Biotechnology as a driver of medical progress and access
What is Biotechnology?

**Legalistic**
(Source: OECD)

“The application of science and technology to living organisms as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services.”

**Humanistic**
(Source: NUI Galway B.Sc. curriculum)

“Biotechnology is the application of biology for the benefit of humanity and the environment.”
Biotechnology: naturally sustainable solutions
Goal 3: Ensure healthy lives and promote well-being for all at all ages
WHY BIOTECHNOLOGY?

350 MILLION patients benefit from biotechnology-derived medicines worldwide.

Innovative medicines save millions of lives every year and are transforming how we treat and cure disease.

HIV/AIDS death rates have decreased 85% ... since 1995

Heart disease death rates have decreased 30% ... from 2001 to 2011

Cancer death rates have decreased 22% ... since 1991

Biotechnology takes time

Biotech idea
To
Product
$500 m.
+  
15 Years

Source: Kempen Corporate Finance
Percentages are subject to rounding
Biotechnology takes time…and investment

US investors (88%) are especially positive on Biotech versus European investors (69%)

Biotech idea
To
Product
$500 m. +
15 Years

Source: Kempen Corporate Finance
Percentages are subject to rounding
Long-term, Costly and many Uncertainties

THE AVERAGE COST TO PRODUCE A NEW THERAPY UNTIL IT IS READY FOR MARKET ENTRY IS NOW MORE THAN €2.5 BILLION⁶

99.7% OF ALZHEIMER’S RESEARCH PROGRAMMES HAVE FAILED IN LATE-STAGE CLINICAL TRIALS⁸

APPROXIMATELY 30 MILLION PATIENTS IN EUROPE SUFFERING FROM RARE DISEASES BENEFIT FROM BIOTECHNOLOGY DERIVED MEDICINES³¹

THE HEALTHCARE BIOTECHNOLOGY INDUSTRY HAS INVESTED AN ESTIMATED €200 BILLION IN R&D IN EUROPE IN THE PAST SIX YEARS³⁶
70% of clinical trials are conducted by small biotechnology companies.

More than 90% of biopharmaceutical companies are not profitable.

Source: Factset, BIO Industry Analysis, 2016
MEDICAL PROGRESS NEEDS INNOVATION...  ...AND INNOVATION IS BUILT ON INCENTIVES
Innovation in action...
Marinomed: using red algae to fight the flu

“Marinomed is an IP-driven company. It is vital that we own and manage the IP associated with our products.”

Andreas Grassauer
CEO, Marinomed

LICENSING
Flexibility in licensing models increases the chances of creating win-win situations for all parties.
NovaBiotics: taking nature’s lead in antimicrobials
Health...

...get beyond the pill
1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation, and Infrastructure
10. Sustainable Cities and Communities
11. Responsible Consumption and Production
12. Climate Action
13. Life Below Water
14. Life on Land
15. Peace and Justice
16. Partnerships for the Goals
By working together we can!

There are more than 3,000 companies in EU (SMEs—very large) accounting for 170,000 direct jobs and more than 700,000 indirect jobs in the healthcare biotech sector.

Investing 3% of EU GDP in R&D by 2020 could create 3.7 million jobs and increase annual GDP by EUR 795 billion by 2025.
Biotech is health