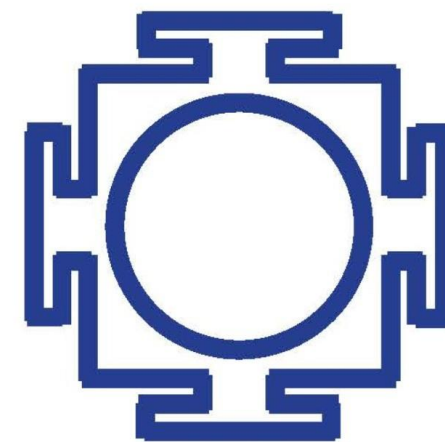


24th FERCAP International CONFERENCE

Maximizing Benefits through Responsible Conduct of Research

Women driven community engagement in genomics research

Arya Gautam
Sabitri Sciences,
Bhaktapur,
Nepal





Name: Arya Gautam

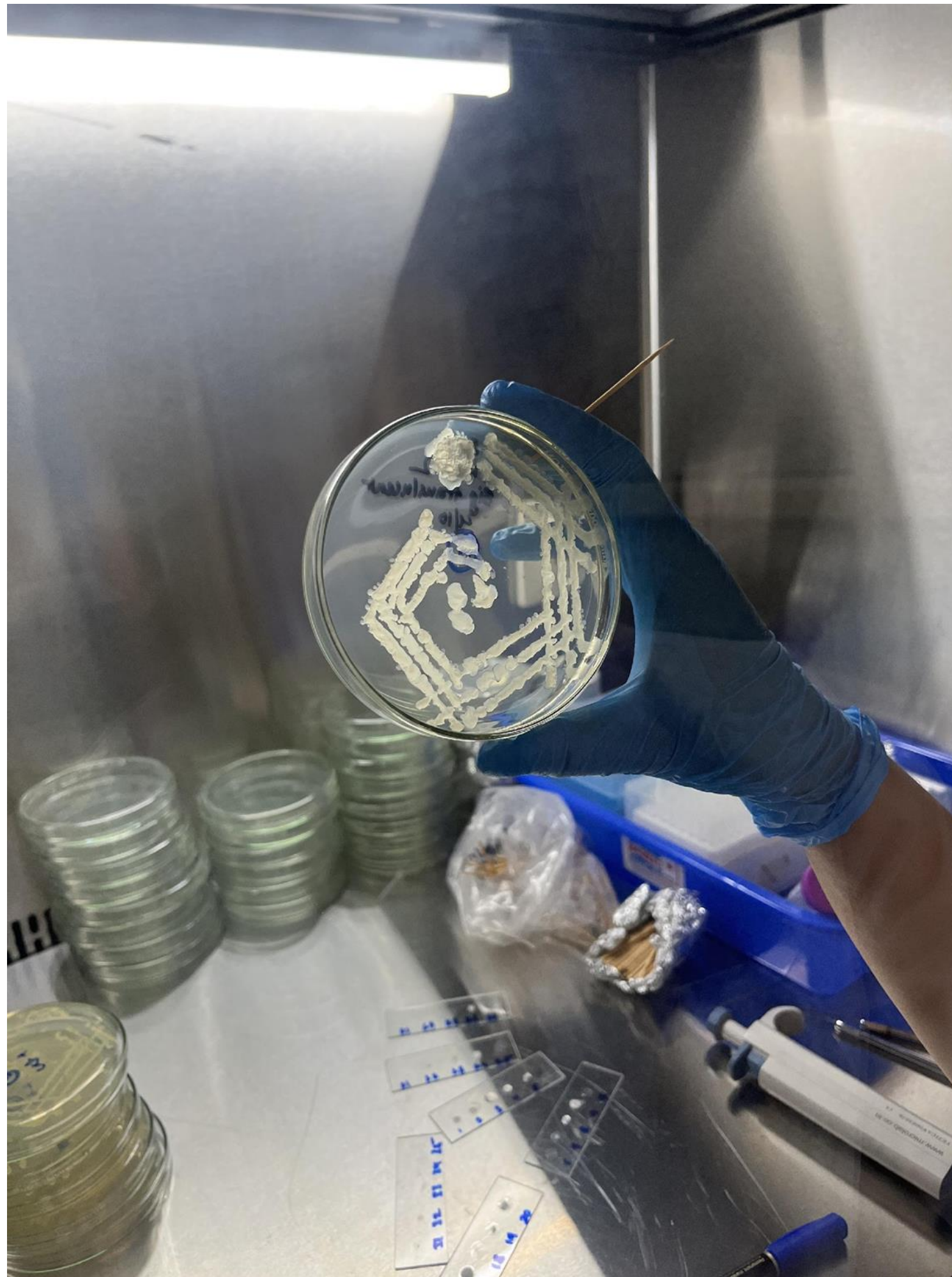
Current position: Research Assistant, Sabitri Sciences

Highest Educational Attainment: Bachelors of Science, New York University Abu Dhabi

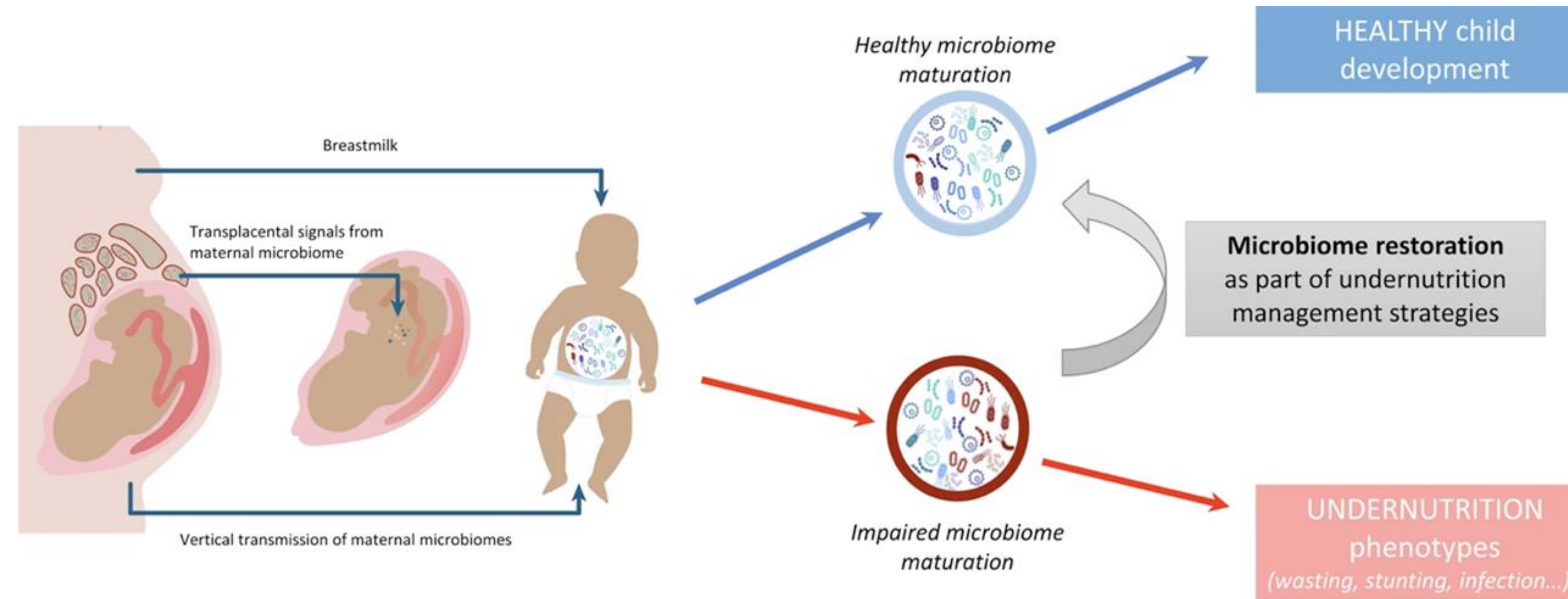
Arya Gautam is a research assistant at Sabitri Sciences, Kathmandu, Nepal. She graduated from New York University Abu Dhabi, UAE in 2023 in Bachelors of Science (BSc) majoring in Biology. Her research interest lies in investigating microbial communities in diverse ecosystems using both experimental and computational techniques. She is also passionate about science advocacy and outreach, and is engaged in initiatives to reinforce STEM education in various rural communities in Nepal. She hopes to contribute to strengthening community driven science in Nepal that integrates indigenous and local context and practices into scientific research.

Who we are

We are a newly established biomedical research institution in Nepal, conducting **fundamental** and **translational research** in the field of **microbiology**, **population genetics**, and **public health**.



In the **Nepal Maternal and Infant Gut Microbiome Study**, we aim to understand infant gut microbiome development across lifestyles, from pregnancy to 3 years of life



Foragers



Farmers



Transitioning



Urbans

There is a long history of genomics research in Nepal

Ancient genomes from the Himalayas illuminate the genetic history of Tibetans and their Tibeto-Burman speaking neighbors

[Chi-Chun Liu](#), [David Witonsky](#), [Anna Gosling](#), [Ju Hyeon Lee](#), [Harald Ringbauer](#), [Richard Hagan](#), [Nisha Patel](#), [Raphaela Stahl](#), [John Novembre](#), [Mark Aldenderfer](#) ✉, [Christina Warinner](#) ✉, [Anna Di Rienzo](#) ✉ & [Choongwon Jeong](#) ✉

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[Tenzin Gayden](#)^a · [Alicia M. Cadenas](#)^a · [Maria Regueiro](#)^a · [Nanda B. Singh](#)^{b,c} · [Lev A. Zhivotovsky](#)^d · [Peter A. Underhill](#) · [Luigi L. Cavalli-Sforza](#) · [Rene J. Herrera](#) ^a ✉ [Show less](#)

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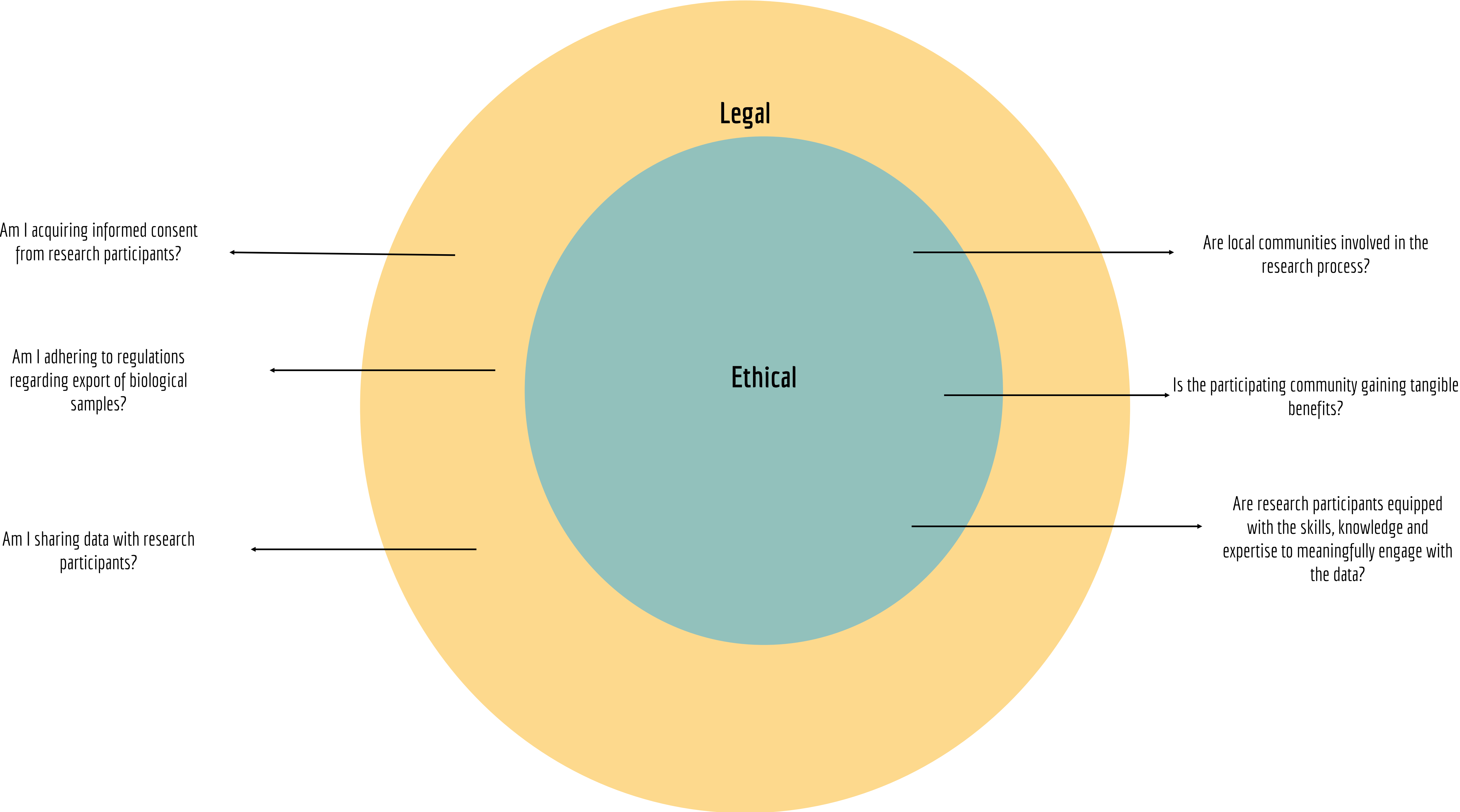
Publication History: Received January 24, 2007; Accepted February 23, 2007

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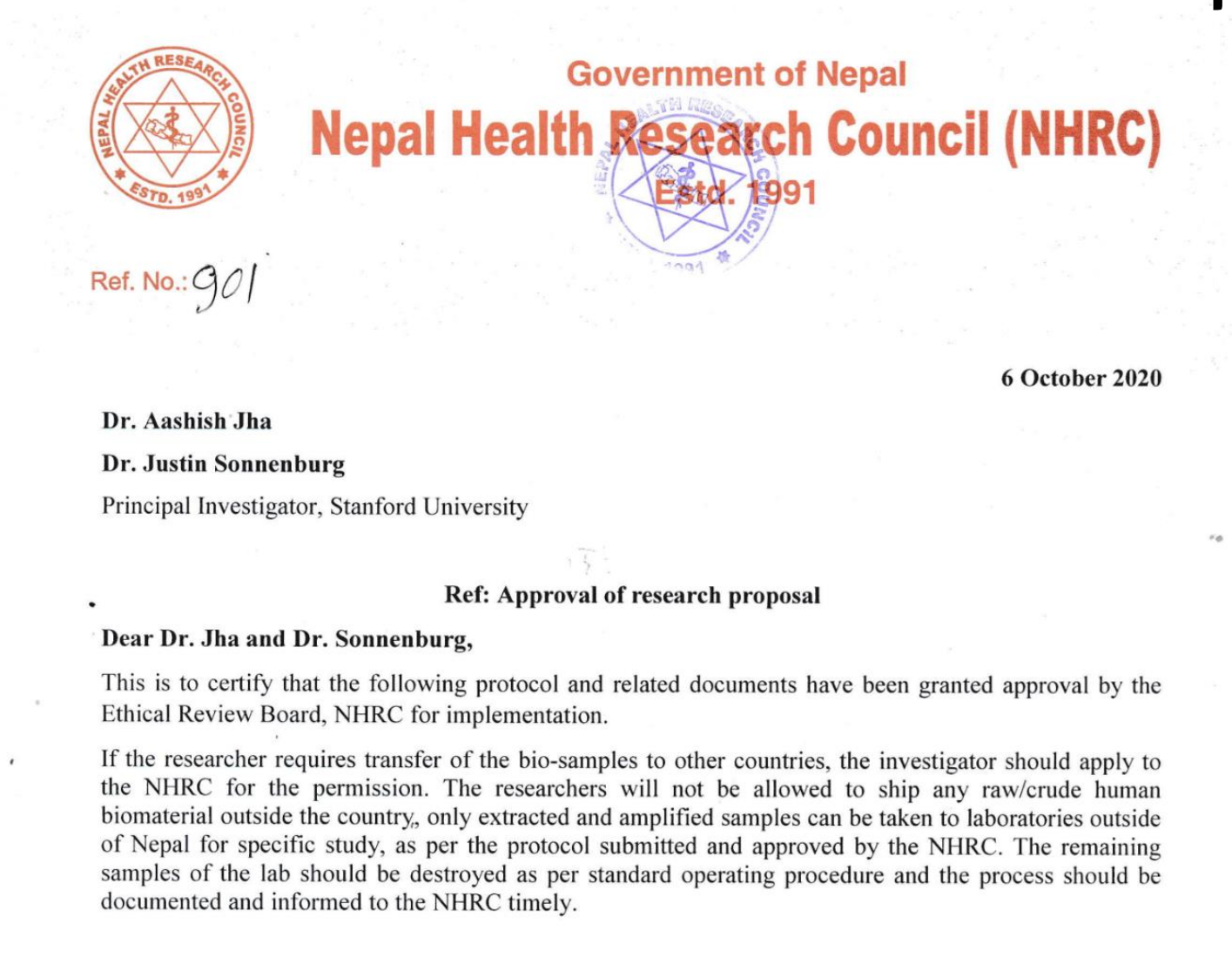
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What is responsible conduct of research?



Meeting legal criteria for research



NHRC approval



Collaborative IRB Training Initiative (CITI) trainings

स्ट्यानफोर्ड विश्वविध्यालय
अनुसन्धान अनुपालन कार्यालय

अनुसन्धानमा भाग लिने सहमति पत्र

तपाईं एक वैज्ञानिक अनुसन्धानमा भाग लिन गईरहनुभएको छ। यस अध्ययनको शिः

क्याराक्टेराइजेशन अफ ईफेक्ट अफ लाईफास्टाईल ईन गट माईक्रोबायोम अफ ः
(Characterization of effect of lifestyles in gut microbiomes of infa

तपाईंको सहमति अगाडि अनुसन्धानकर्ताले तपाईंलाई निम्न जानकारी दिने पछः कः प्रकृया, र अवधि; ख) प्रयोगात्मक प्रकृया; ग) अनुसन्धानबाट हुनसक्ने जोखिम, अस् तपाईंको गोपिनयता कायम गर्ने प्रकृयाहरू। अनुसन्धानकर्ताले तपाईंलाई निम्न जान क) अनुसन्धानबाट हुने जोखिमको संभावना; ख) उपलब्ध क्षतीपुर्ती अथवा अनुसन्धा उपचारका प्रकृयाहरू; ग) तपाईंको सहभागीता बन्द हुन सक्ने परिस्थितीहरू ; घ) त लागत; ङ) अनुसन्धानमा संलग्न हुने व्यक्तिको सन्ख्या; च) तपाईंले सहभागिता बन्द कुराहरू; तथा छ) तपाईंलाई अनुसन्धानको निस्कर्ष बताउन लाग्ने समय जसले तपाः निर्णयलाई असर गर्न सक्छ।

यदी तपाईं यस अनुसन्धानमा भाग लिन सहमत हुनुहुन्छ भने अनुसन्धानकर्ताहरूले त एक हस्ताक्षर प्रतिलिपीको साथै अनुसन्धानको लिखित सारांशको एक प्रतिलिपी ि यस अनुसन्धान वा यसका प्रक्रियाहरू, जोखिम र लाभ, वा उपचारको वैकल्पिक मा वा गुनासो भए तपाईंले यस अध्ययनका निर्देशक डा. जस्टिन सोननबर्ग सँग सोध्नस अथवा पछी फोन (६५०-७२१-१५१०) अथवा ईमेल (jsonnenburg@stanford.edu) सकिनेछ। तपाईंले डा आशिष झा सँग पनि ईमेल (arjha@stanford.edu) वा टेल Nepali telephone number here]) संपर्क गर्न सक्नुहुनेछ।

Acquiring informed consent



Sharing results with participants



Established scientists

Early career researchers (BSc, MSc, PhD students)

Adults in the community (mothers, healthcare workers)

High school students

We designed a monthly curriculum for high school students to reinforce STEM education, and trained our program officers (POs) to lead these workshops



Google Meet



Bhakundebesi, Kavre, Bagmati Pradesh



Madhuban, Parsa, Madhesh Pradesh

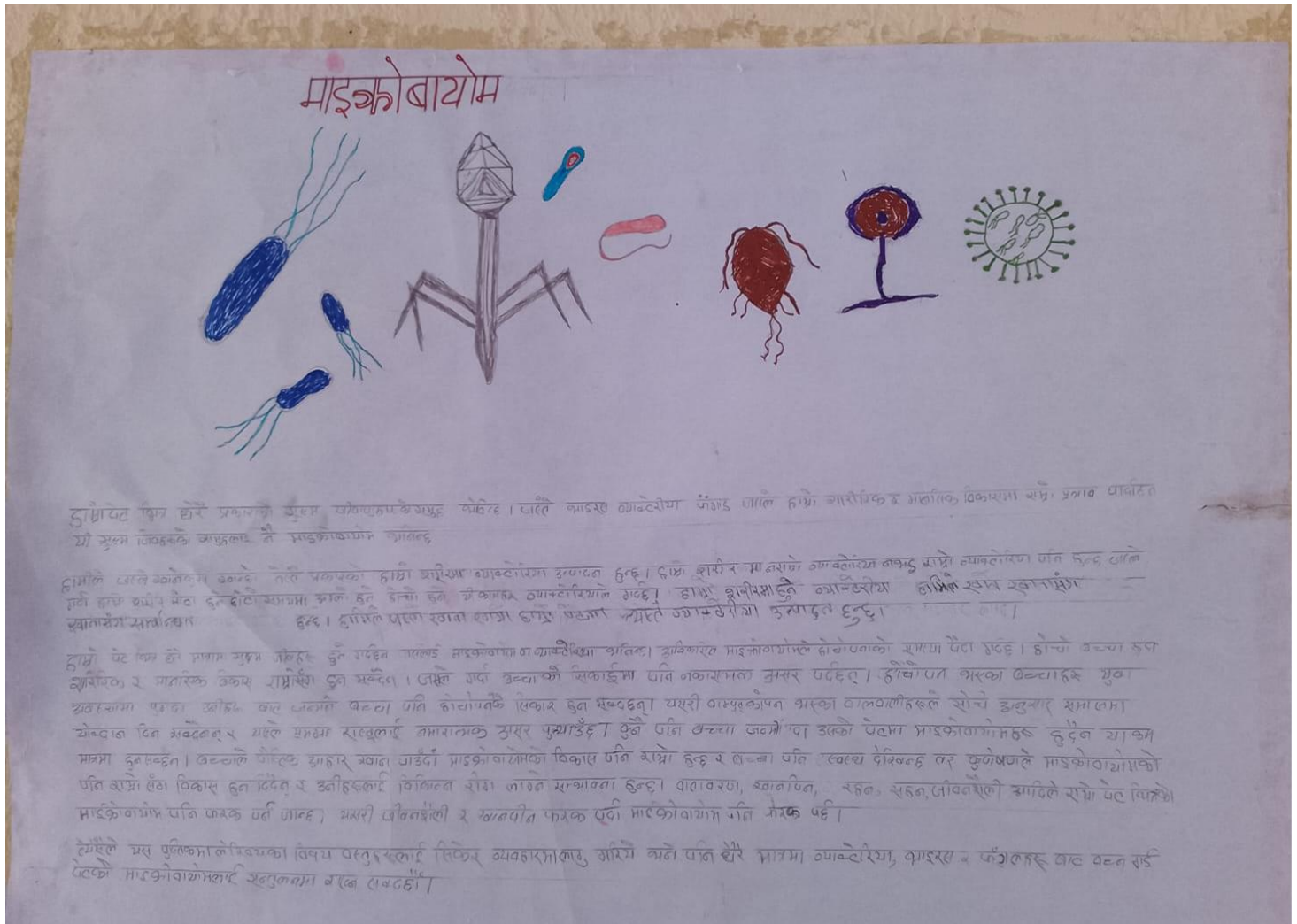


Bagbana, Parsa, Madhesh Pradesh

We teach high school students about the microbiome



Bhakundebesi, Kavre, Bagmati Pradesh



Korak, Chitwan, Bagmati Pradesh

Our students are emerging as confident and passionate leaders in their communities



Madhuban, Parsa, Madhesh Pradesh



Bhakundebesi, Kavre, Bagmati Pradesh

Students performing a play for the community on do's and don'ts during pregnancy.

Our POs work closely with female community healthcare volunteers (FCHVs) to identify important healthcare needs in the community



Bhakundebesi, Kavre, Bagmati Pradesh



Madhuban, Parsa, Bagmati Pradesh

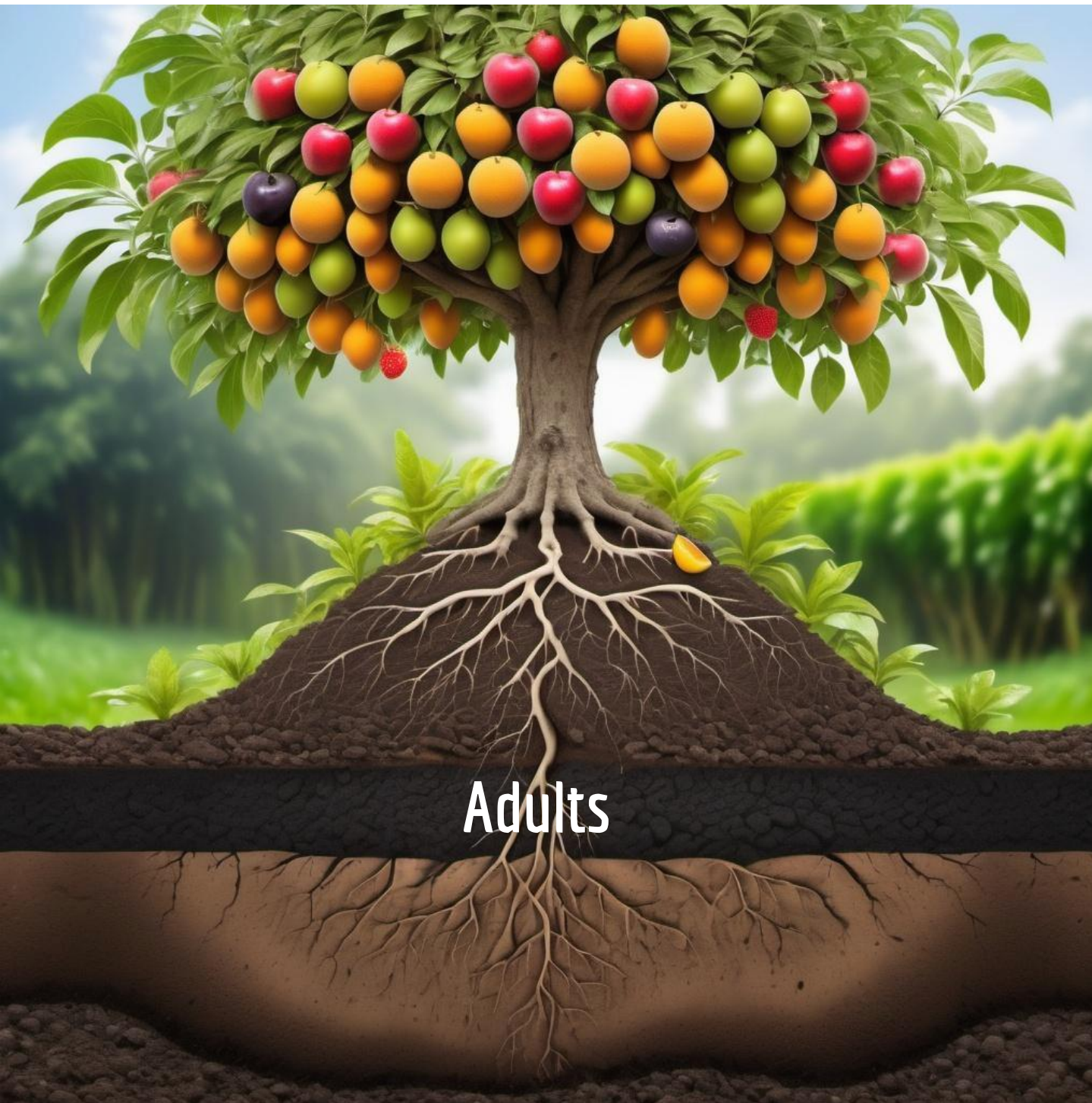


Panchkhal, Kavre, Bagmati Pradesh



Korak, Chitwan, Bagmati Pradesh

Our POs attend monthly mothers' meetings to deliver informative sessions on maternal, reproductive and neonatal health



Bagbana, Parsa, Madhesh Pradesh



Panchkhal, Kavre, Bagmati Pradesh



Korak, Chitwan, Bagmati Pradesh

We provided a 8-week long weekly workshop series to train BSc and Msc graduates in Nepal on statistics and bioinformatics, tailored for microbiome data analysis in R



Kathmandu, Bagmati Pradesh

We are providing opportunities for cutting-edge scientific research to early career researchers and established scientists in Nepal



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Ecological factors that drive microbial communities in culturally diverse fermented foods

Arya Gautam, Rahgavi Poopalarajah, Anique R. Ahmed, Bimarsh N. Rana, Tsedenia W. Denekeew, Nakyeong Ahn, Lina Utenova, Yadu S. Kunwar, Nitin N. Bhandari, Aashish R. Jha

doi: <https://doi.org/10.1101/2024.08.20.608727>

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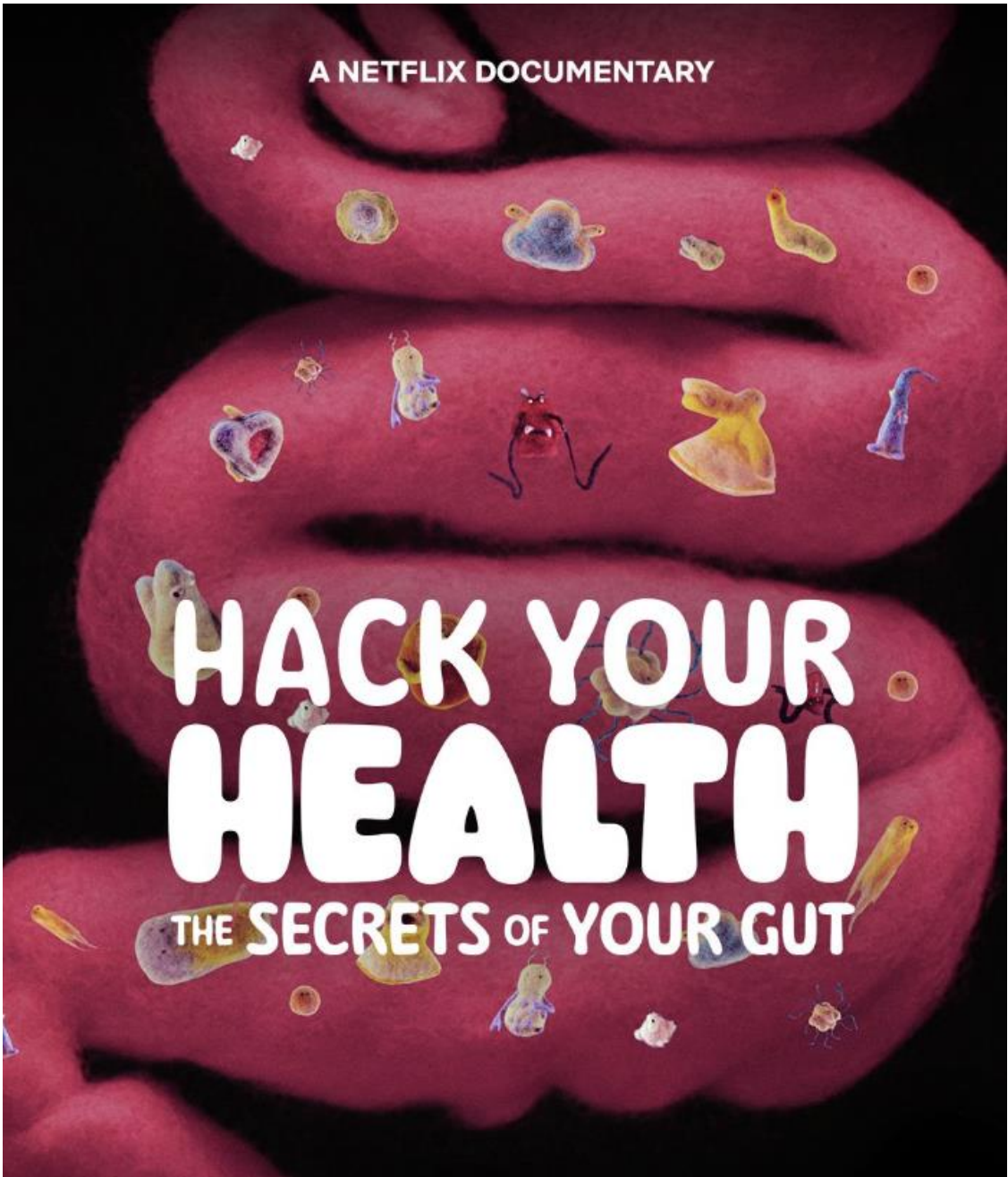
Abstract

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Our vision:

Provide opportunities to local scientists to participate in and/or lead research

Reinforce STEM education to inspire future scientists from indigenous communities

Communicate our findings with sampling communities

Tangible benefits to research participants

Acknowledgement

Sabitri Sciences

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Center for Genomics and Systems Biology, NYUAD

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Muhammad Arshad

Integrated Rural Health Development Center

Yadu Sudan Kunwar

Bimarsh Rana

Nitin N. Bhandari

Shanti Chepang

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