clinical specimens.
11. Shrijana Bista: Relevance of ISAbal-linked OXA carbapenemase Genes to Carbapenem Resistance among clinical isolates of *Acinetobacter baumannii*.
12. Kalpana Ghimire: Pap Gene in multi-Drug Resistant *Escherichia coli* isolates from clinical specimens and its correlation with biofilm formation.
13. Muna Kumari Pokharel: Detection of coliforms and characterization of antimicrobial resistance in coliforms isolated from water samples of Kathmandu valley.
14. Binita Baral: Molecular Detection of NDM-1 and VIM-2 gene among metallo-Beta-lactamase producing clinical isolates of *Escherichia coli* and *Klebsiella pneumoniae* .
15. Raman Shrestha: Molecular detection of aac(6) aph(2'') gene in *Staphylococcus aureus* isolates from clinical specimens.
16. Anu Shrestha: Screening of Actinomycetes as Novel antibiotic producer, plastic degrader and assessment of its potentiality.

Publications from the Department, FY 2077/078

1. Dhungel S, Rijal KR, Yadav B, Dhungel B, Adhikari N, Shrestha UT, Adhikari B, Banjara MR, Ghimire P. Methicillin-Resistant *Staphylococcus aureus* (MRSA): Prevalence, Antimicrobial Susceptibility Pattern, and Detection of *mecA* Gene among Cardiac Patients from a Tertiary Care Heart Center in Kathmandu, Nepal. *Infect Dis (Auckl)*. 2021 Sep 1; 14:11786337211037355. doi: 10.1177/11786337211037355. PMID: 34483665; PMCID: PMC8414605.
2. Thapa S, Adhikari N, Shah AK, Lamichhane I, Dhungel B, Shrestha UT, Adhikari B, Banjara MR, Ghimire P, Rijal KR. Detection of NDM-1 and VIM Genes in Carbapenem-Resistant *Klebsiella pneumoniae* Isolates from a Tertiary Health-Care Center in Kathmandu, Nepal. *Chemotherapy*. 2021;66(5-6):199-209. doi: 10.1159/000518256. Epub 2021 Aug 31. PMID: 34515078.
3. Gurung R, Adhikari S, Adhikari N, Sapkota S, Rana JC, Dhungel B, Thapa Shrestha U, Banjara MR, Ghimire P, Rijal KR. Efficacy of Urine Dipstick Test in Diagnosing Urinary Tract Infection and Detection of the *bla*CTX-M Gene among ESBL-Producing *Escherichia coli*. *Diseases*. 2021 Aug 27;9(3):59. doi: 10.3390/diseases9030059. PMID: 34562966; PMCID: PMC8482205.

4. Gaire U, Thapa Shrestha U, Adhikari S, Adhikari N, Bastola A, Rijal KR, Ghimire P, Banjara MR. Antibiotic Susceptibility, Biofilm Production, and Detection of *mecA* Gene among *Staphylococcus aureus* Isolates from Different Clinical Specimens. *Diseases*. 2021 Nov 1;9(4):80. doi: 10.3390/diseases9040080. PMID: 34842640; PMCID: PMC8628674.
5. Khanal M, Joshi PR, Paudel S, Acharya M, Rijal KR, Ghimire P, Banjara MR. Methicillin-Resistant Coagulase Negative Staphylococci and Their Antibiotic Susceptibility Pattern from Healthy Dogs and Their Owners from Kathmandu Valley. *Trop Med Infect Dis*. 2021 Nov 2;6(4):194. doi: 10.3390/tropicalmed6040194. PMID: 34842844; PMCID: PMC8628895.
6. Maharjan M, Sah AK, Pyakurel S, Thapa S, Maharjan S, Adhikari N, Rijal KR, Ghimire P, Thapa Shrestha U. Molecular Confirmation of Vancomycin-Resistant *Staphylococcus aureus* with *vanA* Gene from a Hospital in Kathmandu. *Int J Microbiol*. 2021 Dec 2; 2021:3847347. doi: 10.1155/2021/3847347. PMID: 34899917; PMCID: PMC8660244.
7. Karn M, Bhargava D, Dhungel B, Banjara MR, Rijal KR, Ghimire P. The burden and characteristics of nosocomial infections in an intensive care unit: A cross-sectional study of clinical and nonclinical samples at a tertiary hospital of Nepal. *Int J Crit Illn Inj Sci*. 2021 Oct-Dec;11(4):236-245. doi:

- 10.4103/ijciis.ijciis_7_21. Epub 2021 Dec 18. PMID: 35070914; PMCID: PMC8725804.
8. Maharjan R, Bastola A, Adhikari N, Rijal KR, Banjara MR, Ghimire P, Shrestha UT. Multidrug-resistant bacteria with ESBL genes: a growing threat among people living with HIV/AIDS in Nepal. *BMC Infect Dis*. 2022 Jun 7;22(1):526. doi: 10.1186/s12879-022-07503-2. PMID: 35672713; PMCID: PMC9171981.
 9. Basnyat S, Banjara MR, Ghimire P, Matlashewski G, Singh A. Investigation of Visceral Leishmaniasis Transmission in Selected Districts of Nepal. *J Nepal Health Res Counc*. 2022 Jun 2;20(1):194-201. doi: 10.33314/jnhrc. v20i01.4161. PMID: 35945875.
 10. Kansakar P, Ghimire B, Banjara MR, Mishra P. Comparison of POSSUM and SAPS II in Prediction of Postoperative Mortality in Hollow Viscus Perforation. *J Nepal Health Res Counc*. 2022 Jun 2;20(1):138-141. doi: 10.33314/jnhrc. v20i01.3629. PMID: 35945866.
 11. Banjara MR, Joshi AB, Singh VK, Das ML, Gurung CK, Oliario P, Halleux C, Matlashewski G, Kroeger A. Response to Visceral Leishmaniasis Cases through Active Case Detection and Vector Control in Low-Endemic Hilly Districts of Nepal. *Am J Trop Med Hyg*. 2022 Jul 5;107(2):349–54. doi: 10.4269/ajtmh.21-0766. Epub ahead of print. PMID: 35895401; PMCID: PMC9393440.

12. Das D, Vongpromek R, Assawariyathipat T, Srinamon K, Kennon K, Stepniewska K, Ghose A, Sayeed AA, Faiz MA, Netto RLA, Siqueira A, Yerbanga SR, Ouédraogo JB, Callery JJ, Peto TJ, Tripura R, Koukouikila-Koussounda F, Ntoumi F, Ong'echa JM, Ogutu B, Ghimire P, Marfurt J, Ley B, Seck A, Ndiaye M, Moodley B, Sun LM, Archasuksan L, Proux S, Nsobya SL, Rosenthal PJ, Horning MP, McGuire SK, Mehanian C, Burkot S, Delahunt CB, Bachman C, Price RN, Dondorp AM, Chappuis F, Guérin PJ, Dhorda M. Field evaluation of the diagnostic performance of EasyScan GO: a digital malaria microscopy device based on machine-learning. *Malar J*. 2022 Apr 12;21(1):122. doi: 10.1186/s12936-022-04146-1. PMID: 35413904; PMCID: PMC9004086.
13. Singh JA, Kochhar S, Wolff J, Atuire C, Bhan A, Emanuel E, Faden R, Ghimire P, Greco D, Ho C, Moon S, Shamsi-Gooshki E, Touré A, Thomé B, Smith MJ, Upshur REG. WHO guidance on COVID-19 vaccine trial designs in the context of authorized COVID-19 vaccines and expanding global access: Ethical considerations. *Vaccine*. 2022 Mar 25;40(14):2140-2149. doi: 10.1016/j.vaccine.2022.02.038. Epub 2022 Feb 28. PMID: 35248422; PMCID: PMC8882397.
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- 40.

Some glimpses of the departmental activities



Associate Prof. Dr. Komal Raj Rijal, Head of the Department was awarded with “Science Award of the Year 2078” from Nepal Academy of Science and Technology (NAST).



Prof. Dr. Anjana Singh and Prof. Dr. Dwij Raj Bhatta received Dirgha Sewa Padak from TU.



Ms. Supriya Sharma, lecturer of the Department has been received PhD Degree in Microbiology.



TWAS Researcher/ Molecular Biologist UNESCO-TWAS EXPERT Dr. Suneeta Panicker conducted molecular biology training for M. Sc/ PhD students during May 15th 2022 to 29th May 2022 at the department.

ANNEX-I Faculties



Komal Raj Rijal, PhD
Associate Professor & Head of Dept.



Anjana Singh, PhD
Professor



Dwij Raj Bhatta, PhD
Professor



Prakash Ghimire, PhD
Professor



Binod Lekhak, PhD
Professor



Megha Raj Banjara, PhD
Associate Professor



Devraj Joshi, PhD
Associate Professor



Shyam Prakash Dumre, PhD
Associate Professor



Reshma Tuladhar, PhD
Associate Professor



Shaila Basnyat
Lecturer



Supriya Sharma, PhD
Lecturer



Purnima Baidya
Lecturer

ANNEX-I Faculties



Manita Aryal
Lecturer



Nabaraj Adhikari
Lecturer



Upendra Thapa Shrestha
Lecturer



Nabaraj Adhikari
Lecturer

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ANNEX-II

Annual budget of the Department with details of income and expenditure
FY 2078/079

लेखा	वजेट	थप	आन्तरिक श्रोत	धरौटी	वर्षको	जम्मा	खर्च	हालको	जम्मा	वाँकी
	निकाशा	वजेट	बजेट	निकाशा	शुरु पेशकी			वाँकी पेशकी		
	2	3	4	5	6	2+3+4+5+6=7	8	9	8+9=10	7-10=11
01:001			0			0				0
01:002			14000000			14000000				14000000
01:004			1000000			1000000.00			0.00	1000000.00
01:006			10000000			10000000.00			0.00	10000000.00
01:007			30000000			30000000.00	6399776.50		6399776.50	23600223.50
01:008			400000.00			400000.00	1702.00		1702.00	398298.00
01:009			0.00			0.00	0.00		0.00	0.00
01:010			4000000.00			4000000.00	175499.98		175499.98	3824500.02
जम्मा	0	0.00	59400000.00			59400000.00	6576978.48		6576978.48	38823021.52
09:001 s										
09:001s	8820000	1384276.60				10204276.60	10204276.60	0.00	10204276.60	0.00
09:001v			400000.00			400000.00	31500.00		31500.00	368500.00
09:002	5096000	828920.38				5924920.38	5924648.00		5924648.00	272.38
09:003	928000	100946.00				1028946.00	1028946.00		1028946.00	0.00
09:004	1285000	170570.56				1455570.56	1455570.56		1455570.56	0.00

Contd.

लेखा	वजेट	थप	आन्तरिक श्रोत	धरोटी	वर्षको	जम्मा	खर्च	हालको	जम्मा	वाँकी
	निकाशा	वजेट	बजेट	निकाशा	शुरु पेशकी			वाँकी पेशकी		
09-005 उपदानकोष	360000	53286.46				413286.46	413286.46		413286.46	0.00
09-006			1200000.00			1200000.00	227611.00		227611.00	972389.00
09-007			200000.00			200000.00	72555.00		72555.00	127445.00
09-008			200000.00			200000.00	28926.00		28926.00	171074.00
09-011			1000000.00			1000000.00	40708.00		40708.00	959292.00
09-013			1000000.00			1000000.00	55390.00		55390.00	944610.00
09-017			1000000.00			1000000.00	305523.00		305523.00	694477.00
09-018			10000.00			10000.00	3000.00		3000.00	7000.00
09-019			100000.00			100000.00	0.00		0.00	100000.00
09-021			600000.00			600000.00	0.00		0.00	600000.00
09-023			2000000.00			2000000.00	204878.00		204878.00	1795122.00
09-024s			2000000.00			2000000.00	173709.00		173709.00	1826291.00
09-024#			1000000.00			1000000.00	14950.00		14950.00	985050.00
09-028			2000000.00			2000000.00	2139278.99		2139278.99	17860721.01
9.029			100000.00			100000.00	0.00		0.00	100000.00
09-030			6000000.00			6000000.00	2986994.87		2986994.87	3013005.13
9.031			3000000.00			3000000.00	138625.00		138625.00	2861375.00
कूल जम्मा	16489000	2538000.00	39810000			58837000.00	0.00		0.00	58837000.00
आम्दानी						0.00	0.00		0.00	0.00
जम्मा	16489000	2538000.00	39810000.00		0.00	58837000.00	25450376.48		25450376.48	33386623.52
कूल जम्मा	16489000	2538000.00	99210000.00		0.00	32027354.96	32027354.96		0.00	72209645.04



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