The making of a translational research institute, 2025

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My disclosures

Co-founder and consultant – Pangea Biomed

a brief historical perspectives

The story of Michael Hengartner

The example of the TICC

Historical perspective I

Michael Hengartner

Discovered the apoptosis genes in *c. elegans*

Led a lab in CSHL

Rector of the University of Zurich

Chairmen of the Board at ETH

Impact the greater community than own laboratory

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Historical Perspective II

Technion Integrated Cancer Center – (TICC; est. 2016)

A cancer center on steroids - integrating 18 faculties of engineering and computer sciences with biology, oncology and 5 affiliated hospitals

Facilitating novel technologies that benefit cancer patients using innovative engineering.

Workshops of engineers, oncologists and biologists

Novel MRI technology (cutting scan time 10 folds; Yonina Eldar)

Using innovative technology that captures single cells to study tumor heterogeneity; Uri Sivan)

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Computer-based drug discovery

In silico screen enabling structure-based assessment of 20 billion small molecules within hours

AI based analyses enabling medicinal chemistry selection of analogs for further analyses

Shortening the runway from discovery to therapy

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Computer-based precision oncology

Imaging rather than sequencing as the path for the future

Translating H&E slides to gene expression data

Developing algorithms to enable stratification of patients for select therapies based on marker / expression signatures

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Identifying top talent to advance innovative technologies in partnership with computer science technologies

Molecular Glue

Tomorrows CRISPR (tilling)

Structural data based on computer simulations

Alpha fold 3+ (protein complexes, PTM)

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Training our future scientists

Integrating Msc, PhD and MD trainees in TRI projects

Educational activities (seminars, workshops) to graduate school and post doctoral trainees.

Innovative hands-on training (12 months paid lab work) for post bac headed towards graduate school.

Mentoring early career PhD scientists – shortening the runway for promotion

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Operation

Internal and philanthropic support

Biotech and pharma for innovative technologies & potential drugs

Internal task force, advisory board and external advisory counsel.

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Adjusting to real time changes

Technologies advances faster than we imagine – a 12 months turn around time for computer-based technology is considered slow…

Monitoring and integrating advances as we are aware of them

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