

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

LONGEVC — THE FUTURE BELONGS TO BIOTECH FOUNDERS
© ALL RIGHTS RESERVED, YEAR 2022

www.longevc.com

People behind

Biotech Entrepreneur
& AI pioneer



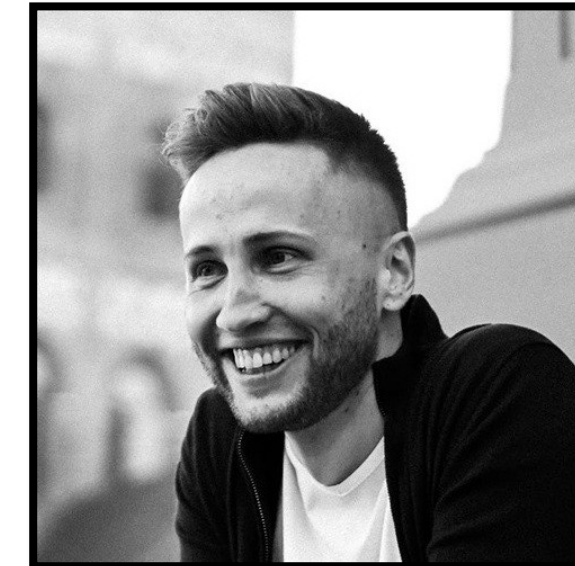
Alex Zhavoronkov
Head of Advisory Board

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



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)

Agotech – 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



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

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

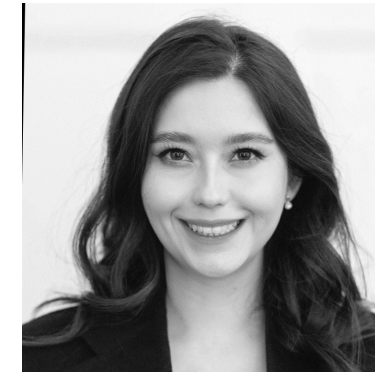
Haut.AI



Company Overview

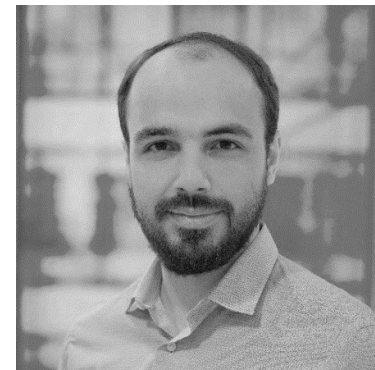
- Founded in 2018, HautAI developed a non-medical dermatology tool powered by AI that will help users understand issues and aging processes of their skin, hair, and nails
- HautAI product is a B2B SaaS tool available as an API and SDK
- Company has 57 paying customers across 28 different countries. Recently, 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

Sergey Jakimov
sj@longevc.com

www.longevc.com