Cambridge Centre for
Innovation and Development©

PROFESSIONAL DIPLOMA

LABORATORY SKILLS AND RESEARCH MANAGEMENT

10-11 Months
Online (Part-Time)

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OVERVIEW

The Professional Diploma (PD) in Laboratory Skills and Research Management is an intensive, multidisciplinary 11-month programme designed to prepare the next generation of researchers, practitioners, and innovators in biomedical science.

The Diploma in Laboratory Skills and Research Management is a comprehensive, online training programme designed to equip students, emerging researchers, and early-career professionals with both technical laboratory expertise and strategic research project management skills. Bringing together essential laboratory techniques and modern scientific oversight practices, this diploma ensures that graduates are not only confident working in clinical, academic, or industrial labs—but are also capable of leading, organizing, and executing scientific research projects with integrity, safety, and precision. Whether you're preparing for a career in biomedical science, pursuing postgraduate research, or transitioning into lab-based roles, this professional diploma provides the practical, theoretical, and administrative foundations needed for long-term success in life sciences and health-related research.

Whether you're preparing for a master's or PhD programme, or exploring research career paths, this programme provides the practical foundation and professional experience to move forward.

THE VISION BEHIND THE PROGRAMME

In today's increasingly interdisciplinary research landscape, scientists are expected to go beyond experimental technique—they must understand project timelines, budgets, regulatory frameworks, health and safety compliance, and effective team coordination. Unfortunately, traditional degree programmes often leave graduates underprepared in these areas.

Professional Diploma in Laboratory Skills and Research Management addresses this gap by combining lab-based learning with project-based leadership training. It provides in-depth instruction in key bioscience methodologies—such as cell culture, fluorescence microscopy, spectroscopy, and flow cytometry—while also guiding learners through research planning, documentation, data management, and ethics. The result is a well-rounded scientific professional: someone who is confident not only at the bench but also in the meeting room.

Professional Diploma in Laboratory Skills and Research Management offers a rare opportunity to master essential lab techniques while developing high-level project leadership abilities. With online course delivery, global accessibility, and mentorship-driven learning, it is designed to empower the next generation of scientific leaders, technicians, and research scholars.

PROGRAMME CONTENT

PART 1: LABORATORY HEALTH AND SAFETY

This training will provide you with essential skills and knowledge to work in a laboratory environment and working with animals. It will equip you with the expertise and understanding of risks in the laboratory, safety guidelines to work in the laboratory, safety issues, and working with laboratory animals for research.

To enhance your laboratory safety skills and get a research-related role, you need an understanding of safety guidelines, health and safety protocols to work in an international research environment. The aim of this training is to develop these specific skills.

Module 1: Lab Safety Rules and Guidelines:

In this module, you will learn about laboratory health safety requirements to perform experiments. You will also learn about international laboratory safety guidelines.

PROGRAMME CONTENT

Module 2: Health risks in laboratories:

You will learn about the different health risks of working in a laboratory. You will also learn different challenges or issues that may occur during laboratory work.

Module 3: Working with animals - Preclinical research:

In this module, you will learn about the guidelines of working with laboratory animals for research and animal research ethics.

PART 2: CELL CULTURE TECHNIQUES

This training will provide you with essential skills and knowledge to work in a laboratory environment and cell culture techniques. It will equip you with the expertise and

understanding of cell culture safety, cell culture techniques, issues in cell culture, and applying cell culture in biomedical research.

To enhance your cell culture skills and get a research-related role, you need specific research and laboratory skills to work in an international research environment. The aim of this training is to develop these specific skills.

PROGRAMME CONTENT

Module 1: Introduction to cell culture:

In this module, you will learn about laboratory health safety requirements to perform cell culture. You will also learn the basics of cell culture techniques and cell types.

Module 2: Cell culture techniques:

You will learn about different cell culture techniques and work with the primary cell culture or cell line. You will also learn different methods and cell culture protocols such as cryopreservation of mammalian cells or 3D cell culture.

Module 3: Challenges and issues in cell culture:

In this module, you will learn about the issues and challenges in cell culture. It will help you to avoid mistakes and errors while performing cell culture.

Module 4: Cell culture in biomedical research:

You will learn about the latest applications of cell culture techniques for research. You will also develop your research writing skills in this module.

PROGRAMME CONTENT

PART 3: SPECTROSCOPIC TECHNIQUES

This training will provide you with essential skills and knowledge of spectroscopic techniques and Nuclear Magnetic Resonance (NMR) spectroscopy. It will equip you with the expertise and understanding of different types of spectroscopic techniques and spectroscopic techniques for research. To enhance your spectroscopic skills and get a research-related role, you need specific research and laboratory skills to work in an international research environment. The aim of this training is to develop these specific skills.

Module 1: Introduction to spectroscopic techniques:

In this module, you will learn about the basics of spectroscopy and the background of spectroscopic techniques. You will also learn the science of spectroscopy.

Module 2: Types of spectroscopy:

You will learn about the types of spectroscopic techniques. You will also learn about the methods of performing spectroscopic techniques.

PROGRAMME CONTENT

Module 3: Nuclear Magnetic Resonance (NMR) Spectroscopy:

In this module, you will learn about the basics of NMR spectroscopy. It will also help you to learn about the latest NMR spectroscopic techniques for research.

Module 4: Spectroscopic techniques in research:

You will learn about the latest applications of different spectroscopic techniques for research. You will also develop your research writing skills in this module.

PART 4: FLOW CYTOMETRY

This training will provide you with essential skills and knowledge to

work in a laboratory environment and the flow cytometry technique. It will equip you with the expertise and understanding of procedure safety, flow cytometry method, instrumentation, best practices in flow cytometry, and flow cytometry for biomedical research. To enhance your flow cytometry skills and get a research-related role, you need specific research and laboratory

PROGRAMME CONTENT

skills to work in an international research environment. The aim of this training is to develop these specific skills.

Module 1: Introduction to flow cytometry:

In this module, you will learn about laboratory health safety requirements to perform the flow cytometry technique. You will also learn the basics of flow cytometry techniques.

Module 2: Flow cytometry instrumentation:

You will learn about instrumentation and equipment used in the flow cytometry technique. You will also learn different methods and the flow cytometry protocol.

Module 3: Best practices in performing flow cytometry:

In this module, you will learn about the best practices and challenges in performing the flow cytometry technique. It will help you to avoid mistakes and errors while performing flow cytometry.

PROGRAMME CONTENT

Module 4: Flow cytometry in biomedical research:

You will learn about the latest applications of flow cytometry for research. You will also develop your research writing skills in this module.

PART 5: FLUORESCENCE MICROSCOPY TRAINING

Module 4: Flow cytometry in biomedical research:

This training will provide you with essential skills and knowledge to work with fluorescent microscopes and super-resolution microscope techniques. It will equip you with the expertise and understanding of principles of fluorescent microscopy, fluorescent microscope instrumentation, super-resolution microscopes, and fluorescence microscopy for biomedical research. To enhance your fluorescent microscopy skills and get a research-related role, you need specific research and laboratory skills to work in an international research environment. The aim of this training is to develop these specific skills.

PROGRAMME CONTENT

Module 1: Principle of fluorescence microscopy:

In this module, you will learn about the principle of the fluorescence microscopy technique. You will also learn the basic science of fluorescence microscopy.

Module 2: Fluorescence microscopy instrumentation:

You will learn about the instrumentation and equipment of fluorescent microscopes such as confocal microscopes. You will also learn the difference between fluorescent microscopes.

Module 3: Super-resolution microscopy:

In this module, you will learn about the super-resolution microscopy technique. It will provide information and understanding of the latest super-resolution microscopy techniques for research.

Module 4: Fluorescence microscopy for research:

You will learn about the latest applications of fluorescence microscopy for research. You will also develop your research writing skills in this module.

PROGRAMME CONTENT

PART 6: RESEARCH MANAGEMENT

It will help you to gain knowledge in research policy and funding guidelines, and how to manage collaborations and research projects. Through the final research management project, you'll gain the essential knowledge and skills required to manage the research project and portfolio.

Module 1: Understanding research funding and research policy:

Navigate the vast landscape of research funding sources, from government agencies to private foundations and industry collaborations. Learn effective strategies for identifying and targeting relevant funding opportunities. Learn about the different policies driving research. These policies may include government initiatives, such as UKRI or EU. Also, learn about the different UK funders and guidelines. Learn how these guidelines may affect research.

Module 2: Research project management:

Dive into the foundations of strategic project planning,

PROGRAMME CONTENT

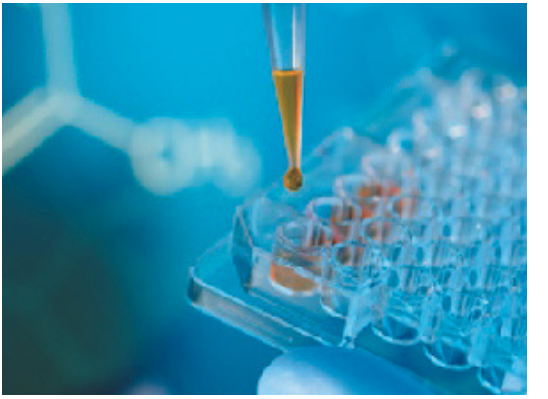
aligning your research objectives with organizational goals and stakeholder expectations. Develop a roadmap for successful project initiation and execution. Master the art of defining clear project scopes and objectives. Navigate potential risks associated with research projects. Explore proactive strategies for risk identification, assessment, and effective mitigation. This module has been designed to understand the different elements of research project management. It includes unit covers: supporting research proposal or project portfolio, management of project resources, managing risks, and budget.

Module 3: Managing collaborations and relationships:

Dive into proven strategies for fostering successful collaborations, from initial planning to sustained growth. Develop a holistic understanding of collaborative frameworks and their application in diverse contexts. Understand the nuances of professional connections and partnerships.

PROGRAMME CONTENT

Explore techniques for nurturing relationships over time, fostering trust and mutual respect. Learn to support successful collaboration and partnerships. These may include different types of organisations, such as academics or industry partners. You will gain an understanding of the challenges of working collaboratively.



Module 4: Final Project:

The final project will provide you with the opportunity to apply your research and budget management knowledge.

RESEARCH SCIENTIST WORK TRAINING

The 6-Month Online Volunteer Research Scientist Role is a prestigious, fully remote opportunity designed for individuals seeking real-world experience in laboratory-based scientific research and research project management. It is ideal for students, graduates, and early-career researchers who wish to deepen their laboratory science expertise, gain research publication experience, and engage with global peers and mentors in a structured, academically rigorous environment.

This work training complements the Laboratory Skills and Research Management Professional Diploma, offering participants an opportunity to apply what they learn in the online courses to active research projects. With a focus on core laboratory techniques, research methodology, experimental design, scientific communication, and responsible lab management, participants will develop a well-rounded profile suitable for postgraduate study, research internships, or lab-based roles in academia and industry.

This is a non-paid, volunteer role designed to be accessible, flexible, and impactful, requiring 4–6 hours per week. Participants benefit from structured training, personalized feedback, peer collaboration, and expert mentorship—culminating in research writing and publication experience. Through structured tasks, collaborative discussions, and expert guidance, participants will emerge with a stronger foundation in both the scientific and professional practices.

RESEARCH SCIENTIST WORK TRAINING

PURPOSE AND VISION OF THE ROLE

The Volunteer Research Scientist role is rooted in the belief that practical research training and laboratory skill development should be globally accessible—even for those without physical access to lab benches or research institutions.

The role is designed to:

- Translate theoretical lab knowledge into applied research tasks;
- Build competence in designing, analyzing, and managing experiments;
- Train participants to become confident, independent researchers capable of contributing meaningfully to the scientific process—even in virtual settings.

CORE COMPONENTS OF THE WORK TRAINING

1. Active Participation in Research Projects

As a Research Scientist, you will participate in research activities with focus on several research themes within the areas of biomedical and life science research. It offers a rare opportunity to build research competence, contribute to impactful scientific discussions, and develop a tangible research content under expert guidance.

You will engage in tasks such as, literature reviews, academic writing, and poster presentations. While no advanced experience is required,. Familiarity with basics of research and a foundational understanding of biology will be helpful which you will gain

RESEARCH SCIENTIST WORK TRAINING

through courses during your PD programme. Training resources will be provided to support your learning.

2. Research Writing and Scientific Communication

A distinguishing feature of this role is the opportunity to develop and write a research paper during your time in the programme. Participants will be guided through the process of academic writing, including:

- Structuring a research paper
- Writing literature reviews and abstracts
- Presenting data and analysis clearly
- Referencing and citing correctly
- Revising drafts based on feedback

Each participant will receive constructive feedback, including individualised feedback to improve clarity, coherence, and academic rigor. You will work independently on research writing tasks, which can become part of your academic portfolio or future submissions to journals or conferences.

3. Global Online Research Discussions

You will participate in regular virtual discussion sessions with other volunteer researchers from across the globe. These discussions are essential to fostering a sense of academic community, encouraging dialogue, and enhancing your ability to articulate and defend your ideas.
These discussions are moderated by experienced teachers who help guide discussions and ensure every participant is heard and supported.

RESEARCH SCIENTIST WORK TRAINING

4. Mentorship from Academic and/or Industry Experts

As part of your research training, you will have the opportunity to participate in a live mentorship session led by a senior academic based in the UK and a senior researcher working in this field. This session offers a rare chance for real-time, personalised guidance from professionals with deep experience in both scientific research and mentorship.
During this session, you will be able to:

- Ask questions about research careers, postgraduate studies, and fellowships
- Receive advice on choosing research areas, applying for PhD programmes, or transitioning into industry
- Gain insights into publishing research, building academic collaborations, and securing funding
- Learn how experts overcame their own challenges and built successful careers in this field.

These are not a pre-recorded lectures—They are live, sessions, where your questions shape the conversation. These session are arranged usually after 16:00 pm UK time. All the dates and schedule will be available on our learning platform (Moodle).

LEARNING OBJECTIVES

1 Work in clinical or research laboratories in academia, hospitals, or industry. Conduct experiments using fluorescence microscopy, flow cytometry, and spectroscopic methods.

2 Manage independent or team-based laboratory projects with strong safety protocols. Understand and implement good laboratory practice (GLP), biosafety levels, and lab safety.

3 Analyse and interpret molecular data from spectroscopy and flow cytometry experiments. Communicate findings effectively in oral and written formats, including lab notebooks, reports, and research papers.

LEARNING OBJECTIVES

4 Communicate scientific concepts effectively through writing, presentations, infographics, and digital media tailored for different stakeholders, including clinicians, patients, and regulators.

5 Conduct applied research and perform academic writing, and develop PhD and/or Master's research proposals. Design and conduct research experiments and write scientific papers. Pursue postgraduate research (MSc, PhD) with confidence in lab technique and research management.

6 Engage with academics and pursue further training or careers in academic or industry research.

CAREER AND RESEARCH OUTCOMES

Upon successful completion, participants will be prepared to pursue:

- Research assistant or lab technician roles in research labs
- Entry into Master's or PhD programmes
- Roles in the diagnostic and biotechnology industries
- Internships in translational research, biotechnology research institutes, or public health organisations

Upon completing this Professional Diploma, participants can pursue various early-career roles in academic, healthcare, and industry laboratories, including:

- Laboratory Technician
- Research Assistant
- Clinical Laboratory Assistant
- Biological Science Technician
- Pharmaceutical Lab Assistant
- Biomedical Support Worker
- Quality Control (QC) Analyst
- Public Health Laboratory Support Staff

DESIGN AND DELIVERY

This online programme is delivered on our internationally recognised virtual learning platform (Moodle). The programme is self-paced and it can be completed on your schedule within programme's duration. The programme includes recorded lectures, templates, learning material, ebooks, and research-based tasks.

This programme is designed in collaboration with our partner institute (Laboratory Skills Development Centre, London), its academic leaders from international universities, and our Research Team at the Cambridge Centre for Innovation and Development, UK.

Please see details of their collaborators on the website of the Laboratory Skills Development Centre: lsdcentre.com/collab

Please see further details about our Research Team on our website: camcid.org/groups

DUAL CERTIFICATION

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1 After completing (passing) all the parts of this programme, you will be provided with an e-certificate of completion for the Professional Diploma (PD) at the **Cambridge Centre for Innovation and Development (CamCID).**

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2 You will receive a separate e-certificate for your **Research Scientist** work at the Cambridge Centre for Innovation and Development (CamCID).

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3 You will also receive an additional e-certificate (free of cost) for completing the Professional Diploma by our partner institute, the **Laboratory Skills Development Centre, London**

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CONTACT US

Elisa Hampson
admin@camcid.org | www.camcid.org