Dr Ben Ryan
Deputy Head of School, Programme Innovation, School of Pharmacy and Biomolecular Sciences.

"This exciting post graduate programme has been developed in view of the growing demands of the changing healthcare landscape, which has seen a major shift as it fuses digital technology with traditional science, leading to an increased focus on disease prevention, tailored therapies and Connected Health. The programme which sits within RCSI's School of Pharmacy and Biomolecular Sciences, has been supported by the Higher Education Authority under the Human Capital Initiative."

Dr Sudipto Das
Programme Director, School of Pharmacy and Biomolecular Sciences.

"This is a flexible programme that will benefit life science graduates in the area of biological, chemical, mathematical or statistical sciences or indeed the health sciences. Or perhaps you are working in a relevant industry and looking to upskill to further enhance your career. What makes this Masters unique is that RCSI have teamed up with a strong consortium of clinical experts and enterprise partners to provide their expertise and support in the development and delivery of the MSc to meet these critical skills gaps and future needs."

This project has been supported by the Higher Education Authority under the Human Capital Initiative, Pillar 3. Grant agreement: 17796884 'Enabling Future Pharma'

This Masters is offered on a **two-year full-time** basis with a national/international (including China) **industry placement for Year 2**. This unique opportunity enables students to apply the practical skills and theory learnt on the programme to real-life projects with our industry partners. Our two-year programme further supports students who are looking to establish global industry network connections and create further career prospects. Students are required to gain **120 ECTS** credits based on taught modules, a research project and an Industry placement. Each core block contains 3 modules.

CORE BLOCKS	ECTS CREDITS
Block 1: **Genetics, Genomics & Precision Medicine**	15
Block 2: **Data Analytics & Computational Biology**	15
Block 3: **Connected Healthcare**	15
Block 4: **Innovation and Leadership**	15
Block 5: **Research Project**	30
Block 6: **Industry Placement**	30
Total ECTS Credits	**120**

The programme is delivered through face-to-face and online lectures, practical sessions, workshops/tutorials, round table discussions and self-directed learning in order to foster an enhanced learning environment for our students.

ENTERPRISE COLLABORATION
Our industry partners including **Congenica Ltd, Novartis Ireland, Aerogen, S3 Connected Health, Inflection Biosciences, Phion Therapeutics** and **Almac** help deliver this world class Masters programme to ensure students get the most relevant experience and exposure.

FEES:
Please contact **mtapm@rcsi.ie** regarding our latest fees.

RCSI, UNIVERSITY OF MEDICINE AND HEALTH SCIENCES

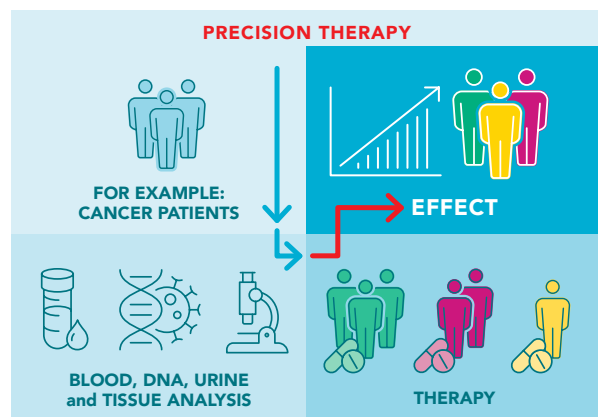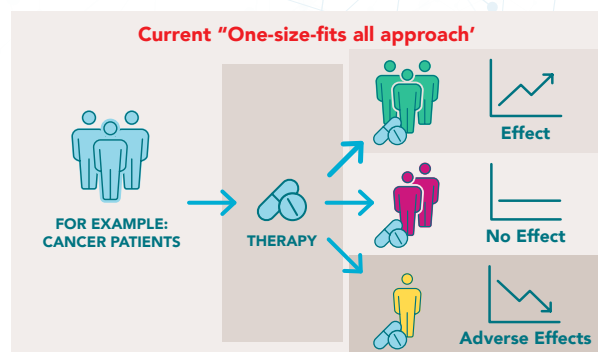## MSC IN TECHNOLOGIES AND ANALYTICS IN PRECISION MEDICINE WITH INDUSTRY

ADVANCED SKILLS IN THE AREAS OF GENOMICS & OTHER OMICS, DATA ANALYTICS, ARTIFICIAL INTELLIGENCE, CONNECTED HEALTH AND INDUSTRY PLACEMENT

RCSI
UNIVERSITY OF MEDICINE AND HEALTH SCIENCES

MSC IN TECHNOLOGIES AND ANALYTICS
IN PRECISION MEDICINE WITH INDUSTRY

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INTRODUCTION

Precision Medicine is an exciting new discipline that involves optimising therapeutic benefits by personalising treatment for patients through genetic profiling and in parallel enhancing diagnosis across various disease types. As the life sciences sector embraces Precision Medicine, a key evolution in healthcare characterised by the fusion of the digital, biological and physical worlds, there is significant demand for certain specialised skills to enable and support future career pathways. To address this demand, RCSI's School of Pharmacy and Biomolecular Sciences has designed a new state-of-the-art Masters (MSc) programme in Technologies and Analytics in Precision Medicine with Industry

The programme has a core focus on Precision Medicine combined with Connected Health and Analytics.

Current "One-size-fits all approach'

**FOR EXAMPLE:
CANCER PATIENTS**

THERAPY

Effect

No Effect

Adverse Effects

PRECISION THERAPY

**FOR EXAMPLE:
CANCER PATIENTS**

EFFECT

**BLOOD, DNA, URINE
and TISSUE ANALYSIS**

THERAPY

WHAT MAKES THIS MASTERS DIFFERENT?

Develop advanced knowledge in the areas of **Genetics/Genomics & Precision medicine**

Understand how cutting edge **Connected Health** technologies and data are improving health care

Learn how to use programming language including R and Python to analyse **Big Data** generated from a healthcare setting

Develop core skills in **Innovation & Leadership**

During your **Year 2 Industry Work Placement**, you will get to demonstrate, apply and further develop the **technical knowledge**, **power skills** and **competencies** in a work environment and build your professional network

YOUR FUTURE CAREER

We believe this Masters will equip students to become leaders in the health and bio-pharmaceutical industries of the future. Graduates of this programme will be in a position to apply for numerous roles across the bio-pharmaceutical industry as well as healthcare sectors including:

> Computational Biologists

> Bioinformatician / Bioinformatics scientist

> Start Up / Spin Out

> Research Team Management

In addition, this course will further enhance the student's academic profile and therefore make them highly competitive for PhD applications across both national and international research/universities.

Finally, the experiential learning component with industry, not only enhances a graduate's workplace readiness and employability but also introduces them to future employers.

MSc in Technologies & Analytics in Precision Medicine with Industry

Study 5 key areas including Precision medicine, Genetics, Data analytics, Connected Health, Innovation and gain Power Skills to begin/advance your career in this exciting new discipline

**GENETICS/
GENOMICS
& PRECISION
MEDICINE**

**RESEARCH
PROJECT**

Self-Directed

**INNOVATION
& LEADERSHIP**

**DATA
ANALYTICS &
COMPUTATIONAL
BIOLOGY**

Tutorials/
Workshops

Lectures

**PROFESSIONAL
POWER SKILLS**

**CONNECTED
HEALTHCARE**

**YEAR 2
INDUSTRY
PLACEMENT**

**Computational
Biologist**

PhD/
Research

**Bioinformatician/
bioinformatics
scientist**

**FUTURE
CAREERS**

**Start Up /
Spin Out**

**Research Team
Manager**