KUSUM PARAJULI

Resume

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Research Interests: Cell and Molecular Biology, Cancer Biology, Stress Physiology, Microbiology, Immunology, Stem Cell Biology.

EDUCATION

2021 - 2023 M.S. in Biological Sciences. **GPA:** 3.98/4
Purdue University, Fort Wayne, USA.
Relevant Courses: *Molecular Biology and Applications, Immunology, Biomedicine, Biometry (Programming in R), Professional Development.*

2018 - 2021 M.Sc. in Zoological Sciences. **GPA:** 3.74/4
Tribhuvan University, Central Department of Zoology, Kirtipur, Nepal.
Relevant Courses: *Cell and Developmental Biology, Neuronal and Behavioral Biology, Fish Genetics and Biotechnology, Molecular Biology and Genetics.*

PUBLICATIONS

- Parajuli K., Fahim N., Mumu S., Palu R., Mustafa A. Antibacterial potential of *Luidia clathrata* (sea star) tissue extracts against selected pathogenic bacteria. **PLOS One 2023**.
- Mumu S.K., Fahim N., Win E.H.A., Parajuli K., Mason S., Wendel I., Mustafa A. Potentials of *Gynura procumbens* to modulate chronic stress and immunological responses in *Oreochromis niloticus***. PLOS One 2023.**
- Win E.H.A., Mumu S.K., Fahim N., Parajuli K., Blumenthal E., Palu R., Mustafa A. Comparative physiological study of sea cucumbers from eastern waters of United States. **PLOS One 2023.**
- Fahim N., Parajuli K., Mumu S.K., Palu R., Mustafa A. Antibacterial activity of Sea Urchins (*Arbacia punctulata* and *Lytechinus variegatus*) extracts against selected gram-positive and gram-negative pathogenic bacteria (in vitro). **Submitted 2024.**

- Kunwar P.S., Sapkota B., Badu S., Parajuli K., Sinha A.K., Boeck G.D., Sapkota K. Chlorpyrifos and dichlorovs in combined exposure reveals antagonistic interaction to the freshwater fish Mrigal, *Cirrhinus mrigala.* **Ecotoxicology 2022.**
- Kunwar P.S., Parajuli K., Badu S., Sapkota B. , Sinha A.K., Boeck G.D., Sapkota K. Mixed toxicity of chlorpyrifos and dichlorvos show antagonistic effects in the endangered fish species golden mahseer (*Tor putitora*). **CBPP 2021.**
- Chitrakar P., Parajuli K. Length and weight relationship studies of alimentary canal compared to the total body weight of grass carp *Ctenopharyngodon idella* (valenciennes, 1844) at Balkhu live fish market of Kathmandu, Nepal. **IJFAS 2017.**

PEER REVIEWED PRESENTATION

- Physiological and Immunological Properties of Selected Sea Cucumber Species From The Waters of the United States. **San Diego, CA, USA. *WAS (2022).***
- Physiological and Immunological Response of Sea-Star (*Luidia clathrata*) Exposed to Temperature and Amputation Stress. **Indianapolis, IN, USA. *IAS (2022).***
- Antibacterial and Hemolytic Effects of Different Tissues Extracts from *Luidia clathrata* (Sea Star) Against Selected Pathogenic Bacteria. **New Orleans, LA, USA. *AA (2023).***

ACADEMIC RESEARCH EXPERIENCE

Research Student, Stress Physiology, Molecular Biology, Microbiology
Purdue University Fort Wayne, IN, USA *2021 AUG - 2023 MAY*

- Analysis related to effects of various stressor (thermal, chemical, and anthropological) on physiological and immunological response on aquatic invertebrates.
- Identification and expression analysis of Heat shock protein gene in Sea Star Stressed by Elevated Oceanic temperature.
- Extraction and Isolation of the bioactive compounds from the various tissues extracts of Echinoderms.
- Stress modulation using nutraceuticals as dietary supplements, Fish as a model organism.

TEACHING EXPERIENCE

Graduate Teaching Assistant, Department of Biological Sciences
Purdue University Fort Wayne, IN, USA *2021 AUG - 2023 MAY*

- Taught multiple graduate and undergraduate lab courses such as Human Anatomy and Physiology, Microbiology for the Health Professionals, and Immunology.
- Handled experimentation associated with those courses and was involved in lab management.
- Assisted faculty members with course planning, assessment and record keeping.
- Prepared class presentations, assigned the class projects for students, and graded lab reports.

INDUSTRIAL RESEARCH EXPERIENCE

Research Associate, Microbiology, Molecular biology
Genista Biosciences, CA, USA *2023 JUN- Present*

- Performed microbiological analysis for pathogen identification by leveraging the sophisticated automated systems such as PCR.
- Conducted industry specific Microbial (Sporeformers, Alicyclobacillus, Howard Mold Count), Chemical (Allergens and mycotoxins), and Molecular (GMO) testing.

ACADEMIC AWARDS/NOMINATIONS

- **PFW M.S. Merit Scholarship. (2021 -2023).** Financial support for M.S. at Purdue University Fort Wayne, IN, USA.
- **PFW Top 50 Award (2023)**. Awarded with PFW Top-50 student award for the excellent academic and research accomplishment, Fort Wayne IN, USA.
- **Best Graduate Teaching Assistant (2023)**. Nominated from the department of Biological Science, Purdue University for outstanding teaching performance, Fort Wayne, IN USA.
- **PFW Travel Award (2022).** Financial support to travel and attend aquaculture america at New Orleans, LA, USA.
- **WAS Travel Award (2021).** Financial support to travel and attend World Aquaculture Society (WAS) Conference at San Diego, CA, USA.

AFFILIATION / VOLUNTEERING

- BETA BETA BETA Honor Society, Indiana Academy of Science *(2022-Present).*
- World Aquaculture Society, Nepal Aquaculture Society *(2021-Present)*.
- Himalayan Resource Foundation (*2014-Present).*

TECHNICAL EXPERTISE

- Extraction and purification of nucleic acid (RNA, DNA) and protein.
- Western blotting, qPCR, ELIZA, Agarose gel electrophoresis.
- Light and fluorescent microscopy and spectrophotometer.
- PBMC, media and solution preparation, Aseptic technique, bacterial culture
- Diagnostic biochemical and physiological tests, Cell culture technique, Bacterial plating and counting.

COMPUTER SKILLS

- **Languages/Programming**: SPSS, SigmaPlot, Latex, R.
- **Misc:** MS Word, MS Excel.

REFERENCES

Ahmed Mustafa, Ph.D.
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