FORESIGHT INSTITUTE

2022 Longevity Workshop

Foresight Institute
Allison Duettmann
Aaron King

May 21-22, IndieBio HQ
San Francisco, CA

Table of Contents

These icons, found throughout the report, link to recordings of each presentation

About Foresight

Since 1986, The Foresight Institute has advanced beneficial use cases of high-impact technologies for long-term futures.Through virtual seminars, fellowships, workshops, and prizes, we support science and technology that is too early-stage, interdisciplinary, or ambitious for legacy institutions to fund.

Our focus areas include:
Molecular Machines to better control matter
Biotechnology to reverse aging
Computer Science to secure human AI cooperation
Neurotechnology to support human flourishing
Spacetechnology to further exploration

FORESIGHT INSTITUTE

Workshop Sponsors

100+ CAPITAL

LONGEVITY TECH.FUND

50 Y Fifty Years

Alex Zhavoronkov LONGEVITY PLEDGE

The Longevity Prize

INDIE BIO

On Deck

Executive Summary

The longevity sector is growing, and there are a few areas that could benefit from support from external funders and new talent entering the space. To facilitate discussion and create connections, Foresight Institute hosted a two-day event and invited Foresight's Biotech & Health Extension Group's top researchers, entrepreneurs, and funders to highlight undervalued areas ready for progress. In addition to learning about opportunities relevant to their field, the workshop was specifically designed to create an impetus for collaboration on shared long-term goals.

A scientific overview of the field, based on a longevity technology tree, was followed by brief keynote presentations highlighting outstanding challenges. In plenaries and smaller groups, participants collected, categorized, and refined questions of common interest, and proposed approaches for solving them.

This report will summarize the resulting proposals and highlight seminar videos available for you review. It's interactive: click on the play icon in the images to watch the corresponding recordings.

Those who had final proposals were encouraged to submit their approaches to the Longevity Prize, initiated in collaboration with VitaDAO and Foresight Institute. The Prize fund, totaling $300k+ contributed by 6000+ individuals, aims to reward scientists for their ideas on how to excel their field, by awarding up to $20k for the top hypothesis related to making progress in an undervalued field of longevity. Those with the best hypotheses are eligible for follow-on funding at a later stages.

In sum, it was rewarding to see leading figures in longevity deeply engage in progressing the field forward, red-team each other's work, and propose challenges that go beyond existing efforts. At the end of this three-day marathon, there was a real community vibe. We believe this owed to the wonderful pre-event, which led to the main workshop, spontaneous evening breakout sessions, and after show gatherings. Alex Zhavoronkov, a participant of our workshop shared their experience in this published Forbes magazine article here: A Weekend by Foresight Institute: A Community for Future Technologies. We encourage you to apply or reach out, if you are interested in supporting ongoing progress.

Allison Duettmann
President & CEO
Foresight Institute
a@foresight.org

Participants

Ada Nguyen
On Deck Longevity Biotech

Alex Trapp
Retro.bio

Alex Zhavoronkov
Insilico Medicine

Alexandra Stolzing
SENS

Amit Deshwar
Deep Genomics

Anastasiya Giarletta
R42

Anastasia Egorova
Open Longevity

Aschwin de Wolf
Advanced Neural Biosciences

Ashton Trotman-Grant
Fifty Years

Borys Wrobel
Adam Mickiewicz University

Brad English
University of Bonn

Catthu
VitaDAO

Christine Peterson
Foresight Institute

Clarice D.Aiello
UCLA

Dane Gobel
Methuselah Foundation

David Gobel
Methuselah

Dylan Livingston
Alliance for Longevity Initiatives

Eduardo Beltrame
Retro Biosciences

Elliot Schrage
Facebook

Emil Kendziorra
Tomorrow Biostasis

Flora Guo
University of Waterloo

Iosif Gershteyn
Immuvia

Jay Azhang
Pump

Jean Hebert
Albert Einstein College of Medicine

Jonah Sinick
Equator Therapeutics

Joe Betts-Lacroix
Retro

Jose Luis Ricon
Rejuvenome

Juanita Matthews
Tufts University

Jun Axup
E11

Jyothi Devakumar
The Longevity Tech Fund

Kai Micah Mills
Cryopets

Karl Pfleger
Agingbiotech.info

Kamen Shoylev
New Balkans Law Office

Kenia Popkin
Apeiron Investment Group

Kirill Satanovsky
Longevitytech.fund

Kristen Fortney
BioAge

Kyle Brewer
Etta Biotechnology

Lada Nuzhna
Impetus Grants

Lan Dao
Exo-Genesis

Luis Rios
Vine Ventures

Mac Davis
Minicircle

Mark Hamalainen
LessDeath

Matt Bell

Mike Sinn
QuantiModo

Morten Scheibye-Knudsen
Scheibye-Knudsen Group

Nathan Cheng
ODLB

Nikola Markov
Buck Institute

Nikolina Lauc
GlycanAge

Petr Sramek
Longevity Tech Fund

Peretz Partensky
Immune Bridge

Leon Peshkin
Harvard

Ravi Kiron
BioPharma External Innovation

Reason
FightAging

Robert Cargill
Glionics Inc

Sara Kemppainen
Fifty Years

Sergio Ruiz
Turn Biotechnologies

Shu Li
Petri Bio

Sonia Arrison
100 Plus Capital

Stephen Price
Kanaria Life Sciences

Tatyana Dobreva
ImYoo

Vadim Gladyshev
Harvard

Vera Gorbunova
University of Rochester

Will Olsen
Engage Bio

Yuri Deigin
YouthBio

Zvonimir Vrselja
Yale University

Introductory Presentations

Allison Duettmann (below), President of Foresight Institute, laid out the general steps of the workshop. First, keynote presentations were given, and challenges were mapped out onto the tech tree. Top challenges were voted on, and working groups formed to generate hypotheses for each challenge. Winning hypotheses, determined by votes, were presented with $500 awards. These hypotheses have the potential to be expanded upon and eventually submitted to the Longevity Prize for a potential $20,000 prize.

Catthu Nguyen (below left), representing VitaDAO, gave a talk about VitaDAO and the Longevity Prize. VitaDAO invests in longevity companies in the $50k-$1m range, targeting early stage projects that need to overcome the "valley of death." Their model utilizes IP-NFT's as a method for tracking IP ownership. VitaDAO's nonprofit initiatives include Gitcoin quadratic funding grants as well as the Longevity Prize, an effort to educate and engage people with the bottlenecks holding back progress in longevity. The Longevity Prize currently targets small to medium sized projects for funding.

Aaron King (above right), Research Director at Foresight Institute, briefly outlined the Foresight tech tree project. Foresight is developing graph database maps of neurotech, nanotech, intelligent cooperation, space, and longevity technology domains. The goal is to produce something akin to a graphical wikipedia to contextualize the progress being made in these future facing areas, with a high-level understanding of all the research and companies operating in each of these fields.

Keynote Presentations

Rapidly unfreeze and revive a mammal

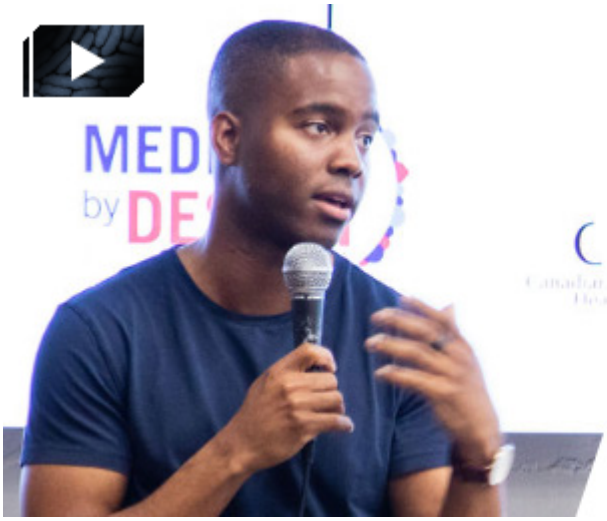
Alex Zhavoronkov, CEO of Insilico Medicine, challenges the cryonics field to revive a mammal from cryostasis. Cryonics is the science of vitrifying and reviving living tissue for preservation. Currently cells and some tissues can be revived, but no organ or mammal has been cryogenically preserved and resuscitated yet. Alex is interested in noble gasses and their potential to achieve rapid cooling and rapid heating under certain pressure and temperature conditions. Figuring this out could help solve the problem of ice crystal formation during cryostasis and reanimation procedures, paving the way for reanimation of a small mammal after preservation.

Creating good pre-clinical lifespan studies to test senolytics

Alexandra Stolzing, Prof. of Biogerontological Engineering at Loughborough University, asks this question - can the community come together to define minimal criteria for defining a senescent cell? Senescent cells are cells which are incapable of division, effectively reaching the end of their regenerative potential. The scientific definition of senescence is still ambiguous, and this is causing problems for identification and therapeutics against senescent cells. She asked for recommendations to set standards for experimental protocol and brought attention to the need for an aging model data hub. She also reiterated the need for shorter lifespan studies that use proxy measurements to determine longevity success.

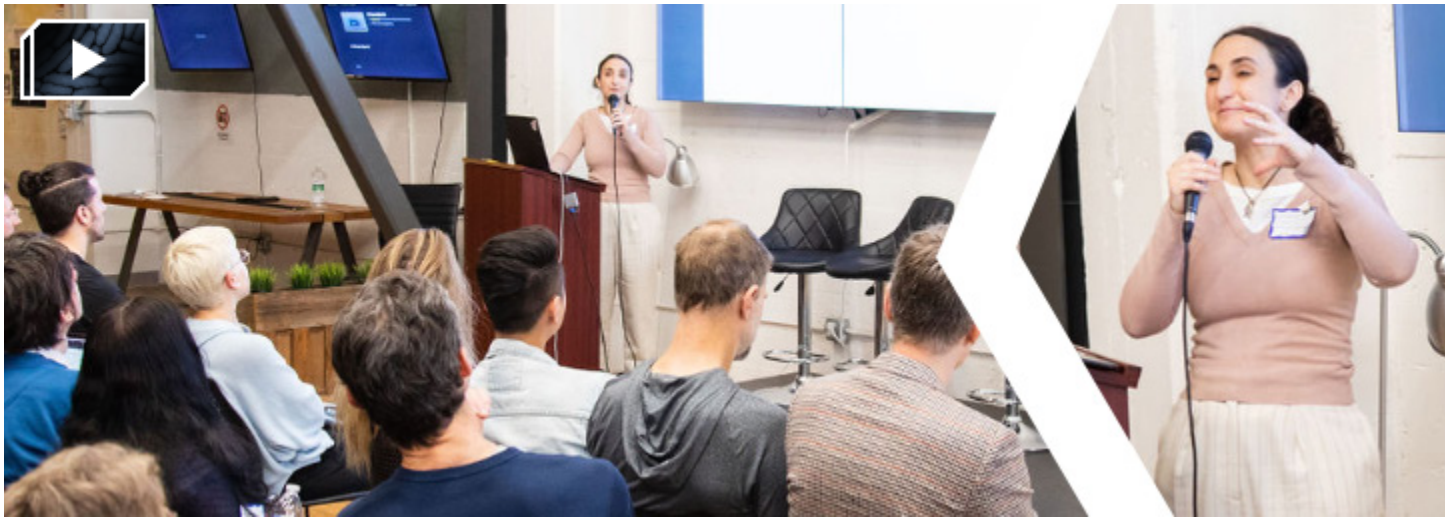
Reversing Immunosenescence to Respond to Novel Antigens

Ashton Trotman-Grant, Synthetic Biologist at 50 Years, spoke about the immune system and how it changes with age. Thymic involution, repertoire reduction, and inflammaging are some of the hallmarks of the aging immune system. These changes make it more difficult to respond to disease, eliminate cancerous or senescent cells, and heal wounds as you get older. A stem cell transplant is the best way to regenerate the thymus at this point in time, but it's an ineffective process. Ashton proposes four new methods - targeting the epithelial microenvironment, modulating hormones and metabolism, focusing on cell therapies, and targeting hematopoietic progenitor cells for thymic regeneration.



Controlling Endogenous Quantum Degrees of Freedom

Clarice D. Aiello, UCLA Professor, covered quantum mechanics and its impact on biology. Quantum mechanics deals with the behavior of atomic and subatomic particles, such as electrons and protons. Specifically, she focuses on electron spin mechanics and how quantum spin alters chemical reactions. Cryptochrome is a protein that appears to be sensitive to magnetism and quantum spin states, and is a key protein in the human circadian rhythm apparatus. Birds may use electron spin mechanics to sense the earths magnetic field, and in some species early development is dependent on the presence of magnetic fields. This exciting new realm of biology is just beginning to be understood and may have profound implications on therapies to control the aging process.



Developing Smarter Robots for Cells, Tissues, and Surgery

Jean Hebert, Professor at Albert Einstein College of Medicine, proposed the challenge of improving upon AI driven robots for biology. Jean is working on a project to replace portions of brain tissue via cellular reprogramming and engineering. One difficult step of the process is the surgery involved in the steps to assemble the brain tissue in vivo. If we had robots that could perform these actions with the aid of artificial intelligence, it could make it easier to implement practical tissue replacement therapies.

The Aging Extracellular Matrix

Joe Betts-LaCroix, CEO of Retro Biosciences, presented a broad overview of the extracellular matrix (ECM). He is not an ECM expert but is extremely interested in the biology involved in this particular field. The ECM gets fragmented, glycated, and crosslinked with aging. These processes damage the ECM and make it fragile and rigid. In some tissues, homeostatic turnover regenerates ECM but in places that are far from regenerative cells the ECM does not get repaired. Senescence, inflammaging, advanced glycation endproducts, and circadian rhythm degradation are all tied to ECM health and as it decays these destructive processes proliferate. Studying the ECM is of vital importance to understanding aging.

Tracking Microbiome Shifts During Aging

Juanita Mathews, Staff scientist at Tufts University, is interested in the microbiome and its effect on the aging process. The microbiome refers to the collection of single-celled organisms that inhabit our gut, mouth, skin, blood, and other parts of the body. Dysbiosis describes a state where the microbes in your body are not beneficial to your metabolism. Gut dysbiosis causes a cascade of problems - infections, cancer, bowel disorders, autoimmune disorders, and neurological problems. Juanita challenges the field to map out and catalog the metabolome (metabolic map) of the microbiome with respect to aging. Having this map is the first step toward being able to actually use microbiome information obtained from commercial tests to improve health, rather than simply tell us novel facts about our eating habits.

Getting Cryonics to the Masses

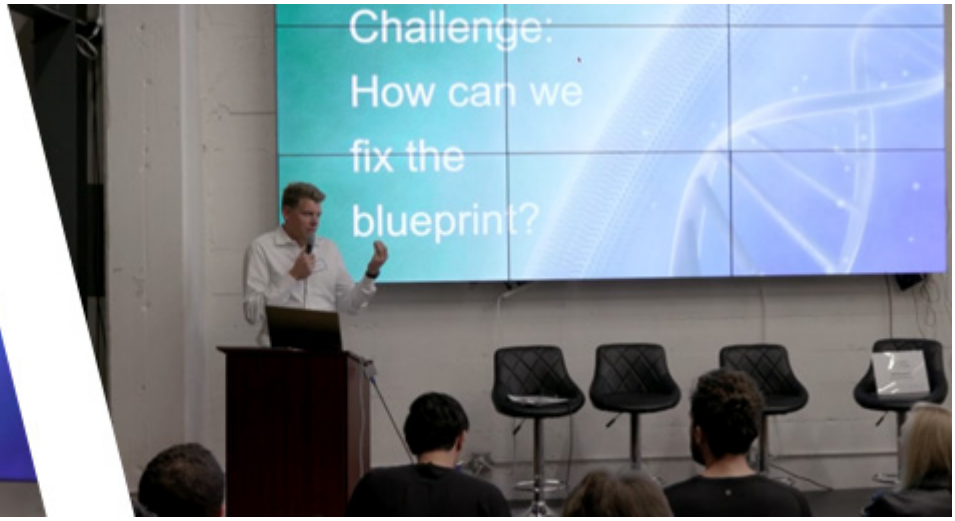
Kai Micah Mills, CEO of Cryopets, asks what it will take to get cryonics into hospitals. In his view, death is the burning of a library of experiences, and preserving that library should be our highest priority. Kai believes that from a mathematical perspective, cryonics is going to be necessary for everyone at some point, so it should be a standard of care available in every hospital. Making the leap from the current state of cryonics to mass adoption is a lengthy and difficult process. Kai suggests starting with animal cryonics and animal hospitals as a proving ground, to show how it would be carried out on a practical level, in order to make it more palatable for mass adoption.

Preserving Research Across Hype Cycles

Leon Peshkin, Harvard Scientist, cautions us about hype and false promises of longevity therapies and encourages scientists in the field to sober up. He has seen the same cycle repeat for many waves of research. A new concept is discovered, flooded with bandwagoning and poor research, and then abandoned. He wants to build a process that retains the useful knowledge from each cycle in a machine-learning capable manner, so that the valuable portions of research effort are preserved. We need to organize a crowdsourced effort to create and curate data on aging at scale.

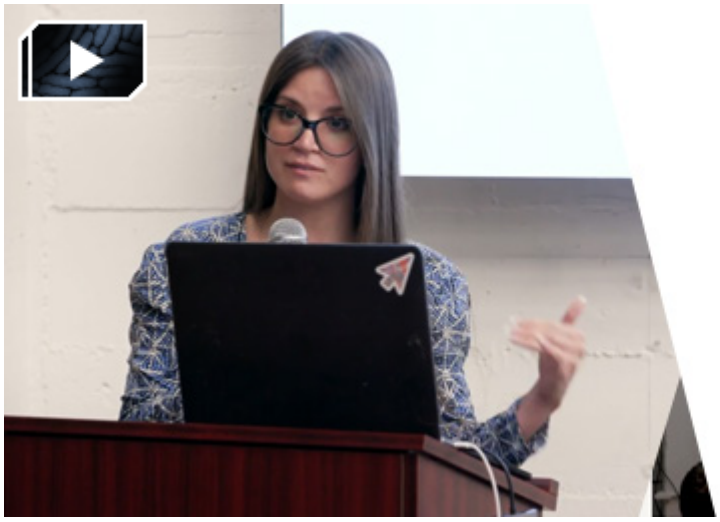
How Do We Repair the Irreparable?

Morten Scheibye-Knudsen, Associate Professor at the Center for Healthy Aging at University of Copenhagen, asks how can we repair the irreparable? DNA is the foundation of information storage in living organisms. As we age, we accumulate DNA damage. Premature aging diseases are often associated with defects in DNA repair. Furthermore, the effectiveness of DNA repair processes seem to correlate with rates of aging. While it's sometimes possible to attenuate the phenotypes of aging, the underlying damage - DNA damage - is not changed. How can we fix the blueprint? What can we do to slow or reverse damage at the level of the gene?



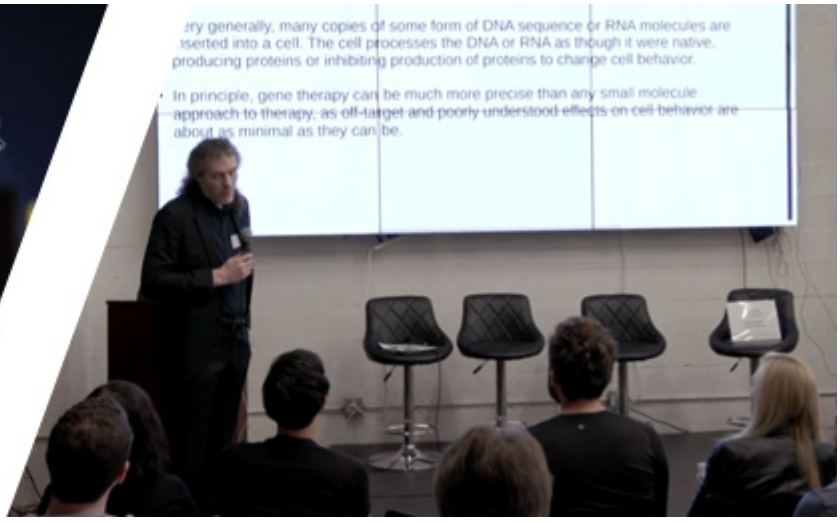
Multi Omics Clock Foundation

Nikolina Lauc, CEO of Glycanage, believes that we will need to focus on multiomics to improve aging clocks. Multiomics describes a data collection process in which multiple domains of diagnostics are collected simultaneously - such as the genome, glycome, proteome, etc. Glycanage stumbled across a correlation between glycosylation phenotypes and age, and they have begun to investigate how that ties into diet and exercise. They created an aging clock - a correlation between biomarkers and chronological age - using glycosylation data. As they investigated the relationships further, they realized they need to structure their data with other aging clocks to produce something that can lead to useful therapies. Nikolina is willing to contribute glycosylation data to such an effort.



The 80/20 "Just Works" Gene Therapy Platform

Reason, CEO of Repair Biotechnologies, brought an extended complaint about gene therapy to the stage. Gene therapy is the process of replacing or altering the genome within cells, and has the potential to solve all sorts of pathologies. It could also let us figure out the core mechanics of aging, but all the current methods of gene therapy are too flimsy to use properly. We need a gene therapy that works 8-out-of-10 times, something robust and reliable. Critical features of such a therapy would include tissue or cell specific targeting, access to the nucleus or mitochondria, low immunogenicity, and tunable duration of expression.

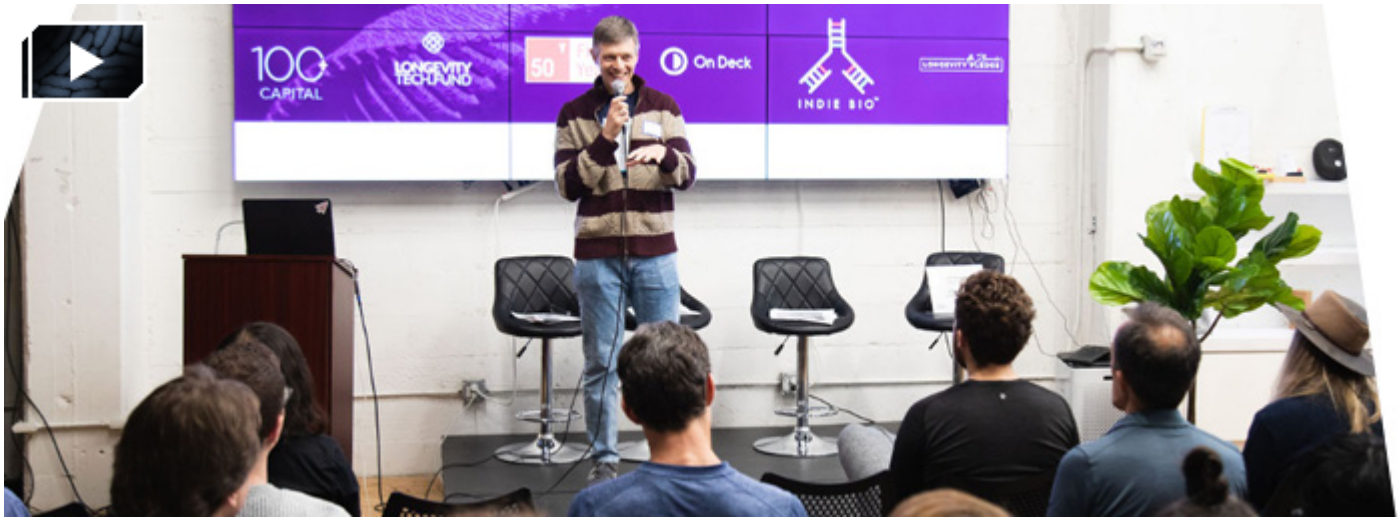


Defining the Nature of Aging and Rejuvenation

Vadim Gladyshev, Professor of Medicine at Harvard Medical School, challenged the room to define what exactly is aging and rejuvenation. Reproductive potential and mortality curves vary dramatically from species to species, so what are we referring to when we talk about aging? Is aging increased mortality rate, decreased fitness, development, or damage accumulation? Our answers to these questions define how we communicate the science of aging to ourselves and others. Forming some kind of consensus on this topic could help when seeking funding or support from the greater scientific community.

Figuring out Genes Responsible for Time to Sexual Maturity

Yuri Deigin, Co-Founder of YouthBio Therapeutics, finds it interesting that we still don't know the genetic causes of different maturation rates between species. If we understand the genetic mechanisms for development, it will greatly inform our understanding of aging processes. There is a direct coupling between sexual maturity and total lifespan, which seems extremely relevant to aging biology. The field of aging hasn't spent enough effort investigating developmental program stages between species in regard to aging.



Project Presentations

Extracellular Matrix (Winner)

Joe Betts-LaCroix, CEO of Retro.bio
Karl Pfleger, AgingBiotech.info
Alexandra Stolzing, Professor at University of Loughborough
Brad English, University of Bonn

What is the most undervalued area for longevity progress we should pursue?

ECM Aging is vastly understudied and incredibly important. It is upstream of 6 hallmarks of aging, involved in major causes of death like cardiovascular disease and cancer, and plays a large part in looking and feeling old. There are no appropriate tools to measure and intervene.

Where are we today? Where would we like to be?

Short term - build connections between existing ECM and aging biologists. Medium term - build tools and prioritization. Long term - create interventions for ECM rejuvenation.

What public and private actions have the biggest impact on those goals?

We should fund ECM x Aging experts, create progress on an aging ECM platform, and build interventions on this platform to demonstrate rejuvenation.

What people, funding, resources, experiments would be required to test this hypothesis?

Create a SENS ECM workshop ($10k), a Biotech Connection Bay Area research project ($10k), propose an Impetus grant category for ECM, and improve the ECM node on the Longevity Tech Tree

Cryonics

Borys Wrobel, Professor at Adam Mickiewicz University
Emil Kendziorra, CEO of Tomorrow Biostasis
Kai Micah Mills, CEO of Cryopets
Christine Peterson, Foresight Institute

What is the most undervalued area for longevity progress we should pursue?

Cryonics! It is perceived as plan B in longevity but needs to be plan A, because of immediate existential risks like getting hit by a bus and the unlikelihood of radical life extension coming to fruition in the near term.

Where are we today? Where would we like to be?

Cryonics is extremely disruptive and sound in principle, but suffers from lack of standards and lack of concensus on quality. It has connotations with false promises and amateurism. In the next 5 years, there should be quality metrics for human and animal cryopreservation. In 5-10 years, research and development on warming physics and revival of organs should be possible. 10-50 years may see revival or emulation of a small mammal, and in 50+ years it may be possible to revive or emulate a human.

What public and private actions have the biggest impact on those goals?

A cryopreservation fund should be set up - $50M for 5 years. A research ecosystem in North America and Europe could address social science, basic science, development, legal, and networking for cryonics research.

What people, funding, resources, experiments would be required to test this hypothesis?

For research - brain banking, slices for drug testing, organoids and organs. Also addressing PMI, pre/post ischemia, and perfusion impairments will be necessary. Regarding social structures - moving the overton window, lobbying, and networking key players together should produce significant results.

Quantum Biology

Clarice Aiello, Professor at UCLA
Alex K. Chen,
Ada Nguyen, OnDeck Longevity Biotech

What is the most undervalued area for longevity progress we should pursue?

Quantum biology is underrated because there is very little interaction between biologists and physicists.

Where are we today? Where would we like to be?

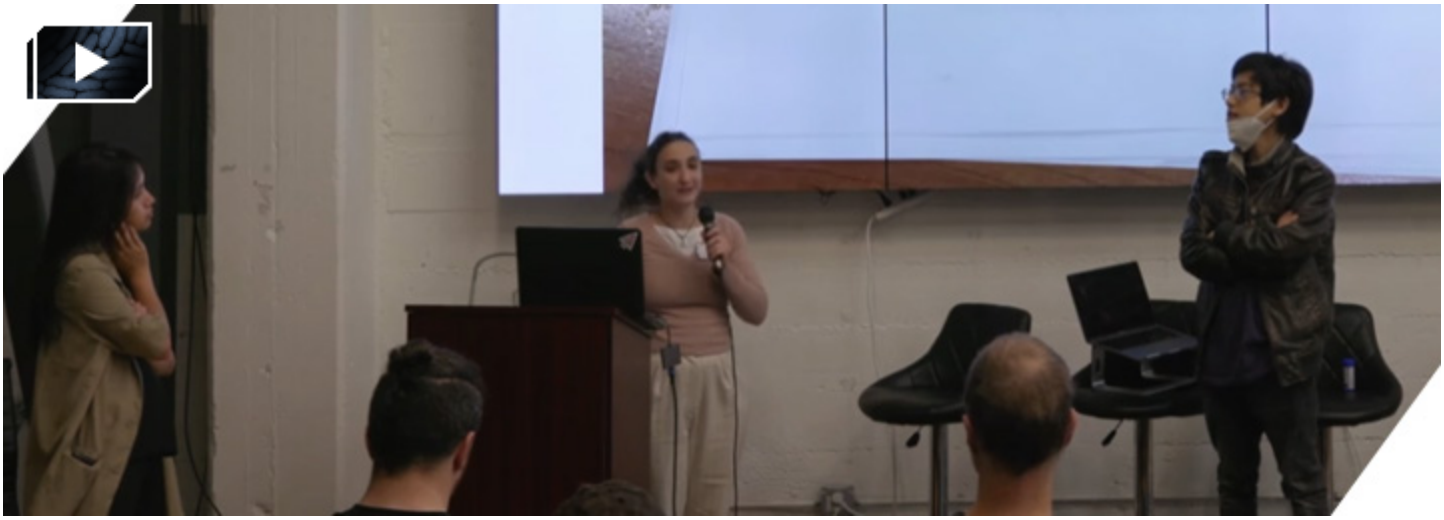
In the short term, more experimentation on physiological quantum effects need to be carried out. In the medium term there should be a pipeline to train more people to be proficient in quantum biology. The long term goal is to turn quantum biology into a large and legitimate field backed by public support.

What public and private actions have the biggest impact on those goals?

Generating attention around quantum biology via youtube, podcasts, talk shows, or billionaire involvement.

What people, funding, resources, experiments would be required to test this hypothesis?

The most pressing need right now is to get more people directly involved in quantum biology at the experimental level, being trained with the necessary knowledge. Funding for UCLA's quantum biology program would make it possible to recruit the necessary first wave of people.



Scaleable Platform for Radically Open Pharmaco-biology

Leon Peshkin, Harvard Scientist
Kyle Brewer, Etta Biotechnology
Iosif Gershteyn, Immuvia
Stephen Price, Kanaria Life Sciences

What is the most undervalued area for longevity progress we should pursue?

Data as a satellite product.

Where are we today? Where would we like to be?

Today we have data as a big bad entity that must be handled by specialists. We must first acknowledge the problem and be honest about how things really are. Then we can create data quality controls and standardization to make it easier to deal with large volumes of data.

What public and private actions have the biggest impact on those goals?

Government and NIST engaging with data quality improvement, and pilot projects creating low-cost federated longevity testing platforms.

What people, funding, resources, experiments would be required to test this hypothesis?

It may be possible to generate funding via the creation of a data token reward system.

Multi Omics Clock Foundation

Jason Mercurio, Ageless
Christin Glorioso, CEO at NeuroAge
Nikolina Lauc, CEO at GlycanAge

What is the most undervalued area for longevity progress we should pursue?

The relationships between biomarkers are incredibly undervalued. Mapping biomarkers to disease pathways, having quantifiable endpoints for therapeutic studies, and increasing cross collaboration would improve the success probabilities for longevity drugs.

Where are we today? Where would we like to be?

Today there are lots of small trials, not necessarily well designed, using single biomarkers. Changing biomarkers have not been tied to patient outcomes. In the long term we would like to see reversing aging clocks leading to measurable improvements in health.

What public and private actions have the biggest impact on those goals?

Collecting blood and banking it in intervention studies, measuring as many clocks as possible, standardization, and forming a biobanking are all high impact steps.

What people, funding, resources, experiments would be required to test this hypothesis?

Creating a competition to reverse measurable biological age using lifestyle, health, and cognitive biomarkers. Supporting organizations such as OpenCures, VitaDAO, and CureDAO to generate biobanking, funding, and data sharing respectively. We can generate open collaboration via a Clock Summit to create commitments and standardization within the field.

80/20 Gene Therapy

Reason, CEO of Repair Biotechnologies
Luis Rios, Vine Ventures
Jean Hebert, Professor at Albert Einstein College of Medicine
Nathan Cheng, OnDeck Longevity Biotech

What is the most undervalued area for longevity progress we should pursue? Where are we today? Where would we like to be?

Only a small fraction of potential gene therapies are actually viable. This blocks many very good approaches to therapy, but it is an invisible cost. Few people have the vision to see what might be, rather than what is. We want a gene therapy platform enabling 80% of important arbitrary combinations of specific tissue expression, mid-term duration of expression, regulation acceptance, and repeat dosing.

What public and private actions have the biggest impact on those goals? What people, funding, resources, experiments would be required to test this hypothesis?

Option 1: Make AAV work - progress is underway, but too slowly and siloed. It may cost $100M to accelerate this process.

Option 2: Local delivery - make the magic injection robot that enables 0% mortality for deep organ injection. Is Academia up to the challenge of making a robot that performs deep organ injections?

Option 3: Make LNP+DNA/RNA work - targeting research and companies to work on developing nuclear targeting of plasmids, tissue specific control of RNA expression, promotor combinations, and Lipid Nanoparticle (LNP) immunogenicity reduction would be a roughly $20M challenge.

Option 4: Accelerate research - drive the finalization of a better option at the fundamental research level, e.g. lipid nanocrystals, nanodiamonds, etc. This is probably a $100M challenge.

The Prospera FDA

Mike Sinn, CureDAO/Quantimodo
Mac Davis, Minicircle
Anastasia Egorova, Open Longevity

What is the most undervalued area for longevity progress we should pursue?

Altering regulation around drug approval to accelerate drug development in the longevity space.

Where are we today? Where would we like to be?

Rapid drug development led to a massive increase in life expectancy in the early 1900's. After the Thalidomide disaster, the FDA clamped down on drug development and reduced new treatments by 70%. The average cost per drug has skyrocketed in the past decades.

What public and private actions have the biggest impact on those goals?

Building an alternative structure to the FDA

What people, funding, resources, experiments would be required to test this hypothesis?

An open source framework, willing participants, and most importantly an economically free zone outside of FDA jurisdiction are required to test this concept.

Reversal of Immunosenescence

Robert Cargill, Glionics Inc
Ashton Trotman-Grant, Fifty Years Capital
Alex Trapp, Retro.bio

What is the most undervalued area for longevity progress we should pursue?

Reversal of immunosenescence could be accomplished through adoptive T-cell transfer from a bank of universal induced immature T-cells with ex-vivo maturation and selection within an autologous iPSC-derived ex vivo thymus.

Where are we today? Where would we like to be?

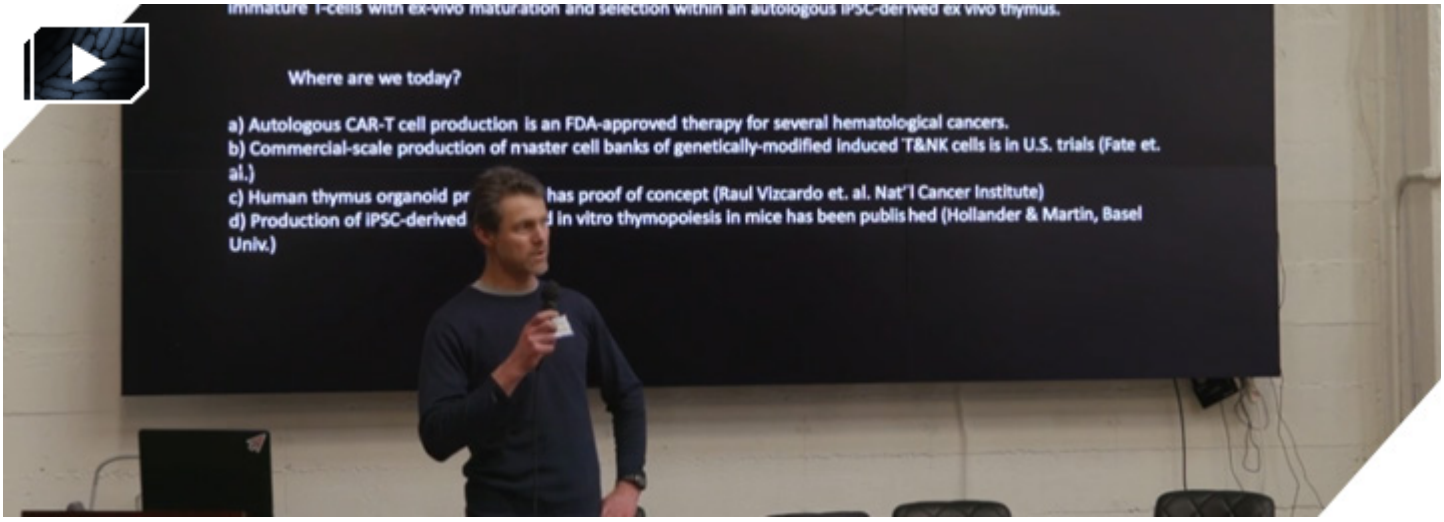
Autologous CAR-T cell production is an FDA-approved therapy for several hematological cancers. Commercial scale production of master cell banks of genetically-modified induced T&NK cells is in US trials. Human thymus organoid production has proof of concept. Production of iPSC-derived thymi and in-vitro thymopoiesis in mice has been published.

What public and private actions have the biggest impact on those goals?

An academic or industry group needs to assemble the proper iPSC-derived universal donor cell bank. There should be a GMP iT differentiation process from that bank, as well as GMP autologous iPSC-derived thymus organoid generation. There should also be a GMP in-vitro thymopoiesis process in preparation for an IND filing.

What people, funding, resources, experiments would be required to test this hypothesis?

We need personnel with universal donor genetic engineering expertise, iPSC-derived cell bank manufacturing expertise, and personnel with experience growing thymus organoids and using them for in-vitro thymopoiesis. These processes need to be translated to clinical-scale GMP processes.



Defining Aging and Rejuvenation

Vadim Gladyshev, Professor at Harvard
Nikola Markov, Bioinformatics at Buck Institute
Weronika Prusisz, International Institute of Longevity
Aaron King, Foresight Institute
Yuri Deigin, YouthBio
Petr Sramek, Longevity Tech Fund
Kamen Shoylev, New Balkans Law Office
Jyothi Devakumar, Longevity Tech Fund

What is the most undervalued area for longevity progress we should pursue?
The lack of a clear definition of aging presents a major obstacle for collaboration and advances in the field. We need concensus on aging, rejuvenation, and biological age. Without an agreement on what we study, it's hard to form a unified force and convince the public.

Where are we today? Where would we like to be?
There are many definitions, with no concensus on what aging is and what causes it. We can't advocate for a moonshot project because there are no common clearly-defined goals. In the short term, we should organize a conference to attain concensus. Later we can build a unified force and more easily pursue moonshot projects.

What public and private actions have the biggest impact on those goals?
Creating a focused conference on defining aging, creating questionnaires and aggregating them into an online repository, and stimulating podcasts/debates on the nature of aging.

What people, funding, resources, experiments would be required to test this hypothesis?
Impetus grants and Foresight Institute could host a conference ($20k). Having a website, promotional videos, and explanatory resources are a necessary component. Having real debates and panel discussions where people are free to voice disagreements seems important as well.