



National Institute for
Bioprocessing Research
and Training



NIBRT Training Catalogue 2020



About Us

The National Institute for Bioprocessing Research and Training (NIBRT) is a global centre of excellence for training and research in bioprocessing. NIBRT's unique bioprocessing training facility allows trainees the opportunity to learn and practice complex technical bioprocessing procedures. NIBRT provides a range of programmes which are specifically tailored to meet the needs of trainees who wish to develop their careers in the bioprocessing industry.

www.nibrt.ie

Contents

	1. Why train with NIBRT?	4
	2. Which training programme should I choose?	5
	3. NIBRT Training Facilities	6
	4. NIBRT Training Team	8
	5. Customised Courses	10
	6. Case Study: Takeda Dunboyne Biologics	11
NEW FOR 2020	7. NIBRT Online Academy (NOA)	12
	8. Short Courses	13
	9. MSc Programmes	23
	10. Major Award Programmes	25
	11. Certificate Programmes	26
NEW FOR 2020	12. New Engineering Programmes	27
	13. Springboard+	28
NEW FOR 2020	14. Cell and Gene Therapy	29
NEW FOR 2020	15. Biopharma 4.0	30
NEW FOR 2020	16. NIBRT Global Partners Programme	32
	<i>Jefferson Institute for Bioprocessing, Philadelphia, USA</i>	32
	<i>University of Technology, Sydney, Australia</i>	33
	17. Outreach and Engagement	34
	18. Coming soon in 2020	35
	19. Contact Us	37
	20. Testimonials	38

1

Why train with NIBRT?



Welcome to the NIBRT Training Catalogue for 2020.

As the global demand for biopharma manufacturing talent continues to grow

we're delighted to present our range of training and education solutions for 2020. In 2019 we successfully delivered over 19,000 learning days to over 4,500 trainees, who come to NIBRT for many reasons including:

State-of-the-art training facilities

NIBRT's production training facility utilises best-in-class technologies covering industry relevant aspects of drug substance and drug product manufacture. Course offerings include theory and hands-on practical based modules covering a variety of disciplines from contamination control behaviours through cell culture, protein purification, aseptic processing and associated bioanalytical characterisation strategies. Our facility utilises both stainless steel bioprocessing equipment and also includes a wide range of single-use technologies. The simulated GMP nature of our facility operation allows for all our trainees to experience active and engaged learning in a real-world environment.

Customisation of training content

NIBRT course content can be tailored specifically to replicate closely our client's strategies and approach to manufacturing their respective products. This ensures that our courses have the greatest impact and benefit for all our trainees. Our courses are developed using the latest instructional design and online learning techniques to enhance the learning experience.

Competency-based learning

NIBRT's training group have developed a portfolio of industry focused training solutions that offer trainees the opportunity to engage in competency-based learning sessions. This requires that trainees fully participate and engage in sessions that encourage and facilitate active learning. Courses are designed to maximise trainees access to all equipment with a focus on the needs of the individual learner to attain their required level of competence.

Global leader

NIBRT is a global leader in biopharmaceutical manufacturing training and in 2019 we successfully delivered over 19,000 learning days to over 4,500 trainees. Our client base has included academic institutes where we support both undergraduate and postgraduate programmes within life-sciences along with a large number of national and international industrial clients.

New for 2020

Our course offering is constantly evolving and new programmes for 2020 include the launch of the NIBRT Online Academy, Cell and Gene Therapy, Biopharma 4.0 with Boston Consulting Group, Delta V training with Emerson, MSc. Immunotherapeutics, CPD Diploma in Professional Engineering & Biopharmaceutical Operations, UT Sydney joining our Global Partners Programme.

We look forward to having you attend one of our training course offerings in 2020 and to help develop your career in biopharma.



John Milne
NIBRT Training Director

2

Which training programme should I choose?

NIBRT provides a broad range of flexible training solutions to meet a diverse range of learning requirements. Please contact us at any time to discuss the most appropriate programme for you or your organisation.

Learning requirement	Recommended programme	Page
A continuous professional development programme that is accredited by QQI ¹	Certificate, Diploma, BSc and MSc options available	23-27
An online, part-time MSc programme	MSc in Biopharmaceutical Science	23-24
Continuous professional development for engineers	Diploma in Professional Engineering and Biopharmaceutical Operations	27
A practical course to provide a deeper levels of understanding on a particular topic	NIBRT short courses	13-22
An online, introduction to a broad range of biopharma manufacturing topics	NIBRT Online Academy	12
90% funded, accredited re-skilling programmes for jobseekers and those in employment	Springboard+	28
Bespoke training programmes that are customised to an organisation's requirements	Customised courses	10

Contact NIBRT:

Book a course directly via www.nibrt.ie or contact us at training@nibrt.ie or +353 1 215 8100 to speak with one of our training team. You may also wish to purchase a NOA course directly via <https://noa.nibrt.ie>

For more information, please visit our website at www.nibrt.ie. Here you will find up-to-date information about course schedules, descriptions, registration, location and contact information.

¹ <https://www.qqi.ie/>



3 NIBRT Training Facilities

The NIBRT training facility (6,500 m²) is a purpose-built, multi-functional building which replicates the most modern industrial bioprocessing facility.

At the heart of the NIBRT building is the bioprocessing pilot plant, consisting of extensive upstream, downstream, fill-finish, associated analytical facilities and process utilities for both stainless steel and single-use bioprocessing. These facilities are all operated in a realistic GMP simulated, operational manufacturing environment.

<p>Upstream</p> <ul style="list-style-type: none">+ Aseptic processing and cell culture lab+ Cell Culture Analysis: Vi-CELL XR, Vi-CELL BLU (*Beckman Coulter), YSI, Cedex HiRes, Microscopes+ Inoculum Lab & Upstream Suite+ Bioreactors: 10L+20L Biostat Cultibags, 30L & 2x150L stainless steel, 200L single use STR, perfusion system+ Harvest: disc stack centrifuge, microfiltration, depth filtration; stainless steel and single use (3M Zeta Plus, Pall Stax, Millistak+ POD (*Millipore), DiscStar Bio SD (*Filtrox))
<p>Downstream</p> <ul style="list-style-type: none">+ Protein purification lab and downstream processing suite+ Bench top UF systems and pilot scale UF/DF automated systems, 2 x automated process chromatography systems, automated column packing technologies including AxiChrom Master and column (*GE)+ Viral Inactivation Vessels, Planova cellulose filters including gold particle testing set up (*Asahi Kasei)+ 6 x Filter Integrity Testers from various vendors including AquaWIT (*Pall)+ Endress and Hauser Automated Rig

NIBRT-GE Single Use Centre of Excellence

- + Fully integrated biomanufacturing platform including Wave 25's, XDR-50 and XDR-200, ÄKTA Ready and Uniflux and associated single use technologies.
- + Quantum 600 Universal Pump (*Watson Marlow)

Fill Finish

- + Vial Filling Machine under LAF and RABS, Modular aseptic workstation with integral HPV Bio-decontamination
- + Telstar Lyobeta 3PS Lyophilisation Technology

**NEW FOR
2020**

Manufacturing Support & Utilities

- + Buffer and Media preparation suites using both Stainless steel and disposable technologies
- + Equipment preparation area including parts washer and autoclave, COP/SOP station, down flow booth preparation area
- + Central clean utilities including highly purified water, clean steam, CIP system and clean air generating systems

QC Micro & Contamination Lab and Bioanalytics Labs

- + Suite of analytical laboratories for product and process characterisation training.
- + QC Analytics: Karl Fischer, UPLC, CE, Biacore, Mass Spec, Solo VPE
- + QC Micro:
 - EM sampling - Particle Counters, Active Air samplers
 - Microscopy - Gram staining, phenotypic IDs
 - Microbial IDs - API kits
 - Bioburden testing - membrane filtration method
 - Endotoxin testing - Kinetic Chromogenic / Turbidimetric test using plate reader and handheld reader

**NEW FOR
2020**

Emerson DeltaV Control Room

- + 5 Thinclient operator stations
- + DeltaV proplus station
- + DeltaV Control Panel (S-series controllers & CHARMS I/O)

**NEW FOR
2020**

Biopharma 4.0

- + QC lab of the Future: RFID Sample identification, Dynamic Smart scheduling, AR guided QC testing
- + Evolved Upstream: Technical and behavioural VR training, Big Data analytics, AR process performance and remote maintenance
- + QA Centre: Process Mining and optimisation, Robotic Process optimisation, Scheduling and Time Management

To explore an online virtual tour of our facilities, please click on <https://www.nibrt.ie/about/> or scan the following QR code.



4

NIBRT Training Team

NIBRT's training team has a broad range of industry and academic experience, please see below for profiles of some key members of our team:



**John Milne, PhD,
Director of Training**

John has a BSc in Biochemistry and a PhD in molecular enzymology from University

College, Dublin. He has direct industry experience (15+ years) in all aspects of the manufacture of biological products including process development, optimisation, scale-up, clinical production and ensuring GMP compliance in regulated facilities. John joined NIBRT in January 2013, in the role of Training Manager and is now NIBRT Director of Training.



**Kate Cotter, PhD,
Bioprocessing
Programme Manager**

Kate has a BSc in Analytical Science from DCU and a PhD

in molecular and cellular biology from UCD. Kate specialises in cell culture and upstream processing. Coordinates training team activities and works with companies to develop customised training courses.



**Shada Warreth, BSc,
MSc, Dip.BsMgmPsysc,
Senior Bioprocessing
Trainer & Training
Coordinator**

Coordinates the training resources. Specialises in the areas of harvesting, aseptic processing, fill and finish and regulations.



**Melissa Hoare, PhD, PGDE,
Senior Bioprocessing Trainer
& Academic Coordinator**

Coordinates NIBRT's academic programmes and works with higher education institutes to develop practical based education programmes.



**Kevin Lomasney, PhD, Senior
Bioprocessing Trainer**

Specialises in the areas of final product fill and finish and upstream Processing.



**Anita Murphy, PhD, Senior
Bioprocessing Trainer**

Specialises in the area of bioanalytics, particularly quality control testing.



**Paul Adams, MSc,
Senior Bioprocessing
Trainer**

Specialises in the areas of upstream processing, viral clearance and disposable technology.



**Adam Pritchard, PhD,
Senior Bioprocessing
Trainer**

Specialises in the areas of upstream processing, advanced therapy medicinal products and disposable technologies.



**Aoife Barron, BSc,
Senior Bioprocessing
Trainer**

Specialises in the areas of Aseptic Processing, Fill Finish and QC Microbiology and leading the creation of an Industry 4.0 Innovation Centre at NIBRT.



**Maja Kristek, PhD,
Senior Bioprocessing
Trainer**

Specialises in the area of bioanalytics and quality control.



**Tadeusz Tazbierski, MSc,
Bioprocessing Trainer**

Specialises in the areas of upstream processing and disposable processing.



**Patrick Torrie, BSc,
Bioprocessing Trainer**

Specialises in the areas of process automation, upstream and downstream processing.



**Carl Bermingham, MSc,
Bioprocessing Trainer**

Specialises in the areas of Upstream Processing and Disposable Technology.



**Eoin Gunnigle, PhD,
Bioprocessing Trainer**

Specialises in the areas of QC Microbiology and Bioanalytics.



**Aoife Kearney, PhD,
Bioprocessing Trainer**

Specialises in the areas of downstream processing and protein purification.



**Robert Byrne, BSc,
Bioprocessing Trainer**

Specialises in the areas of downstream processing and disposable technologies.



**Dermot O'Sullivan, PhD,
Bioprocessing Trainer**

Specialises in the areas of Upstream Processing & Fill Finish.



**Úna McVeigh PhD,
Bioprocessing Trainer**

Specialises in the areas of downstream processing and bioanalytical testing.



**Gillian Casey, PhD,
Bioprocessing
Trainer**

Specialises in the area of bioanalytical testing.



**Alex Ostropolska, MSc,
Online Training Specialist**

Specialises in the area of online training for the NIBRT Online Academy.



Stephen McCann, MSc

Specialises in Bioprocessing technology.

5 Customised Courses

NIBRT specialises in designing, developing and delivering customised training programmes to meet the requirements of industrial clients. All aspects of the course can be customised in discussion with the client including:

<p>Customised Content</p> <ul style="list-style-type: none"> + We will develop and implement course content to your specifications in order to replicate how operations, processes and procedures are applied in your organisation.
<p>Customised Scheduling</p> <ul style="list-style-type: none"> + We can organise training courses to suit your business priorities and work schedules.
<p>Customised Delivery</p> <ul style="list-style-type: none"> + NIBRT can deliver courses to clients via online learning or by on-site visits if required.



Customised training solutions delivered for the clients above in 2019

6

Case Study

Takeda Dunboyne Biologics

Takeda have invested over \$600M in a new state-of-the-art biologics facility in Dunboyne, Co. Meath, Ireland. This single-use and paperless facility will provide significant flexibility to meet the growing demands of biologic products and will be fully operational in 2020. Takeda Dunboyne Biologics will be at the cutting edge of innovation in the biopharmaceutical industry with a biologics product portfolio that delivers the most innovative product for our patients.

Takeda's vision is to create a highly committed, agile team of champions, delivering life-changing medicines to our patients where our learning environment provides individuals the opportunity to reach their full potential, where customer value is constantly changing and our thinking is at the edge of next.

To achieve this vision, Takeda developed an innovative collaboration with NIBRT:

- + To design, develop and deliver customized training programmes to enhance the biomanufacturing skills of the Takeda teams by leveraging the NIBRT-GE Single Use Technology Centre of Excellence, and Emerson manufacturing automation suite.
- + To setup a laboratory in NIBRT with Takeda qualified equipment to implement the Quality Control (QC) Teams training in NIBRT and on return to Dunboyne to successfully fast-track the technology transfer process.

- + To train the agile teams in the NIBRT facility including Manufacturing, Engineering, Facilities, Micro and Support Teams.
- + To base 20 QC employees at the NIBRT facility for nearly 12 months to support our start-up activities in Dunboyne.
- + To host Takeda Careers in Biopharma events at NIBRT to help hire the best scientific and engineering talent.

"Well done team Dunboyne on great partnership with NIBRT - great example of win:win partnership all round. How great to see how good honest partnerships flourish when based on solid values and shared values - well done all concerned and thanks for keeping our learning organization principles front & centre in this journey"

Ann Lyons, Head of Learning, GMS at Takeda

"Thank you to the great team at NIBRT for supporting the start-up at Dunboyne. We look forward to continuing to build on this important partnership to deliver our workplace of the future."

Susan Hynes, VP and Site Lead Takeda Dunboyne Biologics

The Takeda Dunboyne Biologics team at NIBRT



**Winner of the 2019
Invest in Ireland Staff
Upskilling Award**



Invest
in Ireland
AWARDS

7 NIBRT Online Academy (NOA)

**NEW FOR
2020**

The NIBRT Online Academy (NOA) provides industry leading, elearning courses on key aspects of biopharma manufacturing.

NOA courses can be accessed online (<https://noa.nibr.ie>) on a range of devices to provide “just in time” learning in an engaging, stimulating format. NOA courses can also be installed on Client’s Learning Management Systems, with individual and group pricing options also available.



NOA elearning courses: release dates		
October 2019	January 2020	April 2020
Biotechnology and Biopharmaceuticals	Cell Biology and Recombinant DNA Technology	Bioreactors in Bioprocessing
Overview of Biopharmaceutical Manufacturing	Fermentation in Biopharmaceutical Manufacturing	Downstream Processing: Centrifugation
Cell Culture in Biopharmaceutical Manufacturing	Downstream Processing: Ultrafiltration and Diafiltration	Aseptic Processing - Gowning
Downstream Processing: Protein Purification - Chromatography	Freeze Drying	Aseptic Processing – Decontamination and Sterilization Technologies
Formulation in the Biopharmaceutical Industry	Aseptic Processing – Contamination Control	Clean In Place
Aseptic Processing – Concepts and Controls	Process Validation: Process Qualification and Control	Aseptic Processing - Cleanrooms and Control Technologies
Process Validation: Process Design		

8 Short Courses

NIBRT's highly popular portfolio of short, intensive courses provides:

- + Access to state-of-the-art NIBRT facility and equipment
- + Focus on the equipment and solutions to the real challenges you face in your own workplace
- + Opportunities to share experiences with people from a variety of organisations
- + Undisturbed time for training away from workplace interruptions

The current schedule for short courses in 2020² is shown below:

Course	2020 dates	€
NEW FOR 2020 Introduction to Single Use Technologies in the Biopharmaceutical Industry	+ May 05+06 + September 03+04	€1,500
Introduction to Bioprocessing for Non-Scientists	+ April 30+May 01 + September 01+02 + December 01+02	€600 per day
Introduction to Downstream Processing Operations	+ February 05+06 + May 20+21 + July 15+16 + September 16+17 + December 9+10	€1,500
Introduction to Fill Finish Operations	+ February 17 – 19 + May 25 – 27 + July 20 – 22 + September 21 – 23 + December 14 – 16	€2,250
Introduction to QC Micro	+ May 06 + September 01	€750
Introduction to Upstream Processing Operations	+ February 03+04 + May 18+19 + July 13+14 + September 14+15 + December 7+8	€1,500
Navigating QC Testing for Biologics and Biosimilars	+ May 06 – 08 + October 06 – 08	€2,250
QC Micro Skills for Biopharma	+ June 09 – 11 + September 29 – October 01	€2,250

² All price and course details are correct at time of publication but are subject to change, please refer to <https://www.nibr.ie> for the most current information or contact training@nibr.ie

NIBRT Partner Short Courses

	Course	2020 dates	€
	BPS Crowthorne Lyophilisation technology: Products, Process and Systems	+ March 11 – 13	€2445 (Early Bird discounts available)
	CCMI and NIBRT Fundamentals of Stem Cell Therapy Manufacture	+ May 11 – 15 + September 21 – 25	€3500
NEW FOR 2020	CfPIE Technical Writing for the Pharmaceutical, Medical Device and Biotech Industries	+ March 11 – 13	\$2650 (Early Bird discounts available)
NEW FOR 2020	CfPIE Writing Effective SOP and Other Process Documents	+ March 09 – 10	\$2150 (Early Bird discounts available)
	Engineers Ireland	+ January 23 + February 20 + March 26 + April 22 + May 21 + June 25 + July 23 + August 27 + September 24 + October 22 + November 26 + December 17	€450 EI Members €550 Non-Members
NEW FOR 2020	GE Fast Trak Advanced cell therapy technology	+ January 28 – 30 + June 09 – 11 + October 06 – 08	€2,960
NEW FOR 2020	Human Factors in Life Sciences. Connect Academy Human Factors in Life Sciences	+ March 31 + July 02	€900
	Inspired Pharma Pharmaceutical GMP Auditor /Lead Auditor	+ June 22 – 26	€3295
	Kaye Amphenol Introduction to Thermal Validation	+ March 12 + October 15	€500
	NSF GMP for Biological and Biotechnology Products	+ July 14 – 17	€2,900
	STERIS Life Sciences Cleaning Validation Masterclass	+ June 24 – 25 + October 28 – 29	€1,550

QC Micro Skills for Biopharma

Course Descriptor	This comprehensive 3-day course is designed to equip QC Microbiology analysts with the main theory and practical experience required to develop their skills in a GMP biopharmaceutical microbiology laboratory. The course will cover microbiology basics as an introduction to the remaining classroom-based lectures and lab-based practical sessions, including Growth Promotion Testing and BIs, Environmental Monitoring and Water Testing, Microbial Identifications, and Adventitious Agents testing. The course will also cover a regulatory overview of micro lab requirements as well as how to approach common lab deviations.
Who should attend	<p>QC Micro personnel looking for a refresher or introduction to the relevant theory and practical elements of common microbiology lab tests.</p> <p>Lab management personnel who want to refresh their knowledge on testing protocols and regulatory requirements.</p> <p>QA, Manufacturing or Engineering personnel who have an invested interest in what happens in a QC Micro lab.</p>

**NEW FOR
2020**

Introduction to Bioprocessing for Non-Scientists

Course Descriptor	<p>This course is designed to give attendees an overview of the main processes involved in biopharmaceutical manufacturing.</p> <p>Day 1 of the course covers theory introducing the biopharmaceutical industry and the main processes including upstream, downstream and fill finish operations. The course includes interactive tours of the NIBRT training facility covering the pilot plant processing suites, single use and utilities areas.</p> <p>Day 2 of the courses is an optional add-on day focussing on hands on practical sessions in upstream, downstream and fill finish processing activities.</p>
Who should attend	This course is designed to give anyone working in or looking to move into areas associated with the Bioprocessing industry a good overview of the operations involved. E.g. Recruitment personnel, business and finance teams, suppliers & vendors sales teams etc.

Introduction to Downstream Processing Operations

Course Descriptor	This course is designed to deliver an introduction to the typical downstream operations used in a biopharmaceutical production process. This course includes both hands-on practical and lecture components covering topics such as ultrafiltration/diafiltration, viral clearance and chromatography. During this course trainees will be introduced to the basics of UF/DF and chromatography in a theory session before building on this knowledge and performing these operations using a practical component.
Who should attend	Suitable for: operators, technicians, engineers & managers This course is designed for those that are new to downstream processing including operators, technical staff, engineers and managers who need to increase their basic knowledge of actual operations in a modern downstream processing biopharma plant.

Introduction to Fill Finish Operations	
Course Descriptor	This three day programme is designed to provide an introduction to current aseptic techniques related to working in an aseptic filling environment. This blended programme provides both a theoretical introduction to contamination control, environmental monitoring, filter integrity testing and filling systems, while also allowing trainees hands-on interaction with both isolator and RABs units while conducting glove integrity tests, media fills and troubleshooting. An introduction to Grade B gowning will also be included in the programme.
Who should attend	Manufacturing QA/QC Engineering Technicians Specialists Operators.
Introduction to QC Micro	
Course Descriptor	This one-day course is designed to provide the trainee with an introduction to microbiology and its practical application in a GMP biopharmaceutical manufacturing environment. Classroom-based lectures and hands-on practical sessions will introduce the aseptic practices of environmental monitoring and water sampling as well as the use of common microbiology lab equipment such as BSCs, microscopes and gram staining equipment.
Who should attend	New recruits to QC who are looking to familiarise themselves with the theory and practical elements of standard micro testing. Lab management personnel who want to refresh their knowledge on testing protocols and requirements. QA, Manufacturing or Engineering personnel who have an interest in what happens in the laboratories.
Introduction to Single Use Technologies in the Biopharmaceutical Industry	
Course Descriptor	Single Use Technology is widely used within the biopharmaceutical industry and has quickly become a mainstay within the sector. This training programme will highlight the readily available technologies that can be implemented in upstream and downstream processing. It will allow trainees to gain hands on experience of common disposable technologies used in upstream and downstream processing including bioreactors, chromatography systems, UFDF systems, connects/disconnects and tube welders and sealers.
Who should attend	This course is designed for those that are new to the use of single use technologies, including development scientists, process engineers, and manufacturing operators. It is expected that attendees will have a basic knowledge of the manufacturing process prior to attending the course.

Introduction to Upstream Processing Operations

Course Descriptor	This two day course provides an introduction to the typical upstream operations carried out in a biopharmaceutical manufacturing facility. This course will include both hands-on practical and theory components. During this course trainees will be introduced to cell culturing techniques using small scale shake flasks. Trainees will then gain hands on practical experience using both stainless steel and disposable bioreactor systems. Trainees will prepare and run a steam in place cycle on a stainless-steel bioreactor and then inoculate a production batch into a stainless steel bioreactor.
Who should attend	This course is designed for operators, technical staff, engineers and managers wishing to increase their knowledge of the upstream operations in a modern bioprocessing plant.

Navigating QC Testing for Biologics and Biosimilars

Course Descriptor	This three-day course guides trainees through the Critical Quality Attributes of biologics (ICH Q6B) as well as core analytical platforms routinely employed in a QC testing environment in order to measure them. Using a combination of lecture sessions and hands-on practical training, the course will cover methods such as electrophoretic separations (capillary electrophoresis, slab gels), HPLC/UPLC methods (peptide mapping, SEC, etc), nanoDSF (label-free nanoscale Differential Scanning Fluorimetry) and immunoassays (ELISA).
Who should attend	This course is suitable for graduates seeking to gain entry into the area of biopharma QC, those currently working in QC/QA (small molecule or large), those working in product or process development/characterisation or anyone looking to increase and expand their understanding of QC testing for biologics and biosimilars.

NIBRT Partner Short Courses

BPS Crowthorne Lyophilisation technology: Products, Process and Systems	
Course Descriptor	This course provides a comprehensive insight into a wide range of elements in freeze drying, including details on the concepts and practical aspects of each step of the process, principles and methodologies for formulation development and characterization. Additionally, it covers approaches to cycle development and scale-up including Quality by Design, fundamental equipment features of refrigeration, vacuum and control systems i.e. PAT tools, and aspects of troubleshooting, maintenance and qualification.
Who should attend	Suitable for people working in biotechnology, pharmaceuticals, freeze drying formulation and cycle development, diagnostic industries.

CCMI and NIBRT Fundamentals of Stem Cell Therapy Manufacture	
Course Descriptor	<p>Stem Cell Therapy is an area of increasing investigation and investment as a treatment option for patients with a previously unmet clinical need.</p> <p>This training programme, presented as a collaboration between the Centre for Cell Manufacturing Ireland (CCMI) and NIBRT, will cover all aspects of stem cell therapy manufacture. It will allow trainees to gain hands on experience of cell vial thaw, initial seeding, expansion and cryopreservation as well as the associated equipment required to carry out these tasks. In addition, trainees will gain insight into the morphology of stem cells and indications of cell culture contamination, allowing them to identify and troubleshoot potential issues.</p>
Who should attend	This course is designed for those that have some knowledge of cell culture techniques but would like to specifically learn how stem cell therapy manufacture is conducted. This course would be ideally suited to graduates with a cell culture background or cell culture technicians from a biologics manufacturing setting.

**NEW FOR
2020**

CfPIE Technical Writing for the Pharmaceutical, Medical Device and Biotech Industries	
Course Descriptor	This medical writing course's notes and interactive exercises address how to write effective correspondence and reports in support of the company's activities. You will learn how to organize and deliver information for the intended audience, as well as how to write clear and readable documents, and how to revise and refine your own and others' writing. The course provides an overview of sound grammatical conventions, addresses problematic areas of the English language, and affords opportunities to address specific language issues.
Who should attend	Scientists, engineers, and technicians in research and development will find this medical writing course valuable, as will quality assurance (QA), information technology (IT), manufacturing, and other operations professionals. This technical writing training course is also useful for administrative staff that must prepare documentation in support of R&D and operations activities. Additionally, the course is helpful for anyone who wants an in-depth and comprehensive overview of the structure of the language and writing within the broad range of reporting that the industry requires.

NEW FOR
2020

CfPIE Writing Effective SOP and Other Process Documents

Course Descriptor	This course presents a comprehensive overview of process writing that the binding regulations require. This course presents process writing within the “big picture” of controlled documentation and gives industry standards for delivering information. Participants will learn how to write documents that ensure consistency in operations. A workshop in process writing gives participants the opportunity to actually write about a process and then assess the results.
Who should attend	This is a course for people who must write process documents required by the binding regulations. These documents include Standard Operating Procedures (SOPs); policies; work instructions; laboratory methods; emergency action, chemical hygiene, animal husbandry and other plans; and quality manuals. This course is valuable for pharmaceutical, medical device, and biotech professionals in drug discovery, product development, quality assurance, clinical testing, information technology, and regulatory affairs. It is also helpful for senior and middle management executives who want to familiarize themselves with the regulations that mandate procedures and the industry standards for writing them, putting them in place, and remaining compliant.

NEW FOR
2020

GE Fast Trak Advanced cell therapy technology

Course Descriptor	This course provides both classroom and laboratory instruction within cell therapy processes and cell manufacturing under good manufacturing practice (GMP) procedures. Divided into upstream, cell expansion, and downstream applications, practical laboratory sessions will provide beginning-to-end technical knowledge and training on industry standard equipment and reagents. Guidance to Standard Operating Procedures (SOP) development will also be discussed. Templates for SOPs are provided upon request.
Who should attend	This training course will be useful for research and development scientists, process engineers, and manufacturing technicians. A basic understanding of cell culture and corresponding techniques is required for this course.

Connect Academy Human Factors in Life Sciences

Course Descriptor	Participants will gain an understanding about how human factors play an important role in performance and efficiency in life science companies. The course deals with how variables like the physical environment, the systems we use and design factors can impact on or enhance human performance. Participants will also gain an understanding of how the human brain responds to and deals with particular situations and how these responses relate to performance and efficiency.
Who should attend	The training will be useful for all leaders and personnel with an organisational goal of human error reduction. The learnings are applicable to all industries. The training is particularly useful for personnel from Training, Quality, Manufacturing, Engineering and Regulatory functions.

**Inspired Pharma
Pharmaceutical GMP Auditor /Lead Auditor**

Course Descriptor	This is a unique training course for pharmaceutical auditors who will audit against pharmaceutical Good Manufacturing Practice (GMP) and/ or audit suppliers to pharmaceutical manufacturing sites. The course trains auditors how to professionally plan, perform, report and follow-up internal and supplier audits and is set in a pharmaceutical context throughout the whole course.
Who should attend	Our GMP Auditor/Lead Auditor Course is aimed at internal and supplier auditors along with key personnel involved in Quality Assurance and Quality Management Systems. The course will also benefit those involved in the purchasing of incoming materials and individuals who look after the whole supply chain. Additionally, the course is ideal for trainee Qualified Persons (QPs) as well as existing auditors who have had no formal auditor training. The course may be used as part of Continual Professional Development (CPD) of many quality professionals.

**Kaye Amphenol
Introduction to Thermal Validation**

Course Descriptor	This one-day intensive course provides a detailed insight into the history, current trends, regulatory requirements, and methodologies of Thermal Validation. Dennis Plante is the Senior Validation Market/Product Specialist for Kaye instruments located in Billerica MA. With his engineering background and his 37+ years with Kaye Instruments, Dennis has a deep understanding of the applications, regulatory requirements and process technologies related to Thermal Validation.
Who should attend	Validation engineers and managers wishing to further their understanding of all aspects of Thermal Validation.

NSF**GMP for Biological and Biotechnology Products**

Course Descriptor	Our biotech training course discusses and interprets the cGMP requirements for each step involved with process development, validation, control, auditing, and effective quality assurance (QA) and quality control (QC). We run process simulations and have detailed discussions that promote understanding about risk assessment, deviation investigation and batch dispositioning. This course also provides a unique insight into assuring GMP for biological products when working alongside experts in the field across a complex process train.
Who should attend	The course is designed to support trainee EU Qualified Persons as part of their QP application or as a valuable, highly focused continuing professional development event. NSF designed the course to give production, QA, QC and technical services staff detailed insight into the challenges of producing and testing biotech and biological pharma products.

STERIS Life Sciences**Applied Cleaning Validation Practises**


Course Descriptor	This 2-day intensive course presented by industry experts from Steris Life Sciences addresses industry practices, regulatory expectations and trends in cleaning and cleaning validation. It is designed for biopharmaceutical manufacturers who are concerned about developing or maintaining a high-quality, efficient, and most importantly, compliant cleaning process. The training will address current challenges in cleaning and validation in the biopharmaceutical industry, and include case studies, best practices, and practical based hands on sessions with process scale bioprocessing equipment.
Who should attend	Suitable for professionals within Quality Assurance, Regulatory, Quality Control, Validation, Operations, Microbiology, Facilities Maintenance, Engineering, and Plant Management.


Professional Certification of Role Based QRM Competencies: Course A: Understanding Your Role in the Management of Risk for SME's


Course Descriptor	<p>Through industry research conducted by the Pharmaceutical Regulatory Science Team (PRST) at TU Dublin a professional certification programme for QRM has been developed based on a role-based competency model for life science professionals working in the biopharmaceutical sector.</p> <p>Course A has been specifically developed for Subject Matter Experts (SME's) working across the end-to-end product manufacturing lifecycle.</p> <p>International regulators have been consistent in questioning the effectivity of the approaches for assessing and managing product quality risks and patient safety in use in industry today. Course A is one of a series of courses that have been designed to address this gap by developing a tiered <i>Professional QRM Competency Certification Programme</i> for seven defined roles within the life science sector.</p> <p>This 3 day training course will include a mix of the theory of risk science and risk management, interactive workshops, risk case studies and role play and will prepare SME's working in the biopharmaceutical sector for the assessment at 'Bronze Level' certification of professional competencies in QRM.</p>
Who should attend	<p>SME's working in any of the functional or cross-functional roles within the biopharmaceutical sector, including:</p> <p>Process Technologists in Operations, Manufacturing & Technology (M&T) Support SMEs, Product Stewards, Technology Transfer SMEs, Validation Specialists / Continued Process Verification (CPV) Support/ Data Scientists, QA Specialists / QPs, QC Analytical Specialist / Analytical Method Developers, Engineering SMEs in projects and maintenance, Supply Chain Specialists, Operational Excellence / Continuous Improvement SMEs</p>
When	<p>14-16 September 2020</p>
Fee	<p>€2,250</p>


9 MSc Programmes

NIBRT is pleased to partner with Irish Universities and Institutes of Technology to provide a range of MSc programmes. These MSc programmes include options to study online, full-time or part-time:


M.Sc. in Biopharmaceutical Science		ONLINE
Description:	This post-graduate programme in biopharmaceutical science aims to provide students with a comprehensive grounding in critical aspects of biopharmaceutical processing and their support services.	
Duration:	A part-time programme delivered by online learning which can be completed in a 2 – 3 year timeframe.	
Price:	€12,000 (EU students)	
Accrediting body:	IT Sligo (Level 9 90 credits)	
Delivery:	Online	

M.Sc. in Biopharmaceutical Processing (by research)		ONLINE
Description:	This M.Sc. in Biopharmaceutical Processing involves study of the discovery, development and processing of biopharmaceutical drug products. Students complete a range of online modules that have been designed in conjunction with the biopharmaceutical industry, while also completing a significant research project in an applied biopharma area.	
Duration:	A part-time programme delivered by online learning which can be completed in a 2 – 3 year timeframe.	
Price:	€8,500 (EU Students)	
Accrediting body:	IT Sligo (Level 9 90 credits)	
Delivery:	Online	


M.Eng.Sc. in Biopharmaceutical Engineering	
Description:	This advanced postgraduate degree programme offers a combination of lectures, tutorials, practical sessions and project work delivered by university and industry experts.
Duration:	The full time programme is completed in one year, and part-time programme can be completed in a 2 – 3 year timeframe.
Price:	€6,195 per year (part-time students) €7,830 full time EU students
Accrediting body:	University College Dublin (Level 9 90 credits) 
Delivery:	Classroom

M.Sc. in Bioprocess Engineering³	
Description:	The M.Sc. is an interactive and dynamic programme that will develop students' knowledge and appreciation of the conceptual and factual basis for bioprocess design and operation.
Duration:	The programme is offered on a one year full-time basis, and up to four year part-time basis.
Price:	€6,277 (full time EU students)
Accrediting body:	Dublin City University (Level 9 90 credits)
	
Delivery:	Classroom

**NEW FOR
2020**

Master of Science/ Postgraduate Diploma (MSc/PgD) in Biopharmaceutical Technology	
Description:	Conceived in response to increasing job opportunities within Ireland's biopharmaceutical sector, this M. Sc in Biopharmaceutical Technology builds on biotechnology expertise and industry links that have been developed over the past 20 years and includes classes and laboratory sessions at AIT, site visits to local biopharmaceutical plants and guest lectures delivered by people at the cutting edge of the biopharmaceutical industry, in addition to students receiving practical training at the National Institute for Bioprocessing Research & Training (NIBRT) in Dublin.
Duration:	One year full time.
Price:	€7,800
Accrediting body:	Athlone Institute of Technology (Level 9 90 credits)
	
Delivery:	Classroom

**NEW FOR
2020**


MSc. in Immunotherapeutics	
Description:	The MSc in Immunotherapeutics in the School of Biochemistry & Immunology is a new, innovative and multidisciplinary 90 ECTS 1 year full time masters programme specifically designed for biological, medical, dentistry, engineering and veterinary graduates who wish to enter the pharmaceutical industry.
Duration:	One year full time.
Price:	€10,815 for EU students €21,630 for non-EU students
Accrediting body:	Trinity College Dublin (Level 9 90 credits)
	 Trinity College Dublin Coláiste na Tríonóide, Baile Átha Cliath The University of Dublin
Delivery:	Classroom


³ Winner of Postgraduate Course of the Year Award in Health Sciences at the Gradireland Higher Education Awards 2017 and 2018.



10 Major Award Programmes

NIBRT’s major award programmes are delivered by online learning techniques. These programmes are accredited by the Institute of Technology Sligo including hands-on practical training in the NIBRT biopharmaceutical plant.

B.Sc (Hons) in Biopharmaceutical Science	
Description:	This graduate programme in Biopharmaceutical Science aims to provide students with a comprehensive understanding of the critical aspects of Biopharmaceutical Processing and Support Services, with specific focus on the product lifecycle of Biological products and associated processes.
Duration:	2 years part-time
Price:	€9,000
Accrediting body:	IT Sligo (Level 8 60 credits) 

B.Sc in Biopharmaceutical Science	
Description:	This programme in Biopharmaceutical Science aims to provide students with the knowledge, know-how, training and practical experience to enable them to gain employment in the Biopharmaceutical or Biomedical industries.
Duration:	2 years part-time
Price:	€7,200
Accrediting body:	IT Sligo (Level 7 60 credits) 



11 Certificate Programmes

NIBRT and IT Sligo have aligned to provide certificate programmes that are short, accredited programmes designed in association with industry partners. These programmes focus on upskilling students on the key competencies required for biopharmaceutical manufacturing. These part-time programmes are delivered via a blend of online learning with IT Sligo, and practical modules in the NIBRT facility.

Programme Title	Level	ECTS Credits	Cost
Certificate in Biopharmaceutical Science	L9	30	€6,000
An online, part-time MSc programme	L9	30	€6,000
Certificate in Bioanalytical Techniques	L9	10	€2,000
Certificate in Biopharmaceutical Science	L8	30	€5,600
Certificate in Bioprocessing Technologies	L8	30	€5,600
Certificate in Biopharmaceutical Processing	L7	30	€4,500
Certificate in Bioprocess Engineering	L7	30	€4,500
Certificate in Biopharmaceutical Processing	L6	30	€3,150
Certificate in Aseptic Operations	L6	30	€3,150



12 New Engineering Programmes

NEW FOR
2020



CPD Diploma in Professional Engineering and Biopharma Operations

The CPD Diploma in Professional Engineering & Biopharmaceutical Operations is a new 12-month programme, developed in collaboration with NIBRT for Engineers who are committed to developing their competences as a professional and seeking an introduction to the world of Biopharmaceutical Operations.

The programme is accredited by Technological University Dublin (TU Dublin) as a Level 9 programme worth 30 ECTS upon completion.

This new programme is a variant of the Engineers Ireland's long running CPD Diploma in Professional Engineering programme with the addition of a module focussing on Biopharmaceutical Operations. This Biopharmaceutical Operations module will cover such topics as Cleanroom Operations, Facility Design as well as Upstream and Downstream Processing. Training days relating to this module will be delivered at NIBRT's state of art bioprocessing facility. The remaining modules of the programme; Engineering Project Management, Effective Leadership: Analysis to Action, Finance, Risk Analysis, Advanced Presentation Skills and Team Project will be delivered in Engineers Ireland's training facility.

The overall cost for a participant to complete the CPD Diploma in Professional Engineering & Biopharmaceutical Operations is €4,750.

New for 2020 TU Dublin Graduate Internship Programme



The School of Chemical and Pharmaceutical Science TU Dublin are partnering with NIBRT and selected biopharmaceutical companies to offer an internship for Science and Engineering Graduates.

The Graduate Internship in Validation Technology is designed to allow graduates to gain the skills and education needed to take up validation roles in the biopharmaceutical industry.

This programme presents is a clear opportunity to address an unmet need by developing a pathway for qualified graduates who wish to pursue a career in validation. Successful students complete a preemployment module consisting of both practical and workshop sessions in NIBRT, in addition to online academic modules, prior to an internship commencing in a biopharmaceutical facility (one year duration). Upon completion, graduates have completed a 1 year internship in validation in a biopharmaceutical industrial environment along with a 30 credit Postgraduate Certificate in Validation Technology.

To apply for the Internship Programmes please contact training@nibrt.ie

13 Springboard +

What is Springboard+?

Springboard+ is an upskilling initiative in higher education which offers courses at certificate, degree and masters level leading to qualifications in areas where there are employment opportunities in the economy.

Springboard+ is co-funded by the Government of Ireland and the European Social Fund as part of the ESF programme for employability, inclusion and learning 2014-2020.

How much does the programme cost?

- + Courses are free for unemployed jobseekers.
- + For employed participants on courses NFQ L7 – L9, 90% of the course fee will be funded, with participants required to contribute just 10% of the programme fee.

NIBRT and Springboard+

NIBRT's Springboard+ programmes are designed in conjunction with the biopharmaceutical industry, and aim to provide participants with the knowledge and skills required to become part of the biopharmaceutical and biotechnology workforce.

- + NIBRT Springboard+ graduates have a strong track record of obtaining employment in the biopharmaceutical sector.
- + All lectures are delivered online to provide a flexible learning environment, while practical placements in NIBRT's award-winning pilot plant facility provide candidates with the practical skills and experience required by industry.
- + Modules in career support and development are provided.
- + Instructors have extensive experience in training in the biopharmaceutical industry.

What courses are available?

Springboard+ 2020 courses			
Title	Duration	ECTS Credits	Level
Certificate in Biopharmaceutical Processing	9 months	40 ECTS	L6
Certificate in Biopharmaceutical Processing	9 months	40 ECTS	L7
Certificate in Bioprocess Engineering	9 months	40 ECTS	L7
Certificate in Biopharmaceutical Science	9 months	40 ECTS	L9
Certificate in Biopharmaceutical Processing	9 months	40 ECTS	L9
Certificate in Bioanalytical Techniques	5 months	20 ECTS	L9
MSc in Biopharmaceutical Processing (by research)	9 months	100 ECTS	L9

Application Process

All applications can be made on www.springboardcourses.ie.

Please contact springboard@nibr.ie with any queries you may have.



14

Cell and Gene Therapy

NEW FOR
2020

Cell and gene therapies are having a significant impact on the treatment of a wide range of diseases. The gene therapy market is now predicted to have a compound annual growth rate of 33.3% from 2017 to 2023 and to reach \$4.4 billion by 2023.

To support the manufacture of these therapies, NIBRT is pleased to offer the following courses:

Fundamentals of Stem Cell Therapy Manufacture

This training programme, presented as a collaboration between the Centre for Cell Manufacturing Ireland (CCMI) and NIBRT, will cover all aspects of stem cell therapy manufacture. It will allow trainees to gain hands on experience of cell vial thaw, initial seeding, expansion and cryopreservation as well as the associated equipment required to carry out these tasks. In addition, trainees will gain insight into the morphology of stem cells and indications of cell culture contamination, allowing them to identify and troubleshoot potential issues. This course is designed for those that have some knowledge of cell culture techniques but would like to specifically learn how stem cell therapy manufacture is conducted. This course would be ideally suited to graduates with a cell culture background or cell culture technicians from a biologics manufacturing setting.

Course Dates: 11-15 May, 21-25 Sept 2020

€3,500



GE Healthcare

Advanced cell therapy technology course

This training course delivered in partnership with GE Healthcare provides a blended learning solution within the areas of cell therapy processes and cell manufacturing under good manufacturing practice (GMP) procedures. On successful completion of the course trainees will be able to apply detailed theoretical cell therapy process knowledge to upstream, cell expansion, and downstream applications. Additionally, trainees will be able to identify bottlenecks and troubleshoot specific processes and perform industry standard techniques related to cell therapy manufacturing with a key emphasis on T-cell processes. This training course will be beneficial for research and development scientists, process engineers, and manufacturing technicians. A basic understanding of cell culture and corresponding techniques would be required for participation in this course.

Course Dates: 28-30 January, 09-11 June, 06-08 October 2020

€2,960



15 Biopharma 4.0

**NEW FOR
2020**

In 2019, Boston Consulting Group (BCG) and NIBRT formally announced the creation of the Biopharma 4.0 (B4.0) Alliance for Digital Innovation in Operations.

The Alliance, the first of its kind globally, is a unique collaboration between leading players in the biopharma industry, selected innovative technology providers and industry experts from BCG and NIBRT.

The team completed the B4.0 design blueprint, which lays out in detail the top 95 industry 4.0 use cases as applied to biopharma manufacturing. The blueprint outlines how biopharma companies can use cutting-edge technologies such as robotics, artificial intelligence and augmented reality to revolutionise manufacturing operations.

The Alliance then built out the physical “digital demonstrator” in NIBRT. The demonstrator covers the latest I4.0 technologies in manufacturing, quality control, quality assurance and cross plant operations. These technologies will be seamlessly integrated with core operating processes to enable proof-of-concept studies on new innovations and new ways of working. Visitors to the centre will be able to experience and learn about these technologies, as well as pilot specific use-cases and co-develop I4.0 solutions with NIBRT and BCG.

NIBRT and BCG are pleased to deliver this new Biopharma 4.0 training programme in 2020.

Biopharma 4.0

Course description

This comprehensive 2-day course is designed to equip biopharma manufacturing and quality personnel with advanced knowledge of how biopharma companies can use cutting-edge technologies such as robotics, artificial intelligence and augmented reality to revolutionise manufacturing operations. The course will include an overview of biopharma 4.0; digital immersion deep dives; and demos and case studies of how the technologies can be applied across manufacturing, quality and organizational excellence.

Key topics covered

- + Overview of Biopharma 4.0; how Biopharma can learn from the successful deployment of Industry 4.0 practices in other industries.
- + Deep dives into the latest digital topics and their application to biopharma: Advanced Analytics; Advanced robotics; Industrial Internet & integration; Blockchain, Digital Supply Chain; Digital Transformation.
- + Case studies on key innovation areas including demos of the technology: Evolved Upstream; Advanced Fill Finish; Organisational Excellence; QC Lab of the Future; Quality Assurance Centre.

Who should attend?

- + Manufacturing, quality and site organization managers and engineers who are looking to increase their understanding of and learn how to apply the latest digital trends and technologies in biopharma.
- + Data science & analytics engineers within biopharma who want to assess the latest 4.0 technologies.

Learning Outcomes

- + Understanding of the benefits that Industry 4.0 technologies have delivered in other industries (e.g. aerospace, defence, automotive, and FMCG).
- + The latest digital trends in manufacturing and how they can be applied to biopharma in areas such as manufacturing, quality and organizational excellence.

Course Dates: 8-9 May, 2020, 15-16 October, 2020

€1,500



Tours of the Biopharma 4.0. Digital Demonstrator are also available on request.

16

NIBRT Global Partners Programme

The NIBRT Global Partners Programme supports an international alliance of leading training and education organisations to help address the global shortage of a skilled biopharma workforce.

In May 2019, Jefferson Institute for Bioprocessing was officially opened in Philadelphia, USA. In November 2019, University of Technology Sydney, Australia also joined the Global Partners Programme.



The Jefferson Institute for Bioprocessing

Jefferson Institute for Bioprocessing, Philadelphia, USA

In the spring of 2019, Jefferson officially opened the doors to the first - and only - specialized education and training institute for biopharmaceutical processing in North America that combines commercial single-use processing equipment with the internationally recognized NIBRT curriculum.

The focus of JIB is hands-on training of industry professionals through short-term trainings, certificates and hands-on education of new bioprocessing engineers and scientists at both undergraduate and graduate levels. The education and training programs in bioprocessing are anchored at the new state-of-the-art JIB facility, located minutes from Philadelphia, PA. The institute is focused on biomanufacturing and dedicated to education and industry-based research that translates advances in the life sciences into emerging therapeutics that benefit humanity.

Training Courses

JIB understands the critical need to rapidly develop and advance the skills and knowledge of scientists, engineers and technicians who work in process development and biomanufacturing of biopharmaceuticals and biologics. They provide a broad-range of trainings in commercial single-use processing equipment as well as customized trainings to meet the full needs of the industry. Through its 25,000 sq. ft. fully flexible state-of-the-art facility, JIB provides a truly tactile training experience by combining interactive presentations, workshops, hands-on laboratory and pilot-scale experience.

Academic Offerings

Offering both an MS in Biopharmaceutical Process Engineering and a Graduate Certificate in Biopharmaceutical Process Development (BPD Certificate), JIB is ideal for employment-focused graduates with first degrees in Life Sciences and Engineering.

Training and education in biopharmaceutical processing are exceptionally laboratory intensive. At JIB, the students spend less time in traditional classroom settings and more time in JIB's pilot-scale facility, fully equipped with the most advanced technologies and processes used by industry to manufacture biopharmaceuticals.

More Information

For Trainings: Lyn Kugel at HLynda.Kugel@jefferson.edu

For Academic Programs: Geoff Toner at

Geoffrey.Toner@jefferson.edu

Jefferson.edu/JIB

Industry Course Offerings

- + Upstream and Downstream Operations
- + Scale Up/Scale Down
- + Quality and Regulatory Compliance
- + Continuous Bioprocessing
- + Single Use Technologies
- + Quality by Design and Design of Experiments
- + Process Modeling and Process Integration
- + Analytical Methods and Applications
- + Process Tech Transfer, Qualification, and Validation
- + Aseptic Process and Cleaning Operations

University of Technology, Sydney, Australia

NEW FOR
2020

An alliance agreement between University of Technology Sydney (UTS) and NIBRT will deliver selected NIBRT courses utilising the purpose built \$11.5m UTS Biologics Innovation Facility (BIF) launched in July 2019.

The UTS Biologics operation, designed for practical vocational and professional training, is a strategic investment between UTS and the NSW Government aimed at building a future workforce with high quality transferable STEM skills for the biopharma industry. Key stakeholders include the federal Government through the National Collaborative Research Infrastructure Strategy and global biopharma company Cytiva.

BIF replicates the NIBRT's Irish facility including separate teaching and process spaces and a full range of single-use upstream and downstream equipment, giving operators and technicians training opportunities ranging from fundamental sterile production techniques to complex biomanufacturing processes in a GMP environment.

More Information

For more information on the capabilities of the UTS Biologics Innovation Facility www.uts.edu.au/bif or contact biologicsinnovationfacility@uts.edu.au

NIBRT courses at UTS

- + Introduction to Single Use Technologies
- + Bioprocessing for Engineers
- + Introduction to Upstream Processing Operations
- + Introduction to Downstream Processing Operations
- + Introduction to Fill Finish Operations



Biologics Innovation Facility at University of Technology, Sydney



Transition year students at NIBRT

Primary school students at NIBRT

17 Outreach and Engagement

Careers in Biopharma

NIBRT's Annual Careers in Biopharma continues to be a very popular event to connect the Industry with high quality prospective employees. The 7th Annual Careers Day will be held on Saturday April 18th 2020.

Secondary Schools

A key component of NIBRT's remit is to help develop the next generation of biopharma talent with a number of exciting initiatives throughout 2020 including:

Amgen's School of Biotech Excellence (ABE) which is an innovative science education programme that empowers teachers to bring biotechnology into their classrooms. ABE-Ireland offers training in molecular biology experiments for secondary school teachers at locations in University College Dublin, Dublin City University and NIBRT.

NIBRT's Biopharmaceutical Science Transition Year Competition. The very popular competition invites transition year students to submit an essay focusing on the biopharma sector in Ireland. The successful students get a one week structured placement in NIBRT where they get the opportunity to experience the state-of-the-art facilities and learn from scientists working in the research and training team.

info@nibr.ie

18 Coming soon in 2020

Careers in Biopharma

On Saturday April 18th 2020, NIBRT will host the 7th Annual Careers in Biopharma event. This is the premier biopharma careers fair in Ireland and features upwards of 20 of the leading biopharma companies actively recruiting top biopharma talent. Previous exhibitors include AbbVie, Alexion, Allergan, Amgen, Biomarin, BMS, DPS Engineering, GE, Janssen, Lilly, MSD, Pfizer, Regeneron, Sanofi, Wuxi.

Further information: <https://www.nibrt.ie/news/>



Biopharma Ambition Conference 2020

On 3rd and 4th March 2020, at The Printworks in Dublin Castle, BioPharma Ambition will mark the impact of biopharmaceutical innovators, showcasing the economic and social value they create for Ireland. The event is a stage to celebrate the discovery, development, manufacture and delivery of innovative medicines and technologies for improving human health.

BioPharma Ambition is led by the biopharmaceutical industry's representative bodies, IPHA and BPCI, and NIBRT. This conference was previously held in 2016 and 2018 at events which

drew more than 800 delegates from across the island of Ireland and from around the world - experts in industry, policy, research, academia, clinical care, entrepreneurship and finance. This year, we will bring even more global influencers to Dublin for a larger-scale live production. The event will strengthen our networks, research collaborations, reputation and investment proposition as we look to the future of innovation in biopharmaceutical research and manufacturing.

Further information: www.biopharmaambition.com



Principal Investigator Series

The NIBRT Principal Investigator Series, in which leading NIBRT research teams provide expert level insight into key biopharma topics including:

Bioanalytical Science for Biopharmaceutical Characterisation

Prof Jonathan Bones

Molecular Biology and Bioinformatics Techniques and Applications for Biopharma production

Prof Niall Barron and Dr Colin Clarke



**Northeastern
University**

ICH Q8/Q9/Q10/Q11 Training with Northeastern University, Boston

In 2020, NIBRT will co-host a series of training programmes in Boston and in Dublin.

Initial courses will focus on implementing an enhanced approach to development and regulatory filing as described in ICH Q8 through Q11.

New Short Courses

Lyophilisation

Hands on practical training on lyophilisation on NIBRTs Telstar Lyobeta 3PS equipment.

Emerson DeltaV

- + DeltaV Implementation I
 - + DeltaV Systems Batch
-

Online dilution and downstream processing with Avantor

Avantor, Inc. and NIBRT are teaming up to address downstream bottlenecks in buffer preparation when producing monoclonal antibodies (mAbs). As part of the joint effort, Avantor is providing in-line dilution systems for hands-on training which will be delivered in 2020.



19 Contact Us

Book a course directly via **www.nibrt.ie**. You may also wish to contact us at **training@nibrt.ie** or **+353 1 215 8100** to speak with one of our training team. Or purchase a NOA course directly via **<https://noa.nibrt.ie>**

For more information, please visit our website at **www.nibrt.ie**. Here you will find up-to-date information about course schedules, descriptions, registration, location and contact information.

Please sign up to our NIBRT newsletter to receive updates throughout 2020
<https://www.nibrt.ie/media-centre/>

Clients are very welcome to visit us at:

National Institute for Bioprocessing Research and Training (NIBRT), Foster Avenue,
Mount Merrion, Blackrock, Co. Dublin, Ireland, A94 X099.

Web: **www.nibrt.ie**

Phone: **+353 (0) 1 215 8100**

Email: **training@nibrt.ie**

20

Testimonials



I enrolled in the new QC Microbiology Skills for Biopharma course at NIBRT. The instructors were highly skilled, accessible and able to deliver complicated material in an easily understood format. Theoretical material was combined with hands on training, which gave me an insight into the Biopharma and how I can transfer and apply my skills in the industry. I would highly recommend training at NIBRT to anyone trying to find their way into the Biopharma.”

Ana Žgomba PhD



Excellent days training with my colleagues at NIBRT learning more about Biopharmaceuticals which enables us to better advise our customers on correct garbing in controlled environments.”

Bernard Flynn

Account Manger Elis Cleanroom



The staff at NIBRT are what makes the place as great as it is! They are so welcoming, knowledgeable, patient, friendly while also being so open to others opinions and suggestions. You can train people to deliver information, but their personality is what helps you remember the information. Would 10/10 recommend this course to anyone”.

Abbie Sligo



Visiting NIBRT was fascinating. Such a great training site for pharmaceutical companies and biotech to learn to manufacture Biologic in the most productive fashion. This was a unique experience.”

Stephane Perrey

General Manager at GE Healthcare LS Japan, Australia, New-Zealand



May I first take this opportunity to thank you and your colleagues at NIBRT and IT Sligo for your professionalism, support, guidance and patience during our Biotechnology Processing certificate course this year? The online lectures and lab practical's gave a great insight and understanding to a complex and very interesting subject and I believe participation in the course will greatly improve my job prospects.”

Aidan Quinn

Springboard+ student



Thrilled with not only the training I received and experience I had, but also so excited about what this institute is doing for the industry. FANTASTIC”.

Dupont Bioprocessing Operations



I'm new to bio so I found all parts of the course informative and interesting.”

Sanofi



All the lecturers were just great, very knowledgeable & made the day interesting & interactive. The course has given me a whole new meaning to my day job! Thank you very much.”

Engineers Ireland



NIBRT is a critical support as we built up our organization and facility to deliver life changing medicines for our rare disease patients.”

Paddy Gleeson

HR Director, Takeda Dunboyne Biologics



1. NIBRT and Avantor partnership
2. Invest in Ireland Award winners with Takeda Dunboyne Biologics
3. Stanford University MBA class
4. NIBRT and Northeastern University, Boston strategic collaboration agreement
5. NIBRT off-site training in Chile
6. NIBRT collaboration with UCD School of Bioprocess Engineering
7. Validation internship with TU Dublin
8. Students from Western Kentucky University
9. NIBRT CEO, Dominic Carolan at opening of Jefferson Institute for Bioprocessing



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