R42 XPrize Healthspan Superteam Coalition

Demo Day - Aug 16, 2024

R42 XPrize Healthspan Team - *Youth, Age, Brilliance!!*

Otto Farag
(Palo Alto, CA), Rising junior at the University of British Columbia studying international economics

Kim Parnell
(Sunnyvale, CA) Stanford PhD Mech Engineer; Expert Witness for Litigation Patents, Failures, Product Liability; Consultant: Mech Engineer

Cate Pittman
(Woodside, CA), Rising sophomore at Dartmouth College studying engineering

Team Mentor

Dr. Ronjon Nag is an inventor and entrepreneur, and Adjunct Professor in Genetics at Stanford Medicine. He has been working in AI for 40 years.

Paul Harris
(UK, Cambridge) Bio-tech, healthspan, investing, Molecular bio Imperial

Kateryna Kostyuchenko
(Kyiv, Ukraine) Data analyst, DAO community lead, Decentralized Science advocate

Fernando Aires
(Scottsdale, AZ) - R42 LP, real estate investor, biohacker, prev: Apple chip designer, program manager IP for Apple & 3rd party vendors
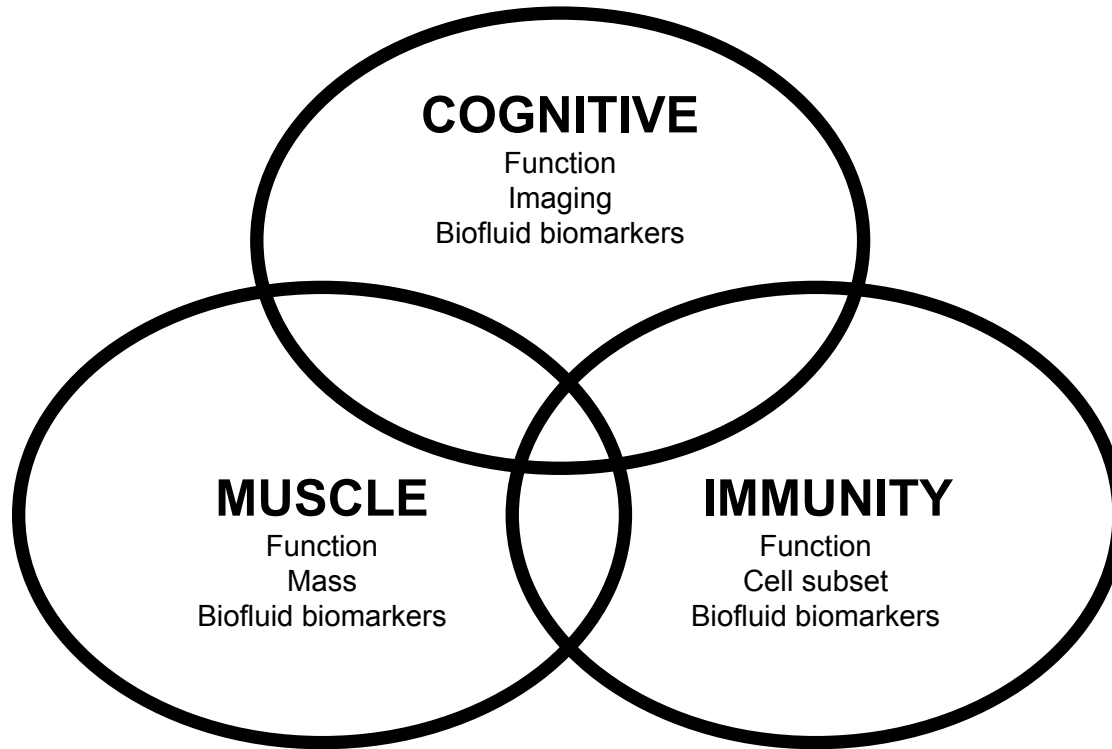
R42 **XPrize Healthspan SuperTeam Coalition**

XPrize is a $101M, 7 year global competition to increase healthspan

➔ **Winning team must give their therapeutic in 1 year or less and prove a 10 year minimum increase in lifespan**

➔ **Immune, Cognitive, and Muscle function tests are used to evaluate lifespan increase**

➔ **R42 Superteam** - partnering with multiple R42 portfolio companies

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Competition Milestones over 7 Years

FINAL GUIDELINES RELEASED, PRIMARY REGISTRATION
QUALIFYING SUBMISSIONS CALL
July 2024

SEMIFINALS JUDGING: MILESTONE 2

START FINALS:
Healthspan 1-Year Clinical Studies
2026-2029
$10M Milestone 2 ($1M x 10 Teams)

FINALS JUDGING & WINNERS ANNOUNCED

Grand Prize Healthspan: up to $81M Total Prize Purse

FSHD Bonus Prize: $10M Total Prize Purse 2030

'23 '24 '25 '26 '27 '28 '29 '30

PUBLIC LAUNCH
November 2023

INTENT TO COMPETE OPENS
November 2023

PUBLIC COMMENT PERIOD OPENS
November 2023 - June 2024

QUALIFYING SUBMISSIONS JUDGING: MILESTONE 1

START SEMIFINALS:
Proof-of-Concept Clinical Studies
2025-2026
$10M Milestone 1 Award ($250K x 40 Teams)

START FINALS: FSHD
2025-2029
$2M Milestone 2 Award ($250K x 8 Teams)

FINALS CLOSE FOR JUDGING
Grand Prize: Healthspan + FSHD Bonus

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How to Win the $101M HealthSpan XPrize?

COGNITIVE
Function
Imaging
Biofluid biomarkers

MUSCLE
Function
Mass
Biofluid biomarkers

IMMUNITY
Function
Cell subset
Biofluid biomarkers

R 42

Muscle Function Testing ..
includes Physical & Fluid Biomarkers

➔ **Endurance Capacity: Peak VO2**

➔ **Lower Body Power: Rate of Torque Development**

➔ **Total Muscle Mass: D3 Creatine Dilution**

Function Health Test: $500 Annual for 100+ Lab Tests

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Cognitive Function Testing

➔ **Cognitive Summary Score: NIH Fluid Composite Score**

➔ **NeuroGames, blood biomarkers, genetics, and brain MRI**

Cognitive Test: from $99 per Person

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Immune Function Testing

➔ **Response to challenge: *Ex vivo* native immune response**

➔ **Immune cell composition: IMM-AGE score**

➔ **Inflammatory status: SASP Index**

Immune Function: $2500-$5000 per person

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XPrize Team Advisory Board

Prof Michael Snyder Chair, Stanford Genetics
Prof Anne Friedlander Stanford Human Biology
Prof Lorna Harries Exeter University, CSO of Senisca

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Current Superteam Companies
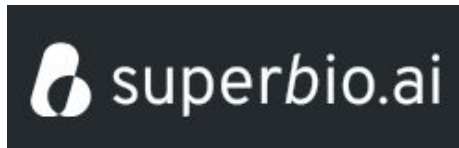
KETOSWISS

Supplements to induce ketosis without fasting or dieting

XPrize focus

COGNITIVE

MUSCLE   IMMUNITY
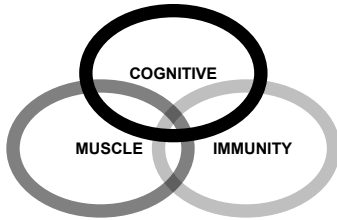
Enhances **cognitive** function, supports anaerobic exercise for **muscle** building, and boosts mitochondrial function
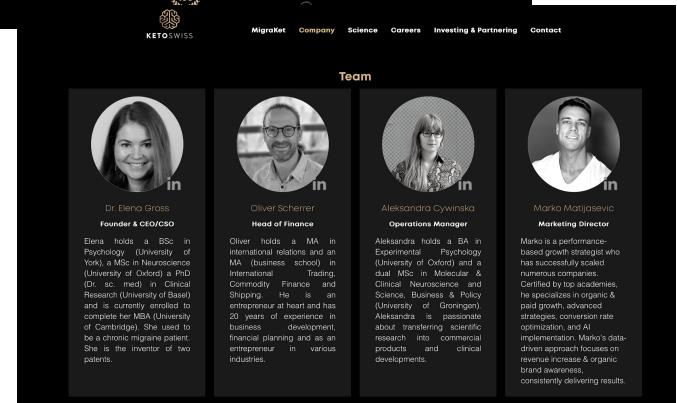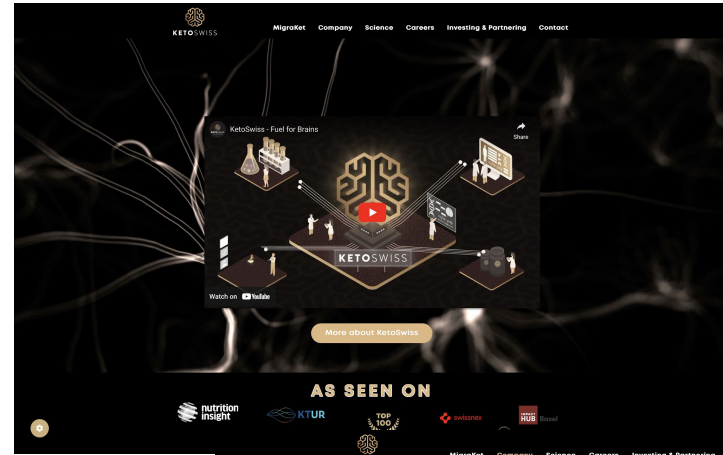
keto.swiss

AGEMICA

Vaccine for aging using an Artificial Intelligence driven approach

XPrize focus

COGNITIVE

MUSCLE   IMMUNITY
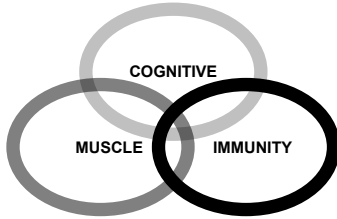
Enhances **immune** function and extends lifespan. Improves **muscle** function in FHSD (Facioscapulohumeral Muscular Dystrophy) patients, additionally aiming for the $10M FSHD bonus prize

Bioreactor-Grown Mitochondria transfused back into patient

XPrize focus

COGNITIVE

MUSCLE   IMMUNITY
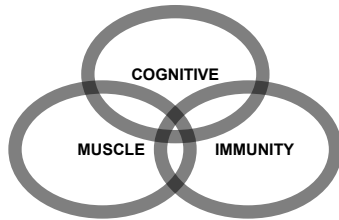
Increases energy throughout the body, enhancing overall biological function. All three focus areas benefit from this therapeutic approach

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Bioreactor-Grown Mitochondria

A New Type of Regenerative Medicine
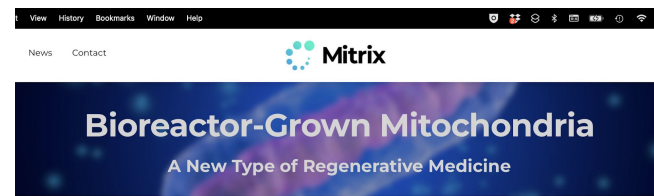
Mitochondrial dysfunction is implicated in dozens of age-related diseases, including Alzheimer's, retinal disease, liver dysfunction, immune senescence, and more.

Mitrix Bio has pioneered a new way of addressing these diseases, using young bioreactor-grown mitochondria encased in vesicles, which we call "Mitlets."

Our mission: prototype the components and techniques needed for a fundamental advancement in human medicine.

itochondrial Bioreactor

The bioreactor grows young mitochondria in large quantities then wraps them in a special coating with receptors to target specific organs. The go is to produce bioreactor-grown mitochondria on an industrial scale, sufficient to supplement every person over the age of 55... Learn more.
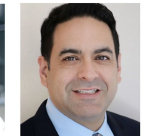
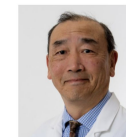About   Science   News   Contact

Team

Tom Benson
CEO

Kyle Cetrulo
COO

Benedict Albensi Ph.D
Scientific Advisor

Vinit Marhajan MD, Ph.D
CMA

George Wu MD, Ph.D.
Scientific Advisor

Eric Boilard Ph.D.
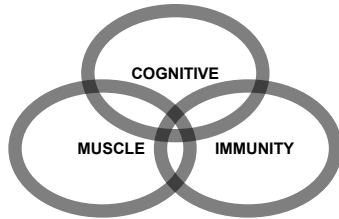Scientific Advisor

Martin Pelletier Ph.D.
Scientific Advisor

Aida Adlimoghaddam Ph.D.
Scientific Advisor

mitrix.bio

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Health metrics & biomarker tracker using multiple sensors

XPrize focus

COGNITIVE

MUSCLE   IMMUNITY

Clinical trial partner for tracking health data, including vitals, hormonal levels, cardiovascular health, biomarkers, small molecules, and blood vessel management

R42

X10e

Our Vision   The Team   Opportunities   Patient Registry

A Disruptive Technology for the Humans of Tomorrow

Your body produces data continuously:
what can you learn from it?

X10e

Our Vision   The Team   Opportunities

The team

Silvia Veronese
Founder and CEO

Ronjon Nag
Founder

x10e.com
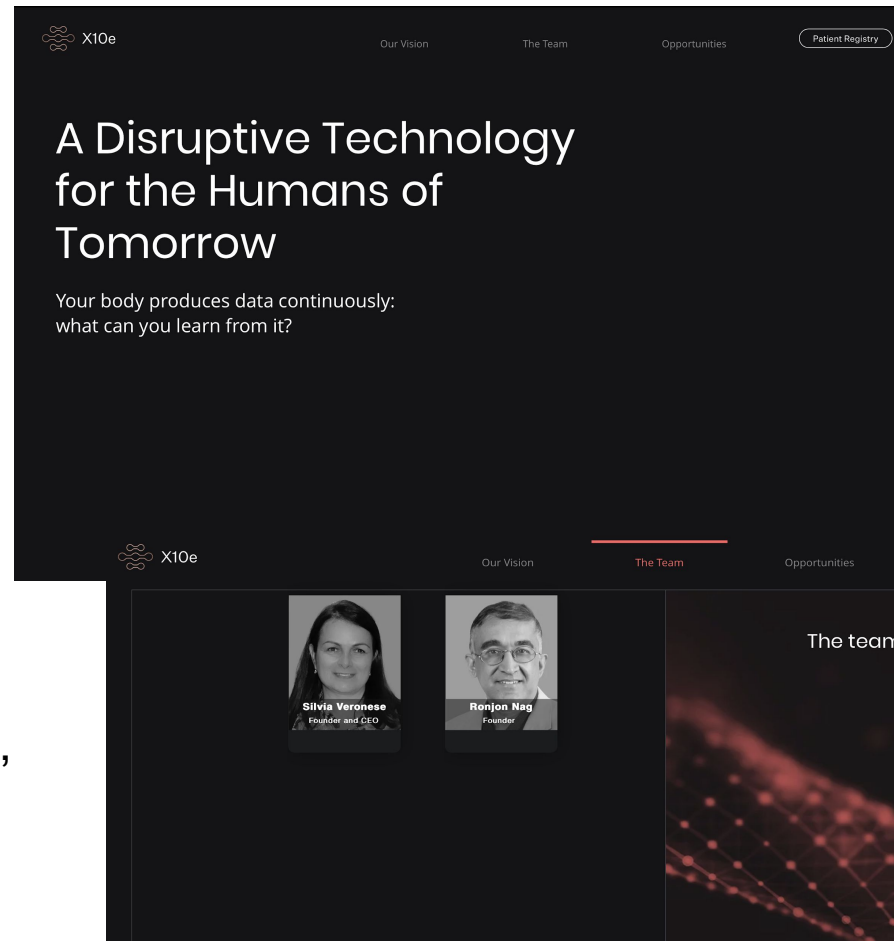
Radically improves oxygen delivery using nanoparticles

XPrize focus
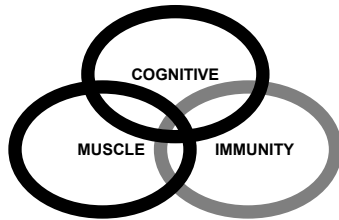
Improves VO2, important for **muscle** enhancement. Potential benefits for brain health and **cognition**

SWAZA-1 is the first non-invasive nanofluid breathing aid that enables dynamic gas exchange across fluid and fibrotic barriers at the lung surface
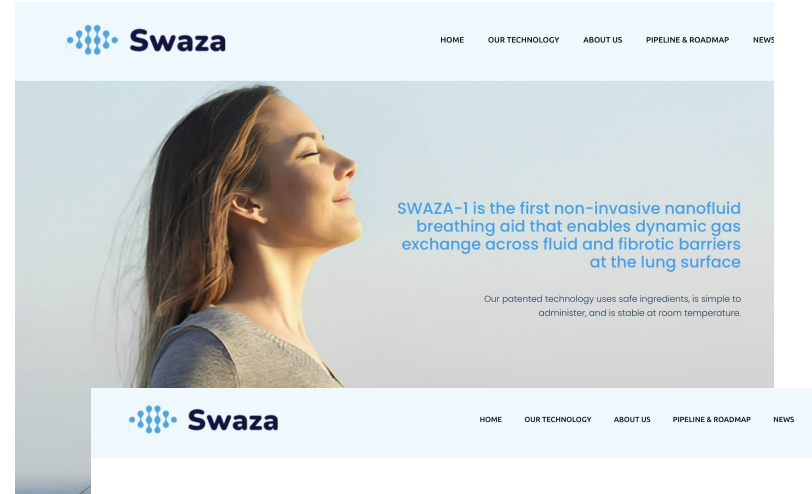
Our patented technology uses safe ingredients, is simple to administer, and is stable at room temperature.

Team

Prof. Jayakumar Rajadas, PhD
Co-Founder & Chief Scientist

Niki V. Santo
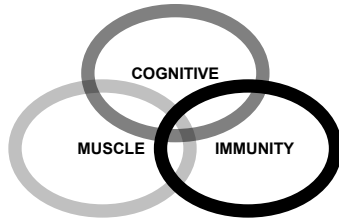Co-Founder & CEO

Dr. Artem Trotsyuk, PhD
Chief Technical Officer

Dr. Anastassios Retzios, PhD
Director of Regulatory and Clinical Affairs

swaza.life

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Targets specific senescent (zombie) cells with DNA damage

XPrize focus

COGNITIVE

MUSCLE   IMMUNITY

Removing senescent cells enhances **immunity**. These cells stop dividing but remain alive, releasing toxins that cause chronic inflammation and fibrosis

TARGETING UNDERLYING BIOLOGICAL DRIVERS OF CHRONIC DISEASES

Rubedo discovers and develops medicines to keep you biologically young by targeting the pathologic cells that drive aging

LEADERSHIP AND FOUNDERS

The Rubedo leadership team is comprises of industry leaders from large pharma, leading biotech companies and pioneers in longevity, early development chemistry, technology, and life sciences. The team has extensive expertise in drug development across early stage to commercialization

MARCO QUARTA, PHD
Co-Founder and CEO

MARK GALLOP, PHD
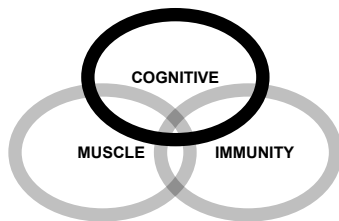Co-Founder, Chairman Chemistry and Development
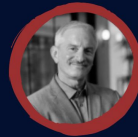
OFIR MORENO, PHD
SVP Drug Discovery

rubedolife.com

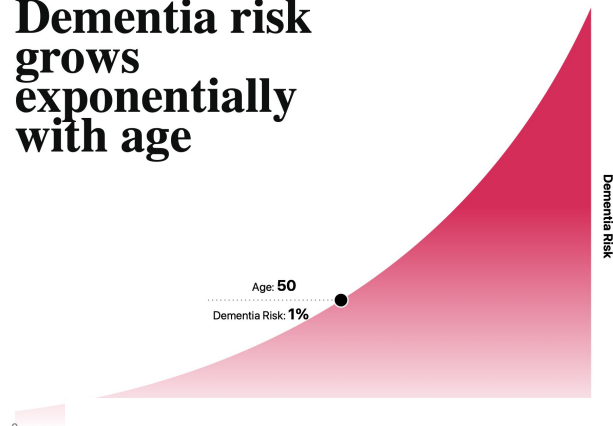**R 42**   **XPrize Healthspan SuperTeam Coalition**

Uses AI to discover drugs that prevent brain degeneration

XPrize focus

AI-driven approach to reversing brain aging enhances **cognitive** functions and combats neurodegenerative disorders like Alzheimer's

Dementia risk grows exponentially with age

Age: **50**
Dementia Risk: **1%**

Our Executive Team has a deep personal connection to fighting brain aging. Christin's grandmother passed away from Alzheimer's disease when she was a child. She witnessed the suffering that brought to her grandmother and to her loved ones. Since that time, she has had a lifelong commitment to creating better treatments for Alzheimer's, starting with reading about the hippocampus as a third grader in the school library and then going on to obtain her MD and PhD in Neuroscience from the University of Pittsburgh and Carnegie Mellon Medical Scientist Training Program. She completed her postdoctoral training at MIT and is an expert in AI and computational modeling.

Update to: Priyanka was diagnosed with early onset glaucoma in her twenties, a neurodegenerative condition that left her temporarily blind for several months during her PhD at the University of Cambridge. Getting an early diagnosis was crucial in her successful treatment. Glaucoma is age-related and still doesn't have a cure. Slowing down biological aging of the neurons in her eyes can prevent her glaucoma from progressing to irreversible blindness. Motivated by her own diagnosis, she is deeply committed to finding therapies that slow down aging and treat neurodegenerative conditions.

mimio™

Mimics fasting with supplements to enhance cellular cleanup

XPrize focus

COGNITIVE
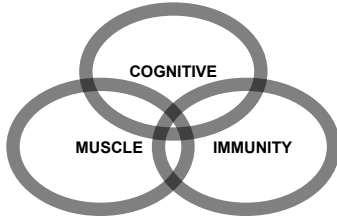
MUSCLE

IMMUNITY

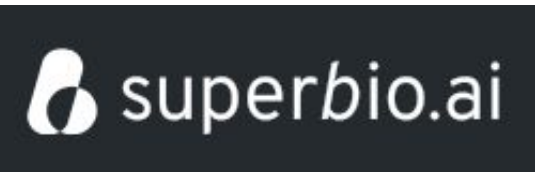Spermidine enhances autophagy, protecting against neurodegenerative diseases. Improves **muscle** function by clearing damaged cellular components and boosts **immunity** by eliminating pathogens
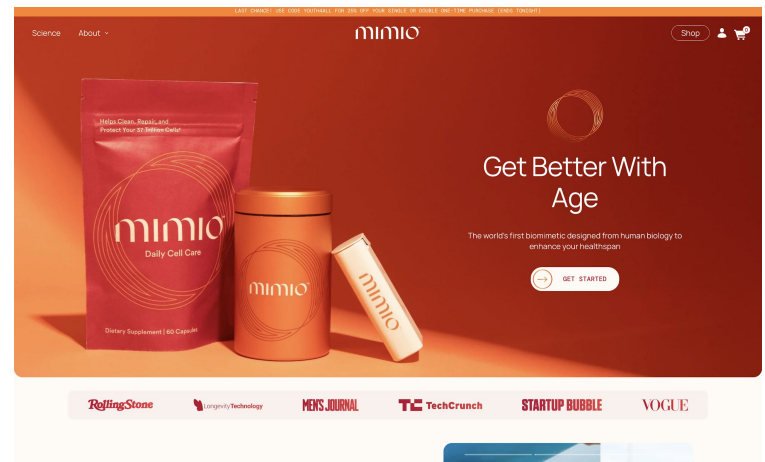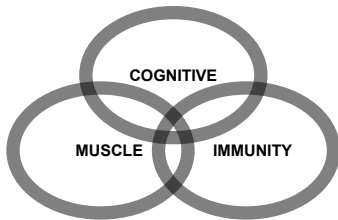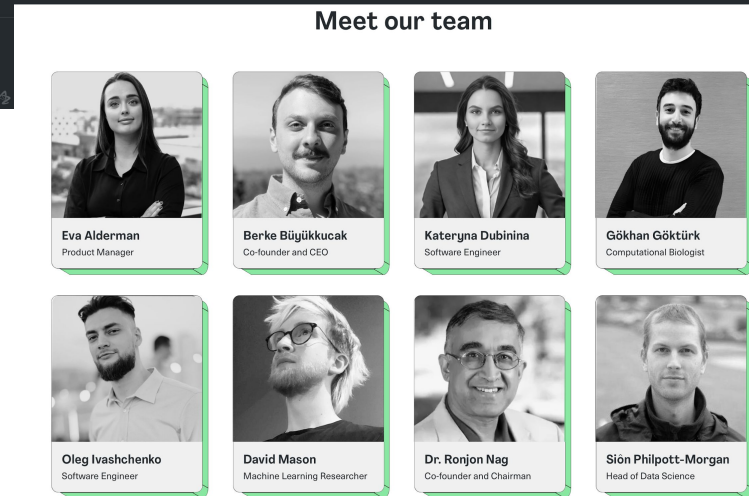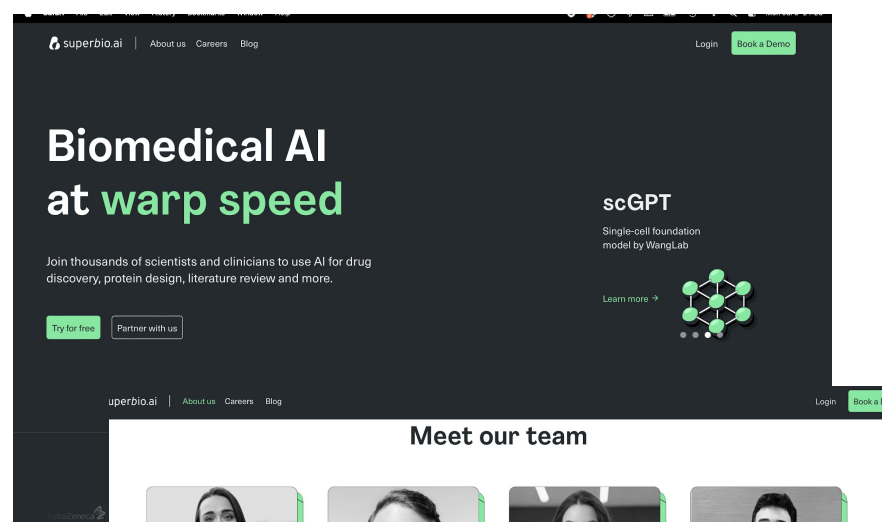
mimiohealth.com

General AI support with biomedical platform and tools

XPrize focus

Cross check and manage different effects of various therapeutics across our XPrize SuperTeam coalition

superbio.ai

Adaptive Trial to Evaluate Largest Therapeutic Impact

➔ **Adaptive trial design, creating mixed groups with different treatments so we can discover what treatments have the most impact.**

➔ **30 to 60 days**

➔ **10 to 20 people**

➔ **Relatively inexpensive trials used to help design and fine tune larger trials.**

➔ **Treatments that show no or very little impact after PoC trial will be dropped or replaced**

➔ **PoC trials to be run on the cheap.**

  ◆ **donated meds,**

  ◆ **at cost or donated tests and resources**

  ◆ **Self testing and self reporting**

  ◆ **Knowledge and facilities exchanged for publicity and logo added.**

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Final Trial Design: 1 Year Large Group Trial

➔ **100-150 people from our Population:**

    ◆ **Average age : 75 (Age Range 50 to 80)**

    ◆ **Region: United States**

    ◆ **Health factors: above average BMI and low activity levels**

    ◆ **Gender ratio: close to 50%, Diverse ethnicity**

➔ **Location:**

    ◆ **United states (Depending on FDA approval)**

➔ **Duration**

    ◆ **3 months of pre-trial baseline testing**

    ◆ **1 year of interventions and testing**

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Pre-Trial At Home Baseline Testing

➔ **Testing done in one month intervals for three months before the trials start**

➔ **Participants will be given monitoring devices to both track exercise and establish measurements for Peak VO2 max**

➔ **Cognitive and Peak VO2 tests are done remotely while test kits for immune and D3 Creatine Dilution are shipped to participants for at-home testing**

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Trial Intervention Design

➔ **Randomized participant groups are given slight variations of most effective interventions in Proof of Concept Trial**

➔ **Low-carb diets, regular exercise routines implemented**

➔ **Participant adherence is tracked by smart devices**

➔ **Final 3 testing rounds are done in same way as initial rounds**

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XPrize Competition Guidelines - Highlights

➔ **Interventions cannot include measures used for endpoint assessment.**

➔ **Provide federal regulatory approvals, safety monitoring plans for trials**

➔ **Team may recruit experts, add new members at any time.**

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TEAM LOCATIONS

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XPrize Potential Trial Participants & Investors

Potential trial participant?	Trial contact form: https://bit.ly/R42-xprize-trial-sub
Sponsor our R42 XPrize Superteam?	Sponsor contact form: https://bit.ly/R42-xprize-sponsor

Questions? Email us:

XPrize-R42@GoogleGroups.com

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