# Research and early discovery – a perspective of an early-stage VC



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# People behind

Biotech  Entrepreneur & AI pioneer

**Alex Zhavoronkov**
**Head of Advisory Board**

Accomplished Early-Stage Investor

**Garri Zmudze**
**Managing Partner**

Founder, Fundraiser & Serial Entrepreneur

**Sergey Jakimov**
**Managing Partner**

High-Profile Asset Manager & Banker

**Ilya Suharenko**
**Managing Partner**

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# Advisory board

**Alex Zhavoronkov**
*Head of Advisory Board*

CEO and Founder of Insilico Medicine. Pioneer in AI for Drug Discovery and Longevity

**Michael Levitt**
*2013 Nobel Prize Laureate*

Professor of Structural Biology, Stanford. Member of the National Academy of Sciences

**Matt R. Kaeberlein**

One of world's leading researchers of animal ageing. Professor of pathology, University of Washington

**Evelyne Bischof**

Harvard & Columbia trained physician. University Hospital Renji of Jiatong University of Shanghai

**Miro Venturi**

C-level executive, lead of pRED and Roche.. PhD in Molecular biophysics

**Luis Angel**

A corporate leader in life sciences space. Head of DrFirst's Consumer Solutions serving 70M patients

**Alexey Moskalev**

Head of Laboratory, Molecular Radiobiology and Gerontology Institute. Leading gerontologist in CIS

**Mike Martin**

Professor of Gerontopsychology, Director at Institute of Gerontology at the University of Zurich, Switzerland

**Evgeny Izumchenko**

Leading researcher in Notch signaling & carcinogenesis. Asst. Professor of Medicine, University of Chicago

**Tzipi Strauss**

Pediatrician & leading neonatologist from Israel. Director of Neonatology at Sheba Medical Center for 10 years

**Disclaimer: as VCs, we are pragmatic. We do not invest in life extension; we invest in prolonging healthy human performance.**

# Managing expectations, defining the terms

## Several frontiers of longevity tech

**”Happening now”** – expanded screening, AI-aided diagnostics, basic supplements, wearables, aging clocks and self-awareness.
Fast to validate, precedents available.

**“Early-stage VC horizon”** – 3-10 years from market, therapeutics in pre-clinics, vast majority – age-related disease focused. Preferably – platform tech, disease-modifying.
Not yet proven clinically but are focused with solid assumptions on mechanism of action.

**“Visionary fundamental science”** – 10+ years from market, great to have, largely theoretical as of now. Includes systemic rejuvenation, reversing telomere attrition, some epigenetic applications, cellular damage, general causes of aging etc.

# Rough breakdown

## Main pillars

**Therapeutics –** age-related diseases as a primary focus, disease-modifying effects, platform technologies.

Areas of specific excitement:

- immuno-oncology: TIL therapies (CTRL Therapeutics, Tailored Tx), IL27-focused drugs (Surface Oncology), anti-PD1, using virus to flag tumors (e.g. HPV for VerImmune), tumor microenvironment research, etc.
- Neurodegenerative – leading hypotheses still vague (e.g. amyloid thesis); bigger room for auto-immune hypothesis; remyelination (Glyxogen, Neurogenesis); AZ vaccines (Nuravax), chronic pain management via gene editing (Navega Tx. – targeting Nav)
- Epigenetics – first local deliveries, looking at systemic in the future (TurnBio)

**Non-therapeutics -** same disease focus, emphasis on ultra-early discovery (AOA Dx) + personalized treatment (PreComb) + AI for drug discovery (Insilico as a powerhouse)

Agetech – apps (Humanity), infrastructural (First Longevity)

# Major points of attention

**Teams – its all about human capital**

**Realistic assumptions vs. wishful thinking**

**Translatability of base science**

**Short-term focus, long term platform potential**

**Different expectations in thera vs. non-thera**

**State of IP – major red flag in 50% of cases**

# Examples?

# Case study
# Turn Biotechnologies

turn.bio

Stanford University

## Company Overview

- Turn Biotechnologies is a **Stanford spinout** - preclinical biotechnology company developing **mRNA medicines that promote partial epigenetic reprogramming to cells**, making them return in time without losing differentiation
- Company's proprietary platform, ERA™, relies on a lipid nanoparticle-based delivery of mRNA to deliver transcription factors to the epigenome
- Compared to iPSC, with ERA™, a cell's exposure to both the dosing and timing of transcription factors is controlled and more limited, allowing to main cellular identity
- Turn Bio is focusing on dermatology and ophthalmology as their primary therapeutic indications. The dermatology program (TRN-001) is expected to reach Phase 1 clinical trials in the second half of 2022

## Team

**Vittorio Sebastiano, PhD.** Co-Founder & Scientific Advisory Board Chairman
- Assistant Professor at Stanford University School of Medicine

**Marco Quarta, PhD.** Co-Founder and Chief Scientific Advisor
- Founded and co-founded 3 companies;
- 15 years in research

**Jay Sarkar, PhD.** Co-Founder and CTO
- Helped create the ERA Platform
- PhD in Applied Physics
- 15 years in research

**Anja Krammer.** CEO
- Co-founder of 3 Silicon Valley startups
- Vast experience in managing roles
- Board member at Vivos (listed)

# Case study
# PreComb Therapeutics

PreComb Therapeutics

## Company Overview

- Swiss biotech company, focused on ex-vivo cancer diagnostics to improve treatment outcome for cancer patients.
- By using a fresh sample of the patient's tumor, a large number of representative 3D tumor twins are generated and analyzed for their susceptibility or resistance to a broad range of cancer drugs and drug combinations.
- Using unsupervised deep learning, individual treatment responses are analyzed and aggregated into proprietary drug response database, which serves as the basis for population-based predictions.
- Potential customers include pharma companies (research) and clinics (therapy guidance).

## Team

**Jens Kelm, PhD, CEO, Co-founder**

- Pioneer in 3D microtissue culture technology (50 publications, 11 patents)
- Ex co-founder and CEO of Insphero AG
- PhD in cell biology from ETH Zurich

**Peter Steiner, Interim CEO**

- Executive Director, Head of the Production & Processes department of ESBATech (Novartis company)
- Co-founder of Insilico Biotechnology
- PhD in biotechnology from ETH Zurich

**Olivier Mauti, PhD, CTO**

- Head of Laboratory at ESBATech (Novartis company)
- Head of Automation at Neurimmune AG
- PhD in Neuroscience from the University Zurich

# Case study – currently leading the round
# Haut.AI

## Company Overview

- Founded in 2018, HautAI developed a non-medical dermatology tool powered by AI that will help users understand issues and aging processes of their skin, hair, and nails
- HautAI product is a B2B SaaS tool available as an API and SDK
- Company has 57 paying customers across 28 different countries. Recently, HautAI entered into a strategic partnership with UltaBeauty, the largest beauty retailer in the USA
- The company is raising €4M Series A

## Team

**Anastasia Georgievskaya, CEO, Co-founder**

- Research Scientist with Beauty.AI, RYNKL Hongkong (6 years)

**Konstantin Kiselev, CTO, Co-founder**

- Director of London based AI company (4 years) active in predictive maintenance, QC and industrial processes optimization

**Timur Tlyachev, Head of Data science**

- Head of Machine-Learning dept. in UK based company Conundrum
- PhD from Moscow state University

# Fundamental research – should be a non-profit territory. Problem – funding insufficient, asymmetric

## Our own example -

Longevity Science Foundation

# Lessons when investing in research and early discovery:

**D/D – capable in-house team is a must**

**Focus – key, there are too many exciting deals out there**

**Allocations and relationships with research institutions - fundamental**

**Tunnel effect* - buries a lot of new investors**

*** - see:** Hirschman, Albert O., and Michael Rothschild. “The Changing Tolerance for Income Inequality in the Course of Economic Development.” *The Quarterly Journal of Economics* 87, no. 4 (1973): 544–66. https://doi.org/10.2307/1882024.

# Thank you. Let’s talk

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