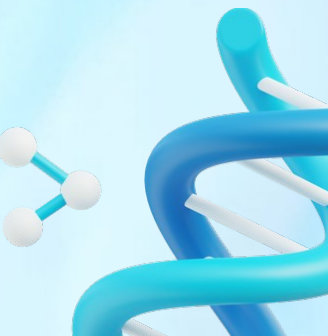


Adelson School of Entrepreneurship

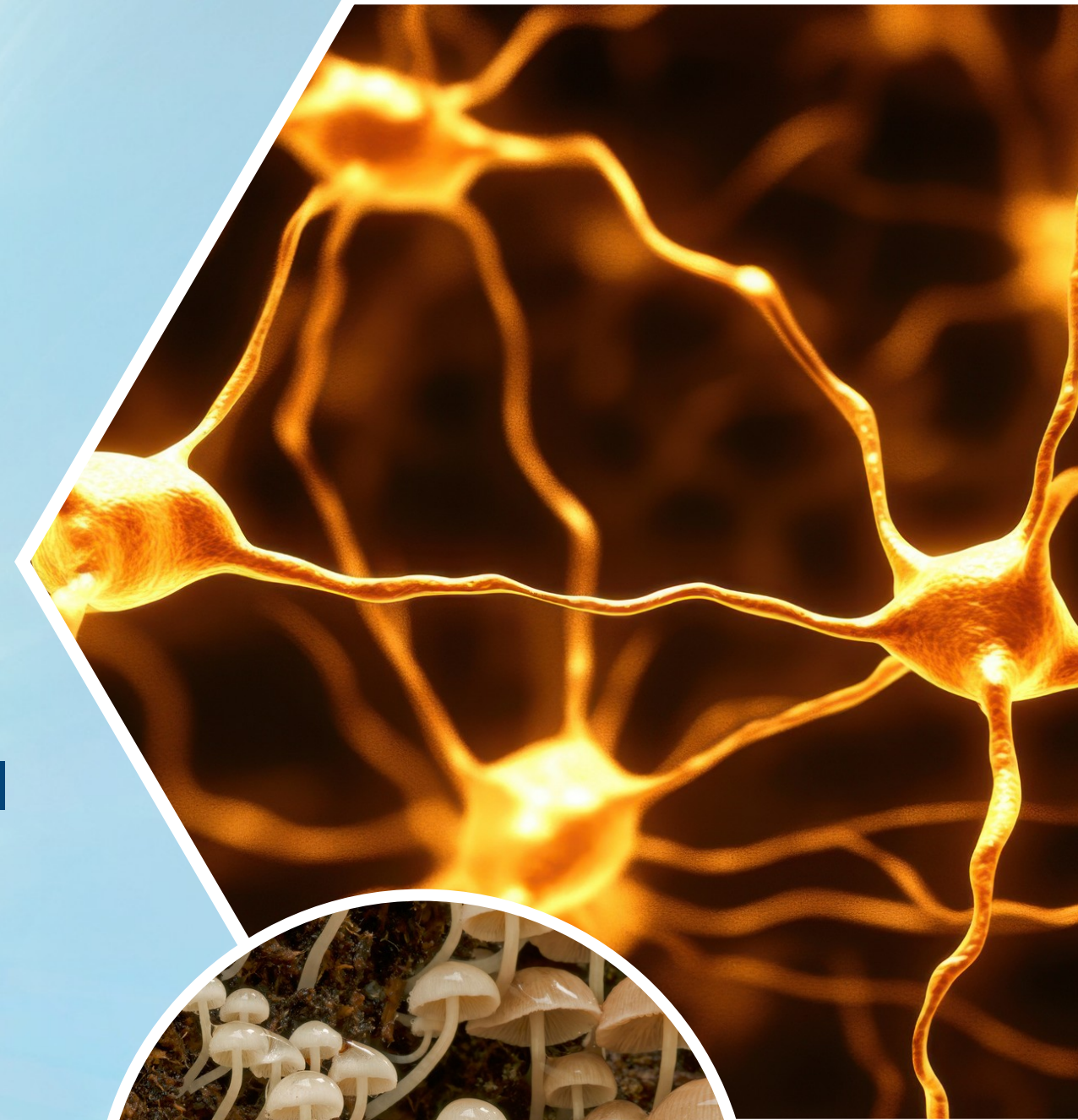
Biotech & Healthcare Entrepreneurship

By Dr. Eyal Ballan



Course Objectives

- **Map the Ecosystem**
Understand healthcare and biotech stakeholders, regulators, and funding sources
- **Business Models**
Learn viable business models in biotech, medtech, and digital health
- **Hands-On Experience**
From ideation to validation using real-world methodologies
- **Pitching Skills**
Develop communication skills for investors and industry partners
- **AI Integration**
Use modern AI tools for market analysis and validation
- **Design & Test MVPs**
Create minimum viable products for early validation



Biotech Industry 2025

Biotech Industry 2025

**Small-Molecule
Drugs:**
Chemical
compounds
(aspirin,
antibiotics)

Biologics:
antibodies, vaccines,
and recombinant
proteins like insulin

Advanced Therapies:
– Cell and Gene
therapies (CAR-T)
for cancer treatment

Diagnostics:
Rapid tests,
molecular assays,
and screening tools
for disease detection
and monitoring

Medical Devices:
Drug-delivery
systems,
implantable sensors,
and therapeutic
devices

Digital Health:
Patient monitoring
platforms, AI-driven
diagnostics, and
personalized
treatment tools

Biotech Industry 2025

\$1.55 trillion

The global
biotechnology
market size 2024

13.90%

Annual growth rate
(CAGR)

\$5.71 trillion

Projected market
by 2034

75%

Of leading biotech
use AI

\$5.6B

Biotech AI
investment 2024

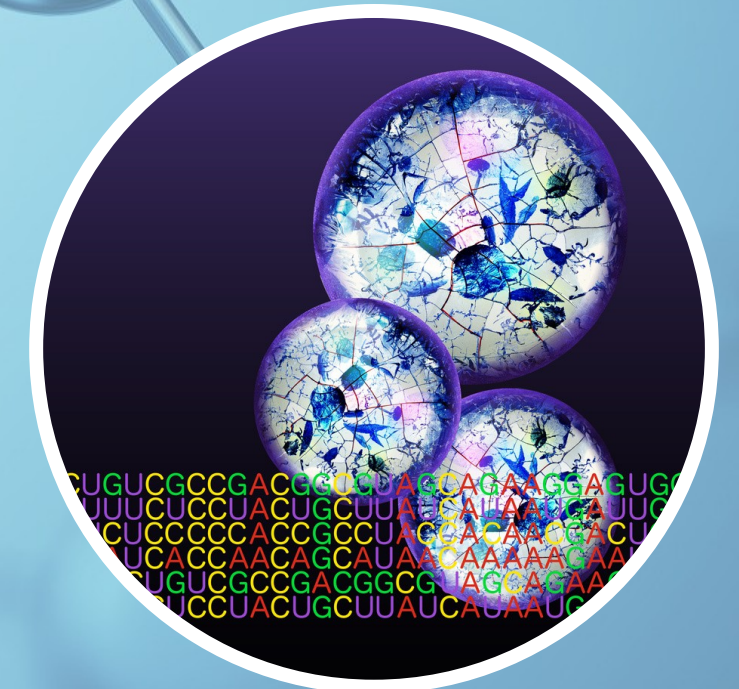
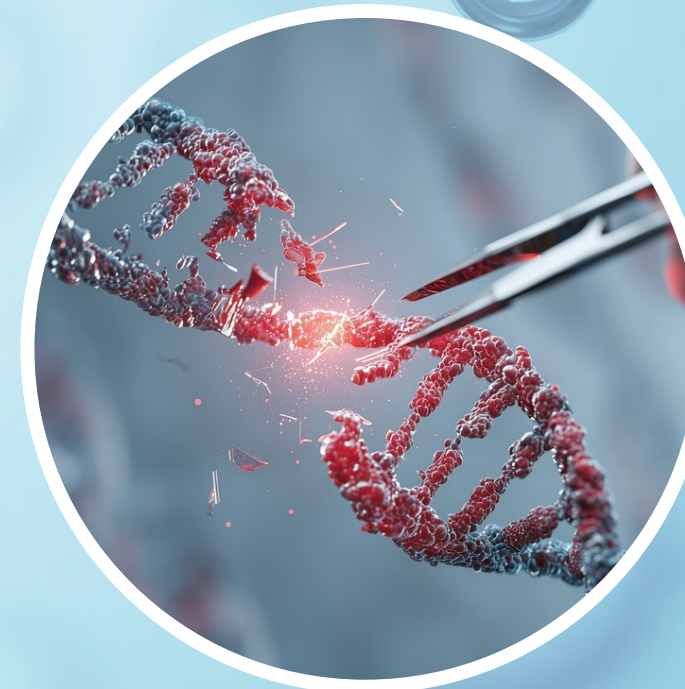
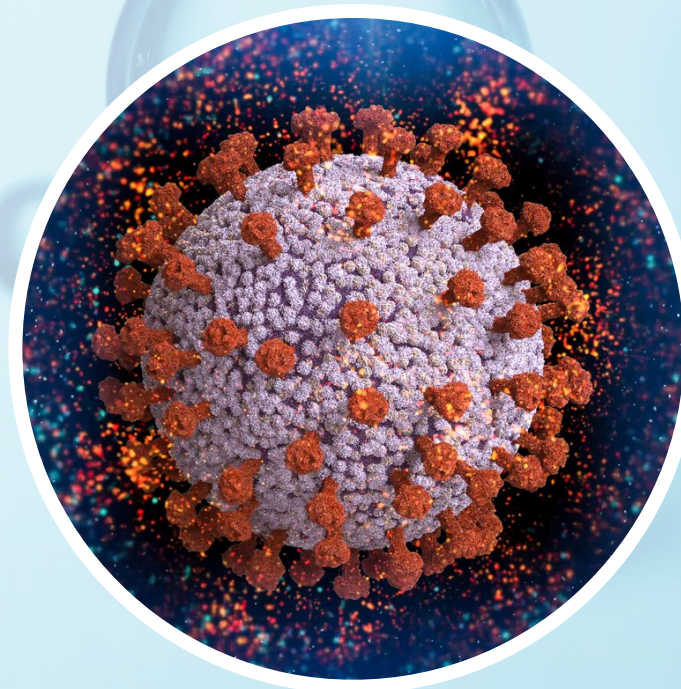
\$410B

Annual Value from
AI in Pharma



Key Trends Shaping 2025

- AI-Powered Drug Discovery: Reducing development time from 10+ years to 3-4 years
- CRISPR & Gene Editing: FDA approvals for genetic disease treatments accelerating
- Precision Medicine: Treatments customized to individual genetic profiles
- Cell & Gene Therapies: CAR-T therapies expanding beyond cancer
- M&A Surge: Increased acquisitions as Big Pharma seeks innovation
- Synthetic Biology: \$31.5B market by 2029, growing at 20.6% CAGR



2024-2025 Biotech Success Stories



Metsera - Obesity Treatment Breakthrough

Achievement: 7.5% body weight reduction in 36 days without titration - matching Novo Nordisk & Eli Lilly

Funding: \$215M raised in November 2024

Lesson: Superior efficacy + better patient experience = market disruption

Insitro - AI-Powered Drug Discovery

Innovation: Machine learning prescreens billions of molecular combinations

Impact: Reducing drug development timelines by years

Lesson: AI can bridge technology and life sciences for strategic drug discovery

Benchling - R&D Cloud Platform

Users: 200,000+ scientists worldwide

Value: Centralizes research data, improves collaboration

Lesson: Infrastructure tools can be as valuable as therapeutics



FOCUS AREA: Wearables, sensors, apps

The wearable medical devices market is experiencing rapid growth driven by remote patient monitoring adoption and advances in sensor technology.

Consumer wearables are increasingly incorporating FDA-cleared medical features, blurring the line between fitness trackers and clinical health monitoring devices.

\$42.74b
2024
global market

\$168.29b
by 2030
CAGR– 25%



FOCUS AREA: Wearables, sensors, apps

Samsung

sleep apnea
detection feature

Apple

irregular heart rhythm
notifications, and sleep
apnea detection

NeuroMetrix

chronic pain
management using
neurostimulation

Medtronic

continuous glucose
monitoring and insulin
delivery

Dexcom

Continuous Glucose
Monitoring

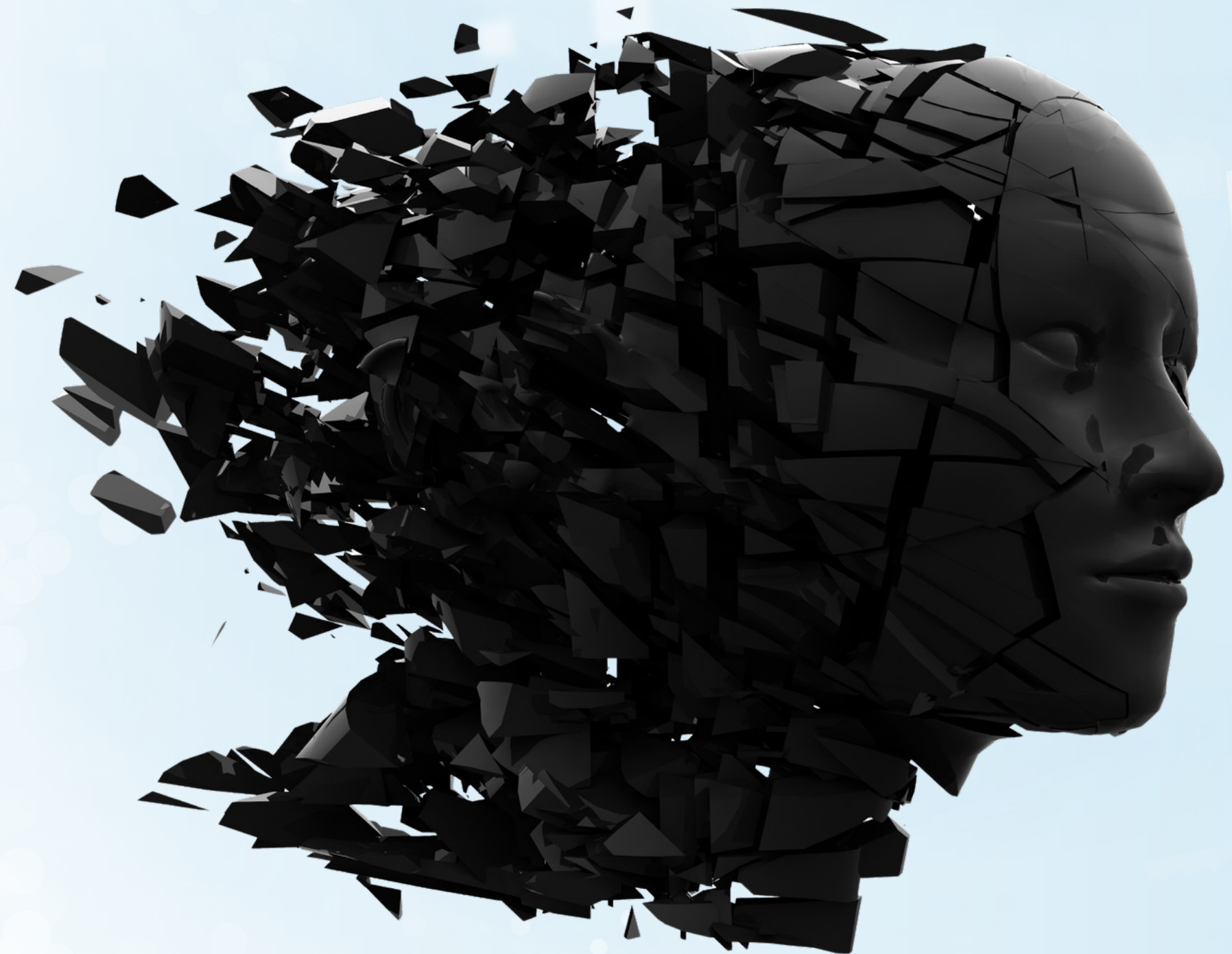
Oura

Premium wellness ring
Medical/Wellness

FOCUS AREA: Psychedelic Psychiatry & Neuroscience

One particularly exciting sector in biotech is psychedelic medicine for psychiatric disorders. This emerging field represents how biotech entrepreneurship tackles previously "untouchable" therapeutic areas.

\$8.3B
psychedelic
market by 2032



FOCUS AREA:

Psychedelic Psychiatry & Neuroscience

MindMed
(NASDAQ: MNMD)
Phase 3: LSD for
anxiety
\$75M raised Aug
2024

Compass Pathways
(NASDAQ: CMPS)
Psilocybin for
depression
Phase 3 results Q2
2025

Lykos Therapeutics
MDMA for PTSD
FDA rejected 2024,
conducting 2nd
Phase 3

Reunion
\$103M Series A for
postpartum
depression
Shorter-duration
psychedelics

ATAI Life Sciences
(NASDAQ: ATAI)
Multiple
psychedelic
compounds

Gilgamesh Pharma
\$65M upfront +
\$1.95B from AbbVie
Non-hallucinogenic
neuroplastogens