



**TUS**

**Technological University of the Shannon:  
Midlands Midwest**  
Ollscoil Teicneolaíochta na Sionainne:  
Lár Tíre Iarthar Láir

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**Dámh an Ghnó agus Fáilteachais  
Faculty of Science and Health**

**Report of Peer Review Panel**

**Programmatic Review**

**of the**

**Faculty of Science and Health  
Department of Pharmaceutical Sciences and Biotechnology**

**External Validation Visit, 28<sup>th</sup> March 2023**

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## 1.0 INTRODUCTION

This report outlines, in summary form, the proceedings of the Programmatic Review Panel for the Faculty of Science and Health, and the findings and conclusions of the External Validation Panel conducted on 28<sup>th</sup> March 2023. The external validation visit was undertaken in accordance with TUS Academic Regulations. A Programmatic Review Panel external validation panel makes an independent impartial judgement on a programme proposal.

## 2.1 GENERAL INFORMATION

### 2.2 Higher Education Provider

Provider	Technological University of the Shannon: Midlands Midwest
Faculty	Science and Health
Department	Pharmaceutical Sciences and Biotechnology
Date of Visit	28 <sup>th</sup> March 2023

### 2.3 External Re-Validation Panel of Expert Assessors

Name	Affiliation
Dr Ken Carroll	Academic Registrar, TU Dublin
Dr Fergus Ryan	Lecturer Medical Genetics, TU Dublin
Professor Denise Rooney	Head of Department of Chemistry, Maynooth University
Dr Melissa Hoare	Senior Bioprocessing Trainer and Academic Co-ordinator, NIBRT
Dr Colm McGee	Lead Chemist, Jazz Pharmaceuticals

Secretary to Panel: Sarah O'Toole, TUS.

## 2.4 TUS Staff

Name	Role
Dr Don Faller	Dean of Faculty of Science and Health
Dr Carmel Kealey	Head of Department of Pharmaceutical Sciences and Biotechnology
<u>Department Staff:</u> Dr Anne Mulvihill, Dr Ann O'Malley, Dr Anne Friel, Dr Anne Marie O'Brien, Dr Bernie Fallon, Dr Brendan Kelly, Dr Brian Murphy, Dr Donal Eardly, Dr Edwin McCullagh, Dr John Flannery, Dr Mary Booth, Dr Natasha McCormack, Dr Nicholas Mullins, Dr Noreen Morris, Dr Nuala Commins, Dr Sinead Devery, Dr Siobhan Kavanagh, Jim Roche, Cathy Brougham, Denise Lord, Erin English, Dr Tara Vollmerhausen, Dr Andy Fogarty, Dr Carol O'Donnell, Dr Sean Reidy, Antoinette Sweeney, Antoine Fort, Paulina Flannery, Dawn Howard, Belinda Grady, Caitriona Collins, Sean Gerrity, Lisa Geraghty, Sile Flaherty	

## 2.5 Employers/Industry & Alumni Representatives

Representative	Affiliation
Moira Elmore	Industry Rep (PPD)
Michael Doyle	Industry Rep (Alexion)
Anna Ainsworth	Employed at Lonza -Pharmaceutical Company - Switzerland
Ellie McManus	MSc in Biopharmaceutical Technology
Jamie Kelly	MSc in Biopharmaceutical Technology
Ms Sneha Johnson	2020 Graduate - MSc in Biopharmaceutical Technology
Samhitha Lakshman	2022 Graduate - MSc in Biopharmaceutical Technology

## 2.6 Current Student Representatives

April Curran	Sanskriti Saini
Shannon James	Windy Jia Hui Chong

Chris Wessmann	Declan Craig
Sebastian Klosowski	Nimi James
Maxwell Owuor	Koyyana Sri Hari Govind
Louise Pearl	Aine Greene
Vasilena Simidchieva	Aisling Flaherty
Alban Cepi	Luca Glover

### 3.1 FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL

#### 3.2 Main Findings

The External Validation Panel of Assessors recommends reapproval of the following programmes in the Department of *Pharmaceutical Sciences and Biotechnology* subject to the conditions recommendations as specified in Sections 3.2 and 3.3.

#### List of programmes presented for review:

- Bachelor of Science (Hons) in Pharmaceutical Sciences Level 8 Ab initio
- Bachelor of Science (Hons) in Pharmaceutical Sciences - Level 8 Add-on
- Bachelor of Science in Pharmaceutical Sciences (Drug Development and Analysis) Level 7 (this is also an Exit from the Level 8)
- Bachelor of Science in Pharmaceutical Sciences (Drug Development & Analysis) Level 7 Add-on
- Higher Certificate in Science in Applied Science (this is an Exit award from the Level 8 and Level 7)
- Bachelor of Science (Hons) in Pharmacology - Level 8 Ab initio
- Students can Exit at Level 7 = Bachelor of Science in Science
- Students can Exit at Level 6 = Higher Certificate in Science in Science
- Bachelor of Science (Hons) in Biotechnology - Level 8 Ab initio
- Bachelor of Science in Biotechnology - Level 7 Ab initio (this is also an Exit award from the Level 8)
- Bachelor of Science (Hons) in Biotechnology - Level 8 Add-on
- Bachelor of Science in Biotechnology - Level 7 Add-on

- Higher Certificate in Science in Applied Science (this is an Exit award from the Level 8 and Level 7)
- Master of Science in Biopharmaceutical Technology (90 ECTS)
- Postgraduate Diploma in Science in Biopharmaceutical Technology (60 ECTS)  
Exit Award from Masters
- Postgraduate Diploma in Science in Biopharmaceutical and Medical Device Systems (60 ECTS)
- Postgraduate Certificate in BioPharma and Medical Device Systems (30 ECTS)

### **3.3 Conditions**

No conditions apply.

### **3.4 Recommendations**

#### General

1. Being part of a multi-campus university creates significant opportunity for synergistic collaborations with other TUS Departments and campuses. The Department of Pharmaceutical Sciences & Biotechnology should look at further prospects for such synergies and the creation of expanded opportunities, real and virtual, for students to access expertise, facilities, and resources/equipment across the different campuses to provide a more holistic TUS student experience. Consideration should be given to the development of a well-articulated strategy for shared delivery of programs and resources to enrich student experience, staff mobility and interaction. This will also contribute to the creation of a shared sense (for students and Staff) of one TUS (i.e., progressing onwards from a campus perspective).
2. The Departments outreach and public engagement continues to focus strongly on the traditional leaving certificate student. It is recommended that the Department explore opportunities to alternate flexible access pathways to broaden access to programmes as part of the strategy to increase and diversify student enrolments. This should include non-traditional students, mature applicants, FE to HE pathways, CPD and lifelong learning opportunities.
3. Consider opportunities to integrate a mentoring programme for new staff members within the Department.

4. Within the policy framework of TUS, to explore opportunities to afford staff time and opportunity to participate in seed funding research initiatives to expand opportunities for scientific research and growing postgraduate activity.
5. Student feedback is clearly important to the Department but there is a need to give greater visibility to, and adopt more effective ways of providing feedback to students on Department responses and actions arising from student survey data; students met by the Panel were unaware of any such communication. Some simple approaches might include a VLE page on '*you said, we did*' or similar posters in high traffic areas.
6. Based on discussion with industry representatives, it is recommended that opportunities are provided to ensure students have knowledge and awareness of key requirements when working in industry such as knowledge of good documentation practice, GXP's, strong technical writing skills and knowledge of the relevant regulatory bodies to prepare them for work placement and operating in a professional environment.
7. It is recommended that the Department develop a coordinated approach to explore and develop opportunities for deeper collaboration with people in industry to align industry requirements with course material. The foundation of an Industry Advisory Board is a good first step but strategic approach will be required to realise the full potential benefit of this Board.
8. Consider opportunities for the establishment of an apprenticeship model to broaden the avenues for students access to the programmes available.
9. The Panel recommends that the Department give careful thought to the identification of some genuine unique selling points for the Department to enable it to clearly differentiate itself and its programme offering in a very competitive marketplace.
10. To demonstrate effective quality oversight of programmes within the Department, it is recommended that future reviews include a section summarising the continuous enhancements of programmes, and learning, teaching and assessment strategies based on annual programme board meetings, student, and other stakeholder feedback.

11. Not evident in the documentation provided is a reflection on student and staff experiences under COVID restrictions. The Panel believes there are important lessons to be learned from this experience and possible actions to enhance and benefit the student and staff experience into the future.

Group 1 Programmes:

Bachelor of Science (Hons) in Pharmaceutical Sciences Level 8 Ab initio

Bachelor of Science (Hons) in Pharmaceutical Sciences - Level 8 Add-on

Bachelor of Science in Pharmaceutical Sciences (Drug Development and Analysis) Level 7 (this is also an Exit from the Level 8)

Bachelor of Science in Pharmaceutical Sciences (Drug Development & Analysis) Level 7 Add-on

Higher Certificate in Science in Applied Science (this is an Exit award from the Level 8 and Level 7)

Bachelor of Science (Hons) in Pharmacology - Level 8 Ab initio

Students can Exit at Level 7 = Bachelor of Science in Science

Students can Exit at Level 6 = Higher Certificate in Science in Science

1. To enhance student experience in the year 4 capstone projects, it is recommended that the Department further explore the possibility of providing more hours of supervised laboratory time to ensure students have adequate time to complete project work. Relatedly, students reported that some semester 8 laboratory classes revisited skills already addressed earlier in the programmes; there may some opportunity here to assign some of those hours to project work.
2. Consider the opportunities to bring in industry/guest speakers or speakers from vendor companies to talk to 4<sup>th</sup> year students about upcoming technology being used in the sector.
3. Notwithstanding the established very good practices on the use of diverse modalities of assessment and efforts to manage student workloads, consider how student feedback can be further gathered in relation to the assessment schedule through the programme boards, giving some agency to students.



Group 2 Programmes:

Bachelor of Science (Hons) in Biotechnology - Level 8 Ab initio

Bachelor of Science in Biotechnology - Level 7 Ab initio (this is also an Exit award from the Level 8)

Bachelor of Science (Hons) in Biotechnology - Level 8 Add-on

Bachelor of Science in Biotechnology - Level 7 Add-on

Higher Certificate in Science in Applied Science (this is an Exit award from the Level 8 and Level 7)

Master of Science in Biopharmaceutical Technology (90 ECTS)

Postgraduate Diploma in Science in Biopharmaceutical Technology (60 ECTS) Exit Award from Masters

Postgraduate Diploma in Science in Biopharmaceutical and Medical Device Systems (60 ECTS)

Postgraduate Certificate in BioPharma and Medical Device Systems (30 ECTS)

**Note:** *Student Placement was discussed in detail in this section and recommendations apply for Group 1 and Group 2 programmes.*

1. The Panel recommends that the Department give careful consideration to ensuring there is adequate resourcing in place for the implementation of work placement and that this is supported at the Department/Faculty level for co-ordinating placement, acquisition and establishing contacts/networks.
2. To support student readiness for work placement, it is recommended that the Department consider delivering modules or activities regarding CV preparation and interview skills earlier in the programme at Stage 2 so students are ready for interviews at the beginning of Stage 3.
3. It is further recommended that further deliberation be given to the structure and approach for the academic supervisor check-in for students on placement. As the placement numbers increase there will be a need to ensure adequate resources are in place to provide a consistent approach for a positive student experience. Also, it is recommended that the roles for the academic supervisor and the industry mentor are clearly specified in governing procedures and for the benefit of students.

4. The Panel recommends that, in addition to the career day consider running a separate information session earlier in the semester for students who will be going on placement involving local companies to learn specifically what each placement would offer. This would help them align their interest to the different companies.
5. The Panel recommends that the Department provide opportunities for students to take on extra-curricular content where desired and appropriate.
6. The Department should explore further opportunities for site visits or virtual tours with industry for 2nd year students, including guest speakers from industry and patient advocacy groups to support students relating their theoretical work with real-world scenarios.

### **3.5 Commendations and Observations**

1. The panel particularly notes and commends the excellent programme documentation and notes it is comprehensive and very well presented. The organisation and accessibility of the documentation was very welcome.
2. The panel commends the introduction of work placement into the programmes which supports the ambition of the department and its plans to expand to meet demands. The Panel further commends the Department for its responsiveness to student survey responses supportive of a placement.
3. The panel commends the team on the use of team-based learning as an innovative approach for assessment that has been implemented within the Department. It is recognised as an effective approach for addressing the issues of academic integrity with application including ChatGPT issues as students are doing the assessment in the class.
4. The Panel were impressed with, and commend the innovative approaches being explored by the Department for laboratory education (with HCI funding as part of an inter-institutional project led by Maynooth University).
5. The panel is impressed with the extensive work and the informed changes introduced by the programme teams during programmatic review. The thoughtful redesign of programmes and the coherent structures provided with novel features is commended.
6. The panel commends the programme teams for their active participation and engagement with the panel and noted that it was very impressive and appreciated.

A handwritten signature in blue ink that reads "Ken Cassell". The signature is written in a cursive style with a capital 'K' and 'C'.

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Signature of Chairperson

Date: 21/04/2023

