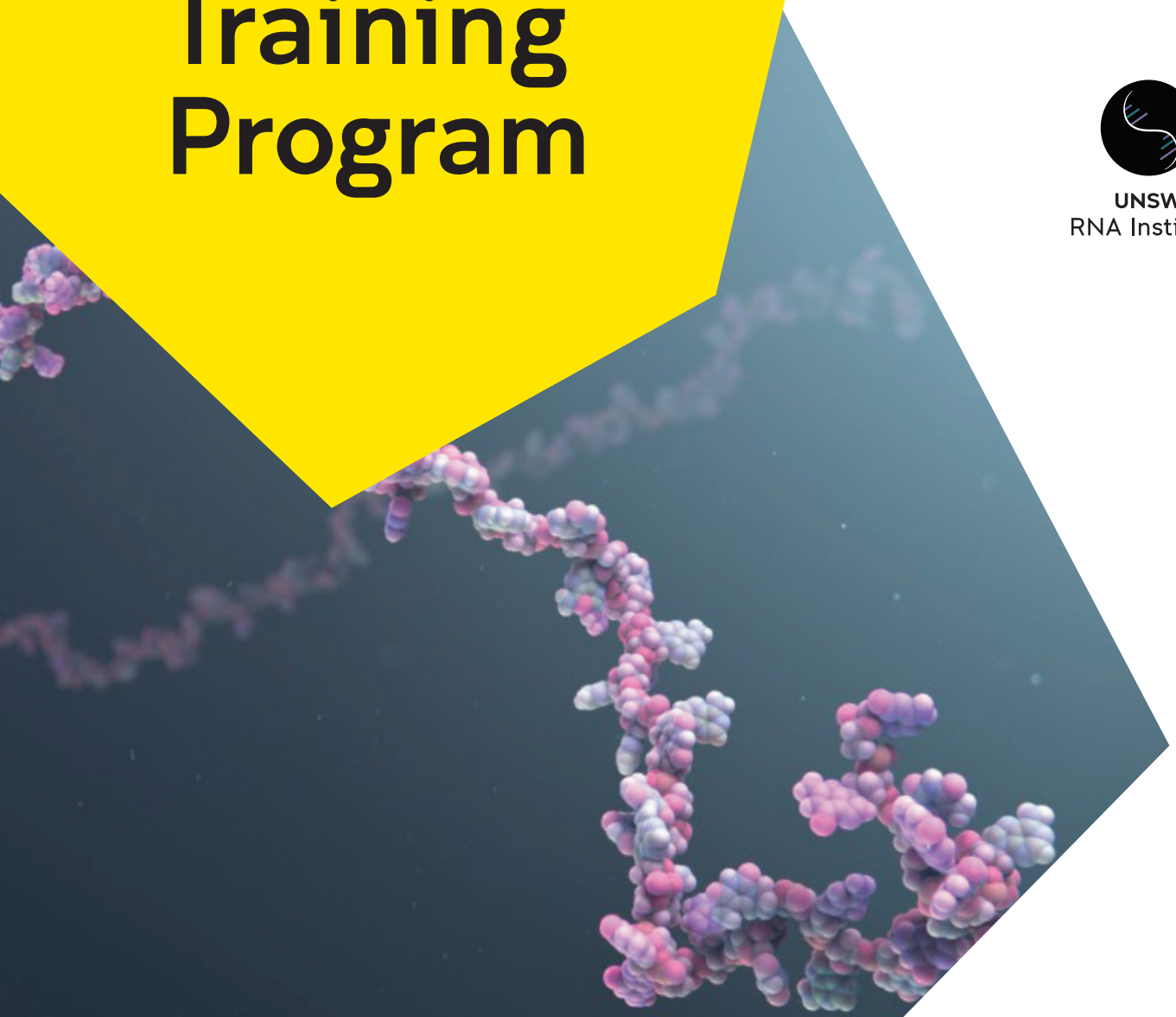
UNSW RNA Institute

Training Program



Join us at the forefront of RNA technologies and therapeutics through our exclusive week-long training program. Designed for those interested in or dedicated to RNA biomanufacturing, including researchers and professionals, our courses combine expert-led theory with hands-on lab experience in nucleic acid and lipid nanoparticle production and analysis.

UNSW
RNA Institute

Synthetic RNA/Oligos

24-28 March 2025

Dive deep into the synthesis and analysis of RNA and oligonucleotides, learning methods that bridge the gap between small-scale research and large-scale clinical manufacturing.

Plasmid & linearised DNA

12-16 May 2025

Delivered in partnership with the UNSW Recombinant Products Facility

Master the production and purification of plasmid and linear DNA – core components for gene therapy, vaccine development, and more.

mRNA

31 Mar - 4 April 2025

Gain a comprehensive understanding of mRNA technology, from synthesis to characterisation, and learn how it's revolutionising the future of medicine.

Lipid Nanoparticle Formulations

7-11 April 2025

Explore the latest advancements in lipid nanoparticle technology, with a focus on scalable formulations essential for mRNA delivery and gene therapies.

These hands-on courses provide the skills and knowledge to advance RNA technologies for research, pre-clinical, and clinical applications. Learn from leading experts and enhance your expertise in this rapidly evolving field.

Sign up now **to secure your spot!**

Synthetic Oligonucleotide Production, Purification and Quality Control

This course provides comprehensive theory and hands-on training in the chemical synthesis of oligonucleotides from handling starting materials through to purified product, with a focus on siRNA.

The course covers multiple techniques relevant from the research bench up to large-scale bioprocessing as well as basic quality control to quantify and analyse product quality. The course includes an overview of Quality Management Systems (QMS) requirements, Bioprocess Engineering and Process Development, and insights into process tech transfer to GMP production facilities.

Course Details:

5 days	
UNSW Kensington campus	
$5,000 per participant	

Course Objectives:
Give participants a combination of theory and practical, hands-on experience in producing, purifying and analysing the quality of siRNA for use in synthetic RNA therapeutics.

Learning Outcomes:
Upon successful completion of the course, participants will:

- Have a fundamental understanding of siRNA-LNP therapeutics manufacturing processes.
- Have a sound understanding of siRNA manufacturing processes.
- Have a sound understanding of siRNA purification processes.
- Have a sound understanding of siRNA quality control methods.
- Gain hands-on experience in aseptic and siRNA handling techniques.
- Gain hands-on experience in production of siRNA.
- Gain hands-on experience in purification of siRNA.
- Gain hands-on experience in quality control of siRNA.
- Have a fundamental understanding of Quality Management Systems (ISO 9001, GMP).
- Have a fundamental understanding of Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).

pDNA and linDNA Production, Purification and Quality Control

Delivered in partnership with the UNSW Recombinant Products Facility

This course provides comprehensive theory and hands-on training from e. coli based production of plasmid DNA (pDNA) through to purified, linearised DNA template (linDNA) as a starting material for mRNA production.

The course covers multiple techniques relevant from the research bench up to large-scale bioprocessing as well as basic quality control to quantify and analyse product quality. The course includes an overview of Quality Management Systems (QMS) requirements, Bioprocess Engineering and Process Development, and insights into process tech transfer to large-scale GMP manufacturing facilities.

Course Details:

5 days	
UNSW Kensington campus	
$5,000 per participant	

Course Objectives:
Give participants a combination of theory and practical, hands-on experience in producing, purifying and analysing the quality of plasmid DNA and linearised DNA template for mRNA therapeutics.

Learning Outcomes:
Upon successful completion of the course, participants will:

- Have a fundamental understanding of mRNA-LNP therapeutics manufacturing processes.
- Have a sound understanding of plasmid DNA and linearised DNA template manufacturing processes.
- Have a sound understanding of plasmid DNA and linearised DNA template purification processes.
- Have a sound understanding of plasmid DNA and linearised DNA template quality control methods.
- Gain hands-on experience in aseptic, pDNA and linDNA handling techniques.
- Gain hands-on experience in production of pDNA and linDNA.
- Gain hands-on experience in purification of pDNA and linDNA.
- Gain hands-on experience in quality control of pDNA and linDNA.
- Have a fundamental understanding of Quality Management Systems (ISO 9001, GMP).
- Have a fundamental understanding of Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).

mRNA

by in vitro enzymatic transcription

mRNA Enzymatic Production, Purification and Quality Control

This course provides comprehensive theory and hands-on training from design of RNA and DNA template constructs and production techniques from linearised DNA template starting material through to purified mRNA.

The course covers multiple techniques relevant from the research bench up to large-scale bioprocessing as well as basic quality control to quantify and analyse product quality. The course includes an overview of Quality Management Systems (QMS) requirements, Bioprocess Engineering and Process Development, and insights into process tech transfer to GMP production facilities.

Course Details:

- 5 days
- UNSW Kensington campus
- $5,000 per participant

Course Objectives:
Give participants a combination of theory and practical, hands-on experience in designing, producing, purifying and analysing the quality of mRNA for use in mRNA therapeutics.

Learning Outcomes:
Upon successful completion of the course, participants will:

- Have a fundamental understanding of mRNA-LNP therapeutics manufacturing processes.
- Have a sound understanding of mRNA manufacturing processes.
- Have a sound understanding of mRNA purification processes.
- Have a sound understanding of mRNA quality control methods.
- Gain hands-on experience in aseptic and mRNA handling techniques.
- Gain hands-on experience in production of mRNA.
- Gain hands-on experience in purification of mRNA.
- Gain hands-on experience in quality control of mRNA.
- Have a fundamental understanding of Quality Management Systems (ISO 9001, GMP).
- Have a fundamental understanding of Bioprocess Engineering and Process Development concepts.
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).

NP Formulation

lipid nanoparticle formulation suite

Lipid Nanoparticle Production, Purification and Quality Control

This course provides comprehensive theory and hands-on training in the lipid nanoparticle (LNP) formulation of RNA therapeutics from handling starting materials through to finished RNA-LNPs.

The course covers multiple techniques relevant from the research bench up to large-scale manufacturing, as well as basic quality control to quantify and analyse product quality, including particle size and encapsulation efficiency. The course includes an overview of Quality Management Systems (QMS) requirements, Quality by Design principles, Bioprocess Engineering and Process Development-Validation, and insights into process tech transfer to GMP production facilities.

Course Details:

- 5 days
- UNSW Kensington campus
- $5,000 per participant

Course Objectives:
Give participants a combination of theory and practical, hands-on experience in producing, purifying and analysing the quality of RNA-LNPs for use in RNA therapeutics.

Learning Outcomes:
Upon successful completion of the course, participants will:

- Have a fundamental understanding of synthetic RNA, mRNA and RNA-LNP therapeutics manufacturing processes.
- Have a sound understanding of RNA-LNP manufacturing processes.
- Have a sound understanding of RNA-LNP purification processes.
- Have a sound understanding of RNA-LNP quality control methods.
- Gain hands-on experience in aseptic and RNA-LNP handling techniques.
- Gain hands-on experience in production of RNA-LNPs.
- Gain hands-on experience in purification of RNA-LNPs.
- Gain hands-on experience in quality control of RNA-LNPs.
- Have a fundamental understanding of Quality Management Systems (ISO 9001, GMP).
- Have fundamental understanding of Quality by Design principles (ICH Q8)
- Have a fundamental understanding of Bioprocess Engineering, Drug, and Process Development Concepts
- Have a fundamental understanding of tech transfer from bench research to large-scale GMP manufacturing facilities.

Participants will have the option to receive a Certificate of Attendance (not assessed) or a Certificate of Completion (assessed).