

# TRANSFORMING CUTTING-EDGE RESEARCH INTO LIFE-CHANGING PRODUCTS



YEDA Newsletter  
June 2023

## 2022 in Numbers:

>120

Companies based  
on Weizmann IP  
(Cumulative)

10

Companies initiated  
in 2022

510

Live patent  
families

73

New invention  
disclosures

145

Technologies  
available for licensing

>18,000

LinkedIn company  
page followers  
(current)



# Weizmann Innovation

In recent years, most early R&D for innovative biotech products has taken place in startups and small companies, while mature products are often commercialized by big pharma companies. Inspired by this trend, technology transfer companies have focused their efforts on spinning out companies to develop their technologies. The current economic uncertainty shines a spotlight on the challenges of bringing new technologies to market and particularly, academic spinouts requiring early-stage funding. Our approach to ensuring the success of Yeda's spinouts includes

building strong relationships with 'venture creators' - partners with whom we can create high-value companies and which may benefit society. Such venture creators are usually investment funds with biotech expertise, whose value is measured not only in their cash input, but just as importantly, in their professional and administrative contribution to a biotech venture. A good example of such a startup is Renewal Bio, which has been created by partnering with the NFX fund. Recently my team and I had a successful roadshow in Boston and NYC, where we discussed company

creation with several leading US VC's. In addition, we pitched our approach to dozens of European VCs in the recent BioEquity conference in Dublin. In both cases, we sensed genuine enthusiasm to commercialize Weizmann Institute techs and many discussions with our potential partners are now in process. We thank you for taking the time to read our newsletter, and hope you enjoy catching up on our latest innovations and startups.



Sincerely,

**Dr. Ronen Kreizman**  
VB BD Life Science

## Technologies in the Spotlight



**Alternating Current Powers Scalable Electrosynthesis Without the Need for Stirring**

Dr. Sergey Semenov's team presents a stir-free electrosynthesis method using AC electrolysis. This innovation eliminates inter-electrode mass transfer, enhancing efficiency and selectivity. Ideal for multiple scales, it handles diverse electrochemical transformations. This greener, efficient alternative revolutionizes industrial-scale electrolysis and chemical production speciality.

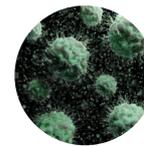
[Read more](#)



**A Solution To Global Vitamin D Deficiency**

Prof. Einat Segev and her team discovered that the microalga *Emiliana huxleyi* can be cultivated to produce both Vitamin D2 and D3, addressing global Vitamin D deficiency. Their sustainable, vegan-friendly method generates a dry biomass also rich in calcium and other nutrients, creating an efficient and eco-friendly approach to Vitamin D supplement production.

[Read more](#)



**A New Chapter in Antiviral Treatment**

Prof. Rotem Sorek's team discovered new bacterial enzymes that yield various antiviral nucleotide analogs. These natural compounds, chemically modified, exhibit strong antiviral effects against several human viruses with no current treatment. These molecules are stable in human plasma and show no adverse effects in animal models.

[Read more](#)

## Labs in the Spotlight



**Yonina Eldar**

The Signal Acquisition Modeling Processing and Learning (SAMPL) Lab excels in signal extraction and processing. They are innovating in areas like medical imaging, radar tech, communication and AI, pushing the boundaries in data acquisition and biomedical engineering. Their impactful work integrates cutting-edge science with real-world solutions.



**Boris Rybtchinski**

Prof. Rybtchinski investigates fundamental and applied aspects of organic self-assembly and employs it to create functional materials. In particular, the Rybtchinski group is interested in organic crystallization mechanisms, exploring them with state-of-the-art electron microscopy imaging. The acquired insights are utilized in rational design of sustainable plastics and energy materials.



**Assaf Vardi**

The Vardi Group explores the largely untapped molecular mechanisms behind the ecological success of marine photosynthetic microorganisms (phytoplankton). These organisms greatly impact global biogeochemical cycles and form massive oceanic blooms. The group aims to understand the cellular response of phytoplankton to microbial interactions and to uncover related cell signaling pathways and chemical signals.

# Companies in the Spotlight



## Quantum Source

Quantum Source, established in 2021, is building a novel core for a full-scale fault-tolerant photonic quantum computer, capable of scaling up to many millions of qubits. Such large-scale quantum computers will have the potential to unleash dramatic acceleration in numerous cutting-edge fields including drug design, material development,

cybersecurity and the processing of large datasets for AI applications. To date, companies worldwide have built small quantum computers with just tens or hundreds of qubits, that are not enough to support error-free large-scale computation. Quantum Source's solution enables orders-of-magnitude higher efficiency in the mass generation of the required photonic qubits. The company relies on unique chip-based photon-atom technology developed at Prof. Barak Dayan's Weizmann Quantum Optics group, which was joined by co-founders

Oded Melamed (CEO), Gil Semo (VP R&D) and Dan Charash (Chairman). With a notable achievement in securing a \$27 million seed round from renowned investors including Grove Ventures, Pitango First, Eclipse, Dell Technologies Capital and 10D, Quantum Source is positioned at the worldwide forefront of the quantum computing industry. For more information on Quantum Source and their groundbreaking advancements, continue reading.

[Read more](#)



## Nitrofix

NitroFix revolutionizes ammonia production to reduce the global carbon footprint. Their electrochemical process emits zero CO<sub>2</sub>, using nitrogen and water as reactants. With a novel catalyst, low overpotentials, and renewable energy sources, this sustainable method can be implemented in facilities of any size.

[Read more](#)



## Metabolic Insights

Metabolic Insights develops eco-friendly products using purified plant molecules. Their technology platform enables sustainable crop solutions through compound screening, analysis, production methods, upscaling and regulatory work.

[Read more](#)

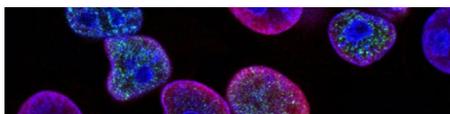


## Xinteza

Xinteza is leading the pursuit of novel genes and genetic paths for cannabinoid biosynthesis. Their comprehensive IP portfolio and exclusive licenses empower them to create pioneering bio-production approaches for cannabinoids and psychoactive ingredients.

[Read more](#)

## News



### Larkspur Biosciences Secures \$35.5 Million Financing to Outsmart Cancer

May 23rd, 2023

The company is working to develop precision immunotherapies for cancer. Their approach targets tumor-immune system interactions, initially focusing on colorectal cancer. Led by all-female leadership, they use patient data to overcome immune barriers. Funding by Polaris, 3E Bioventures and Takeda.

[Read more](#)



### Investing in Quantum Source: best in class team & technology

April 19th, 2023

Omri Green, Senior Director & Partner at Dell Technologies Capital, discusses the company's investment in Quantum Source, who are driving progress in the field of quantum computing. The team, founded by a squad of serial entrepreneurs and Prof. Barak Dayan from the Weizmann Institute of Science, aims to enable quantum computers to scale to millions of qubits using a photonics-based approach.

[Read more](#)

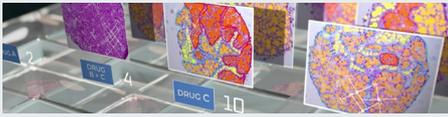


### Metabolic Insights Using Plant Molecules to Protect Crops, and Us

April 18th, 2023

Metabolic Insights develops bio-pesticides by extracting plant molecules to enhance food production safety. They collaborate with the Weizmann Institute, using a scalable platform to discover active ingredients. Their bio-based solutions attract global interest, providing faster time to market, cost savings, and environmental benefits over synthetic pesticides.

[Read more](#)



### Largest Israeli HMO, to Provide Commercial Coverage for the cResponse™ test

February 22nd, 2023

Curesponse's cResponse™ platform, an AI-driven oncology drug prioritization technology, is now covered by Clalit Health Services, Israel's largest HMO. The platform combines next-gen sequencing with a functional assay to assess tumor response, benefiting oncologists and patients in selecting personalized cancer treatments and impacting millions of cancer patients.

[Read more](#)



### Kadimastem & iTolerance Secure \$1M Grant from Bird to Develop Diabetes Cure

December 22th, 2022

The project aims to commercialize regenerative technology, IsletRx, for diabetes treatment without chronic immune system suppression. The funding will support pre-clinical and clinical development over 30 months. Kadimastem's product consists of human pancreatic islet-like cells that regulate sugar levels and produce insulin.

[Read more](#)



### Israeli Startup Raises €6.3M For Tech to Enable Fly Breeding for Food

December 18th, 2022

FreezeM is developing technology to breed black soldier flies as a sustainable protein source. Their innovative approach tackles the global food crisis and enables more sustainable protein production by optimizing the breeding process, allowing safe transportation and increasing protein production capacity.

[Read more](#)

## Team



### Dr. Igal Ilouz

VP Business Development, Exact Sciences



### Dr. Ronen Kreizman

VP Business Development, Life Science



### Dr. Elik Chapnik

Director of Business Development, Life Science



### Dr. Vered Pardo Yissar

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### Dr. Yael Klionsky

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