

MINGMAR SHERPA

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EDUCATION

Ph.D. in Biomedical and Biological Sciences

Cornell University

Ithaca, NY, USA

Aug 2025 – Present

Bachelor of Science in Biomedical Sciences

University of Alabama at Birmingham (UAB)

Birmingham, AL, USA

Aug 2017 – Dec 2021

A-Level (10+2) / Science stream

St. Xavier's

Cambridge University A-Level

Kathmandu, Nepal

May 2015 – Jun 2017

School Leaving Certificate (Grade 10)

Phaplu Community School

Solukhumbu, Nepal

2015

RESEARCH EXPERIENCES

Senior Research Support Associate

Massachusetts Institute of Technology (MIT) / Department of Biology

Cambridge, MA, USA

Jul 2022 – Jan 2025

- Lead an independent research project focusing on the role of mechanical forces generated during gastrulation in regulating the timing of cell division and cell cycle regulatory genes in *Drosophila melanogaster* (Fruit Fly).
- Discovered that mechanical forces regulate cell division timing.

Undergraduate Research Assistant

University of Alabama at Birmingham School of Medicine / Department of Nephrology

Birmingham, AL, USA

Jan 2021 – Dec 2021

- Investigated the role of vascular endothelium-derived Endothelin-1 (ET-1) gene in promoting Kidney fibrosis in male and female mice fed on a high salt diet.
- Discovered that the lack of ET-1 gene in female mice is protective against salt-induced cortical fibrosis, whereas in male mice, the absence of the vascular ET-1 gene leads to an increased accumulation of fibrosis in the cortical region of the kidney.

Undergraduate Research Assistant

University of Alabama at Birmingham / Department of Biology

Birmingham, AL, USA

Jan 2019 – Mar 2020

- Investigated the role of the Heterochromatin Protein 1 (HP1) family in transcriptional regulation.
- Successfully completed two approaches to study functions of HP1 on transcriptional regulation. First, construction of DNA plasmids of LacI and HP1 homologs (HP1a, HP1b, and HP1c). Second, developed a CRISPR/dCas9 based protein tether to target HP1 to specific genomic regions of interest.

PUBLICATIONS

Mingmar Sherpa¹, Bipasha Dey¹, Thomas Evans¹, Yu-Chiun Wang¹, Adam Martin¹. (2025) “Force regulates mitotic entry timing during *Drosophila* gastrulation.” (In Prep)

Prince Rai¹, Adipti Pantha¹, Biplab Adhikari¹, Kopila Baraili¹, Pasang Sherpa¹, Mingmar Sherpa¹. (2025) “Prevalence of Cardiovascular Diseases.” (In Prep)

Mingmar Sherpa¹, Dilli Raman Adhikari², Ujir Rawat², Nirmala Adhikari², Pradeep Thapa³. (2024) “The Burden of Micronutrient Deficiencies in Developing Countries: Implications for Child and Maternal Health.” *Asia Pacific Journal of Clinical Nutrition*

Daniel Loebell¹, **Mingmar Sherpa**¹, Ram Datta Bhatta¹. (2025) “Nepal’s Engagement with the Millennium Challenge Corporation: A Philosophical and Economic Perspective.” *The Journal of International Affairs*. Link:

https://www.researchgate.net/publication/398225612_Nepal_Engagement_with_the_Millennium_Challenge_Corporation_MCC_A_Philosophical_and_Economic_Perspective

Prince Rai¹, Drona Trital³, Adipti Pantha², Nirmala Adhikari¹, Dilli Raman Adhikari³, **Mingmar Sherpa**¹. (2025) “Iron Deficiency Anemia: A major public health challenge in Nepal.” *Nepal Journal of Public Health*.

James Pope¹, Md Hassanuzzaman¹, **Mingmar Sherpa**², Omar Emara¹, Ayush Joshi¹, and Nirmala Adhikari³. (2024) “Skin Cancer Machine Learning Model Tone Bias.”

arXiv link: <https://doi.org/10.48550/arXiv.2410.06385>

LEADERSHIP EXPERIENCES

National-Level Scientific Engagement and Public Health Leadership in Nepal

Feb 2025 – July 2025

- Invited by the Prime Minister of Nepal to contribute scientific expertise to national development of Nepal.
- Met with the Prime Minister to discuss advancing Nepal’s research capacity and strengthening evidence-based public health initiatives. (X link: https://x.com/PM_nepal_/status/1935000042538184808) (YouTube Link: https://www.youtube.com/watch?v=j_qLM81OdwU&t=104s)
- Initiated formal collaboration pathways with the Nepal Health Research Council (NHRC) to build long-term, government-supported research infrastructure.

Founder of the Bright Vision Foundation

Feb 2020 – Present

- Established the Bright Vision Foundation in 2020, with the goal of working in the field of health and education.
- In 2025, successfully conducted 2 health camp in Solukhumbu, Nepal, delivering healthcare services (General Medicine, Gynecology, Optometry) to around 1,500 people.
- In 2024, established library in Solukhumbu Nepal.
- In 2023, established The Bright Future Computer Center in Solukhumbu, Nepal, to empower students from low-income families by providing free, hands-on training in basic computer courses. To date, over 500 students have benefited from this initiative.

Undergraduate Research Ambassador

Birmingham, AL, USA

University of Alabama at Birmingham

Aug 2019 – Jun 2020

- Mentored students by guiding them to find opportunities in different research areas across various departments on campus.
- Organized and led outreach programs aimed at increasing undergraduate students engagement in research, presenting on the significance of research.

Vice Treasurer

Birmingham, AL, USA

Nepalese Student Association (NSA) at University of Alabama at Birmingham

Aug 2018 – Jul 2019

- Request funding from the university to organize programs for the organization, ensuring that activities were fully supported financially and aligned with the organization's mission.
- Assisted in reconciling accounts with statements and invoices, ensuring the accuracy of financial records by identifying and resolving any discrepancies.

Research Collaborator

School of International Training (SIT)

Kathmandu, Nepal
Jan 2016 – Feb 2016

- Assisted students from the United States of America in executing research projects in Solukhumbu, Nepal, contributing to the successful completion of fieldwork and data collection.

TEACHING EXPERIENCES

Tutor at the University of Alabama at Birmingham

Vulcan Material Academic Success Center

Birmingham, AL, USA
May 2018 – Dec 2018

- Tutored Introductory Biology, General Chemistry, and Calculus.

Supplementary Instructor at Bal Uddhar Higher Secondary School

- Instructed science courses to students from grade 7 to 10.

Kathmandu, Nepal
Jun 2017 – Jul 2017

Tutor at Naya Nepal

- Tutored science and math courses to students from grade 1 to 5.

Kathmandu, Nepal
Jun 2016 – Feb 2017

PROFESSIONAL AFFILIATIONS

Graduate Christian Fellowship at the Massachusetts Institute of Technology (MIT)	2022 – 2025
Member of The American Society for Cell Biology (ASCB)	2023 – 2024
David Network	2023 – Present
Member of the Genetic Society of America (GSA)	2022 – 2024
Founder of the Bright Vision Foundation	2020 – Present
Nepalese Student Association at the University of Alabama at Birmingham	2018 – 2021
School of International Training (SIT)	2016 – 2017

GRANTS / FELLOWSHIPS / SCHOLARSHIPS

Selected to participate in the Passages Winter 2025 Israel Trip, awarded a scholarship covering the program cost from Passages	2025
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Awarded the University Fellowship for Fall 2025 at Cornell University Graduate School	2025
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Secured \$10,500 in funding from the Sir Edmund Hillary Foundation (Canada) through Bright Vision Foundation to organize a health camp providing essential healthcare services in Solukhumbu, Nepal	2025
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University of Alabama at Birmingham International Scholarship	2017 – 2021
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Himalayan Health and Environmental Services Solukhumbu Scholarship	2017
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Himalayan Trust Nepal Scholarship	2015 – 2017
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Ministry of Education, Government of Nepal, Scholarship	2015
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Sir Edmund Hillary Foundation Scholarship	2012 – 2015
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AWARDS / HONORS

Invited by the Prime Minister of Nepal to contribute scientific expertise in national development of Nepal National News: https://risingnepaldaily.com/news/63711 YouTube link: https://www.youtube.com/watch?v=j_qLM81OdwU&t=25s	2025
Honored by the Vice-Prime Minister of Nepal for societal contributions, including initiative in healthcare, education, and community development	2025
Featured at Massachusetts Institute of Technology (MIT) News Link: https://news.mit.edu/2025/always-looking-home-mingmar-sherpa-0429	2025
Kidney Scholar of the University of Alabama at Birmingham	2021
Award of Significant Community Service by Bal Uddhar Higher Secondary School	2017
Outstanding Student Award by Phaplu Community School	2015
Awarded by the Ministry of Education, Government of Nepal for achieving highest score in School Leaving Certificate (Grade 10) examination in Solukhumbu district	2015
Topped Solukhumbu district in School Leaving Certificate (Grade 10)	2015

CONFERENCES / SEMINARS ATTENDED

David Network Annual Summit	2023, 2024, 2025
13 th International Conference on Neural Tube Defects	2024
The American Society for Cell Biology (ASCB) and European Molecular Biology Organization (EMBO) Conference	2023
64 th Annual Drosophila Research Conference	2023
SeXX and Immunity at Massachusetts Institute of Technology (MIT)– Exploring the impact of female and male biology on immune function	2022
Annual Biomedical Research Conference for Minority Students (ABRCMS)	2021
University of Alabama at Birmingham Fall Research Expo	2021
University of Alabama at Birmingham Fall Research Expo	2019
University of Alabama at Birmingham Summer Research Expo	2019

VOLUNTEERING

Fall into Science / Cornell University	2025-Present
COVID-19 relief fund collection for the Bright Vision Foundation	2020 - 2021
Undergraduate Research Expo at the University of Alabama at Birmingham	2019
Nepalese Student Association cultural programs at the University of Alabama at Birmingham	2017 – 2021
Earthquake relief efforts at Dakshinkali School, Nepal	2015

RESEARCH PRESENTATIONS

Sherpa M., Martin AC. (2024, August) Investigating how mechanical forces regulates cell division orientation and timing during tissue morphogenesis. Poster, 13th International Conference on Neural Tube Defects, University of British Columbia, Vancouver, British Columbia, Canada.

Sherpa M., Martin AC. (2024, July) Force regulates cell division timing during *Drosophila* Gastrulation. Talk, University of Bristol, Bristol, UK.

Sherpa M., Martin AC. (2024, March) Force regulates cell division timing during *Drosophila* Gastrulation. Talk, Cell Biology Supergroup at Massachusetts Institute of Technology, Cambridge, Massachusetts, USA.

Sherpa M., Martin AC. (2023, December) Investigating how mechanical force regulates cell division timing during *Drosophila* gastrulation. Poster, The American Society for Cell Biology (ASCB) and European Molecular Biology Organization (EMBO) Conference, Boston, Massachusetts, USA.

Sherpa M., Martin AC. (2023, June) Force regulates mitotic entry timing during *Drosophila* gastrulation. Talk, Massachusetts Institute of Technology Annual Building 68 Retreat, Falmouth, Massachusetts, USA.

Sherpa M., Martin AC. (2023, March) Investigating how force regulates mitotic entry timing during *Drosophila* gastrulation. Poster, 64th Annual Drosophila Research Conference, Chicago, Illinois, USA.

Sherpa M., De Miguel C. (2021, December) Vascular Endothelium-Derived Endothelin-1 is Crucial in Promoting the Renal Deposition of Collagen during high salt diet. Poster, University of Alabama at Birmingham Fall Research Expo, Birmingham, Alabama, USA.

Sherpa M., Boykin T., Adams B., Giordano-Mooga SS., Coats MT. (2021, December) Importance of Genetic Testing. Poster, University of Alabama at Birmingham Fall Research Expo, Birmingham, Alabama, USA.

Sherpa M., De Miguel C. (2021, November) Vascular Endothelium-Derived Endothelin-1 is Crucial in Promoting the Renal Deposition of Collagen during high salt diet. Poster, Annual Biomedical Research Conference for Minority Students, Birmingham, Alabama, USA.

Sherpa M., Favors JS., Schoelz JM., Riddle NC. (2020 March). Construction of a CRISPR/dCas9 platform to test function of somatic Heterochromatin Protein 1 (HP1) homologs in *Drosophila Melanogaster*. Poster, National Conference on Undergraduate Research, Montana State University, Bozeman, Montana, USA.

Sherpa M., Favors JS., Schoelz JM., Riddle NC. (2019 December). Construction of a CRISPR/dCas9 platform to test function of somatic Heterochromatin Protein 1 (HP1) homologs in *Drosophila Melanogaster*. Poster, University of Alabama at Birmingham Fall Research Expo, Birmingham, Alabama, USA.

Sherpa M., Robinson T., Schoelz JM., Riddle NC. (2019 July). Construction of molecular tethers to evaluate Heterochromatin Protein 1 (HP1) impact on transcription. Poster, University of Alabama at Birmingham Summer Research Expo, Birmingham, Alabama, USA.

LANGUAGES

English - Fluent

Nepali - Fluent

Hindi - Fluent

Urdu - Fluent

Sherpa – Intermediate