



Advancing Next Generation Sequencing in South Asian Region: A Residential Workshop for International and Local Attendees

Day 1:

Session 1

- Welcome address and introduction to the conference
- Keynote lecture on the history and future of Next Generation Sequencing
- Lecture on overview of the different Next Generation Sequencing technologies and their applications
- Lectures on advanced sequencing techniques (Single-cell sequencing, long-read sequencing, and metagenomics)

Session 2

- Lecture on the advantages and limitations of different techniques
- Interactive sessions on the use of advanced sequencing techniques in different research fields

Day 2:

Session 1

- Lecture on introduction to NGS sequencing techniques and theory of sample preparation, library preparation, and sequencing

Session 2

- Practical sessions on sample preparation, library preparation, and sequencing
- Case study on the use of Next Generation Sequencing in precision medicine

Day 3:

Session 1

- Lectures on Metabolomics
- Lecture on applications of Omics Technologies

Session 2

- Hands-on session on integrating omics data

Day 4:

Session 1

- Lectures on data analysis and visualization
- Lectures on introduction to the basic concepts of deep learning: neural networks, back-propagation, optimization.
- Lectures on overview of common deep learning architectures used in NGS
- A discussion on the recent advances on generative pre-trained models in natural language processing: A precursor to application of GPTs in NGS

Session 2

- Lectures on the current and future applications of Next Generation Sequencing in different research fields, such as medicine, agriculture, and environmental science
- Discussion on ethical and social implications of Next Generation Sequencing and future
- directions for advancing Next Generation Sequencing in Sri Lanka

Day 5:

Session 1

- Oral Presentations
- Poster presentations

Session 2

- Discussion with Networking dinner
- Closing remarks and Vote of thanks