

Thank you for joining us – the
webinar will start shortly

Reasons to be cheerful:

Exploring potential big-ticket drivers of future longevity improvements

October 21st, 2021

11am ET / 4pm GMT



[linkedin.com/company/club-vita](https://www.linkedin.com/company/club-vita)



[@ClubVita](https://twitter.com/ClubVita)

Reasons to be cheerful:

Exploring potential big-ticket drivers of future longevity improvements



Chair:

Douglas Anderson
Club Vita



Panelists:

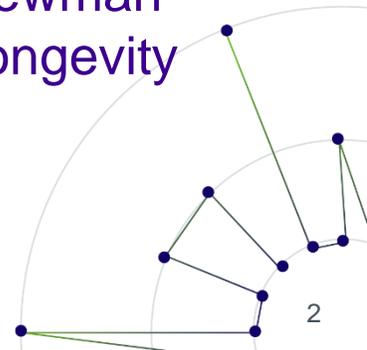
Madeleine Braun
The Jackson Laboratory



Gemma Balmer
Cancer Research UK

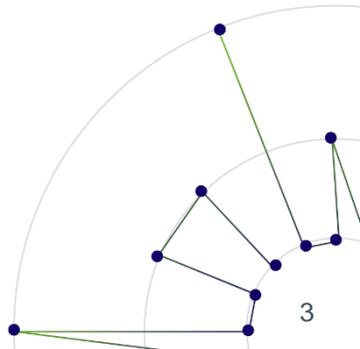


Phil Newman
First Longevity



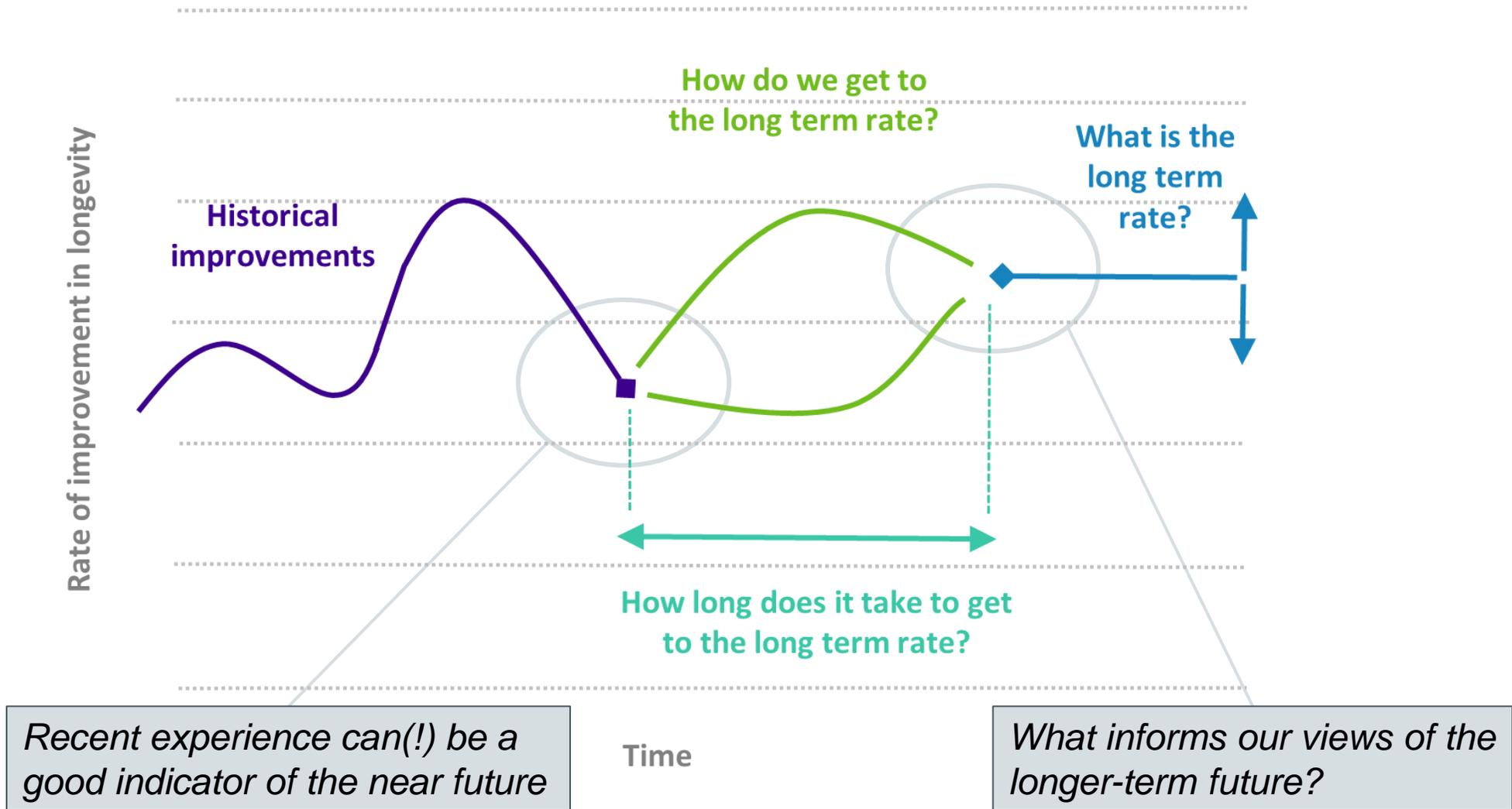
Today's gameplan

1. Why do actuaries find predicting long-term trends so tricky?
2. What's going on in the innovation pipeline?
– *our three experts share their insights*
3. Your questions

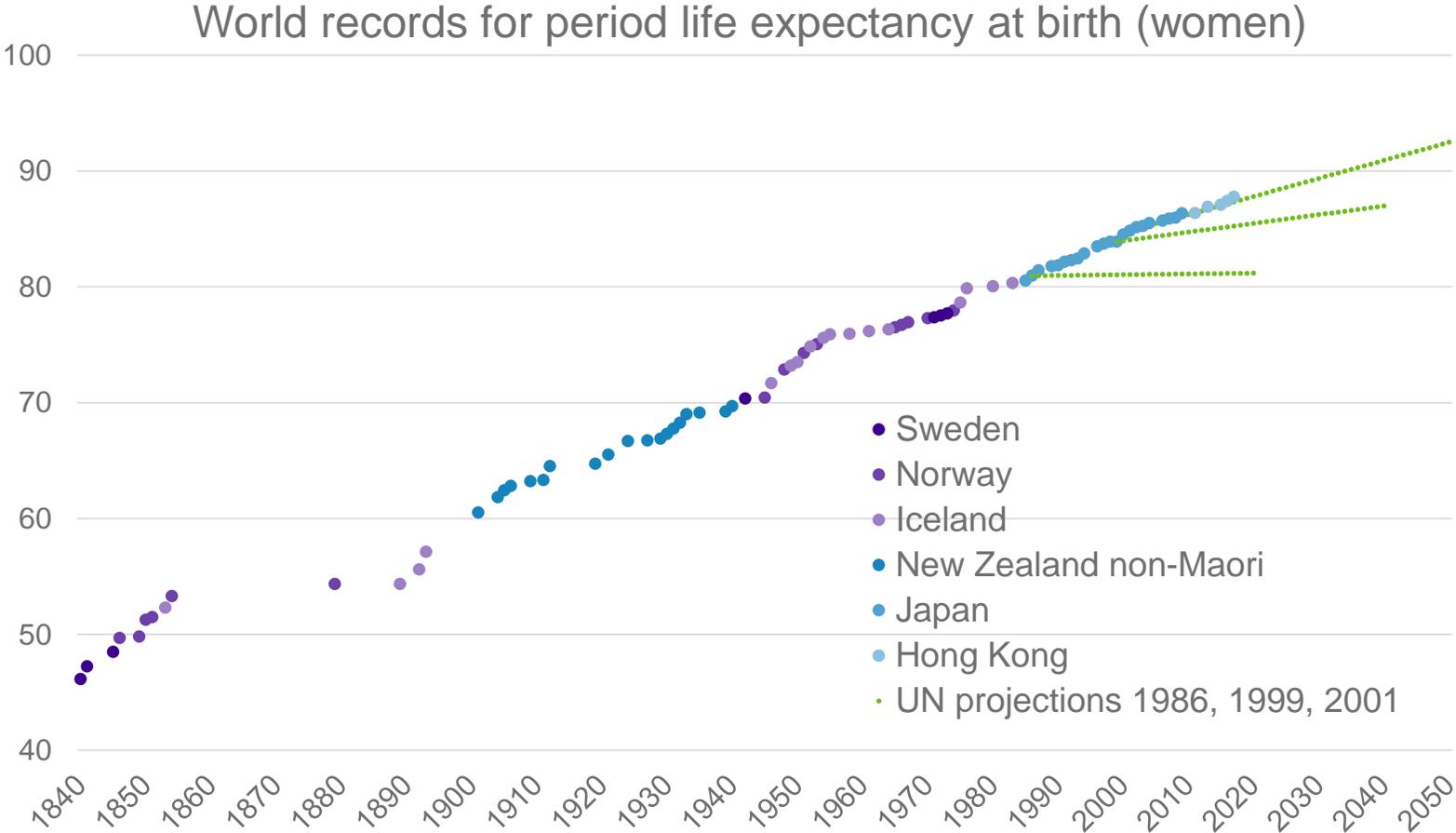


Why do actuaries find predicting
long-term trends so tricky?
Erik Pickett

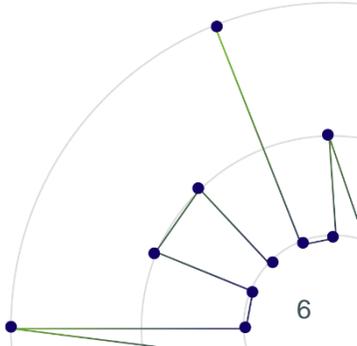
Illustrative mortality future improvement rate model



Life expectancy progression vs projections

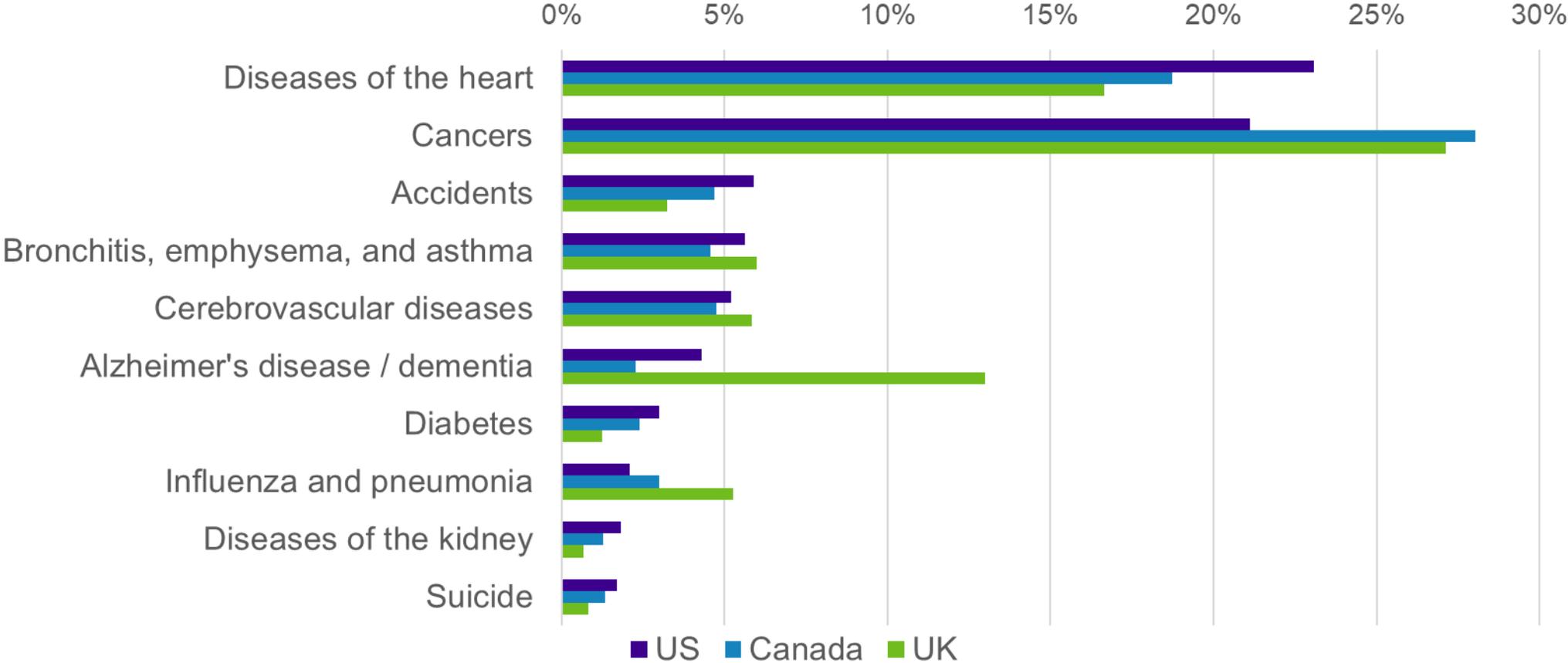


Source: Club Vita redrawing/update of the classic chart from [Broken Limits to Life Expectancy](#), Vaupel & Oeppen
Life expectancy figures: Human Mortality Database; UN projections taken from original paper

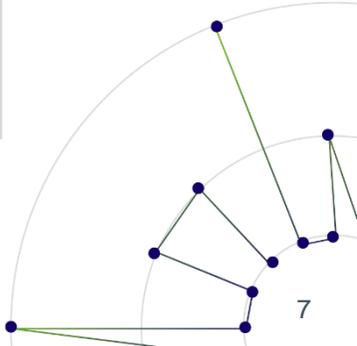


Leading causes of death

Leading causes of death UK, US and Canada 2018



Data sources: ONS, England & Wales; NRS, Scotland; NISRA, Northern Ireland; CDC, US; Statistics Canada, Canada



Cognitive biases

The availability heuristic

the over-reliance on examples that immediately come to mind when forming an opinion



Blog: <https://www.clubvita.us/news-and-insights/forefront-of-your-mind-forefront-of-your-opinion>

The myside / confirmation bias

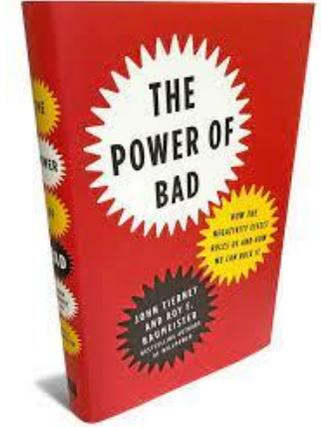
the tendency to search more strongly for evidence that supports beliefs we already hold or discredits opposing views

"... but we've always done it that way!"

Blog: <https://www.clubvita.us/news-and-insights/the-myside-bias-why-is-it-so-hard-to-change-our-minds>

The negativity effect

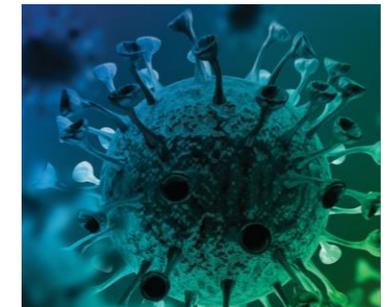
a propensity for stronger reactions to negative events than positive events



Blog: <https://www.clubvita.us/news-and-insights/the-negativity-effect-how-many-wrongs-make-a-right>

The recency bias

placing disproportionate importance on recent events



What's going on
in the innovation pipeline?

21 Oct 2021

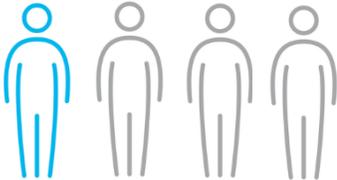
Club Vita Panel Discussion
Cancer Grand Challenges

Gemma Balmer-Kemp

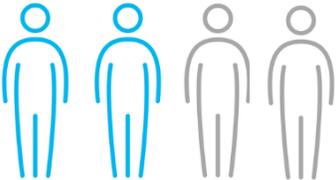
Head of Research, Cancer Grand
Challenges

OUR VISION: TO BRING FORWARD THE DAY WHEN ALL CANCERS ARE CURED

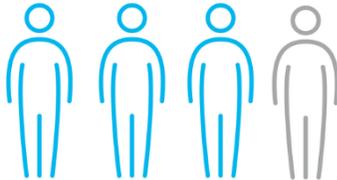
Our ambition is to see 3 in 4 people surviving cancer by 2034



1970



2010



IN THE NEXT
20 YEARS

Over the last 40 years, cancer survival rates in the UK have doubled – in the 1970s just a quarter of people survived, today that figure is half

We want to accelerate progress and see three quarters of patients surviving the disease within the next 20 years



Together we will beat cancer

WE ARE FOCUSING OUR RESEARCH INVESTMENTS TO ACHIEVE THIS AMBITION



Early detection research



Basic understanding of cancer



Therapeutic innovation



Cancers of substantial unmet need



Cancer prevention



Precision medicine

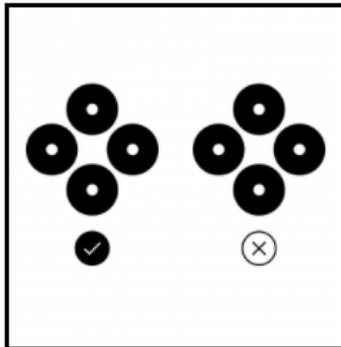


Together we will beat cancer

We will solve cancer's toughest challenges by daring the very best to come together, think differently and propel each other to perform right at the edge of impossible

- Cancer Grand Challenges is a new approach to global cancer research landscape. We believe our approach is unique to anything else happening in cancer research currently.
- Cancer Grand Challenges:
 - Focuses on solving the ***tough, stubborn problems*** that have been intractable to date. Our approach is to support transformative research;
 - Harnesses ***the power of scientific collaboration***. We support multidisciplinary teams that can make advances that individuals cannot make on their own;
 - Is ***global and inclusive***. Our approach is to go beyond institutional and national boundaries to engage and unite the world's best researchers, bringing an urgency to solving tough challenges.

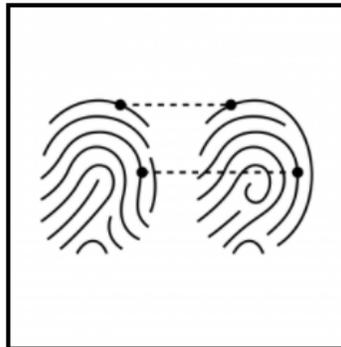
**Harnessing
the power of
discovery to
tackle
cancer's most
complex
challenges**



FOCUS:
Lethal versus non-lethal cancers

ACTIVE TEAMS:
PRECISION

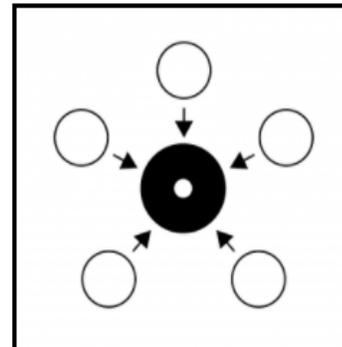
[View challenge](#)



FOCUS:
Unusual mutation patterns

ACTIVE TEAMS:
MUTOGRAPHS

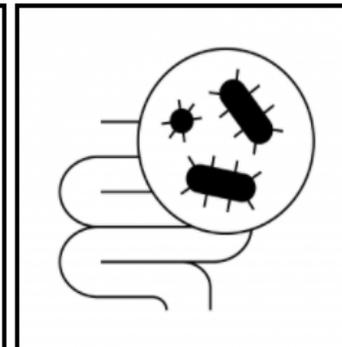
[View challenge](#)



FOCUS:
Cancer causes

ACTIVE TEAMS:
STORMING CANCER

[View challenge](#)



FOCUS:
Microbiota

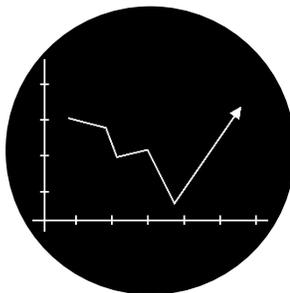
ACTIVE TEAMS:
OPTIMISTICCC

[View challenge](#)

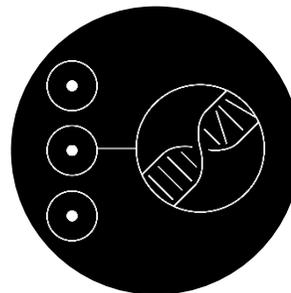
CHALLENGES

Embarking upon a new era of discovery

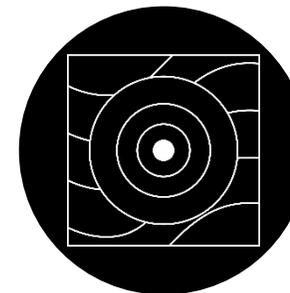
By daring the very best to come together and think differently, we aim to make the radical progress against cancer the world urgently needs.



Cachexia
Understand and reverse cachexia and declining performance status in cancer patients



Normal phenotypes
Understand how cells and tissues maintain 'normal' phenotypes whilst harbouring oncogenic mutations and how they transition to become a tumour



Inflammation
Determine how inflammation causes cancer

Cancer
Grand
Challenges:
driving
progress
through
global
collaboration

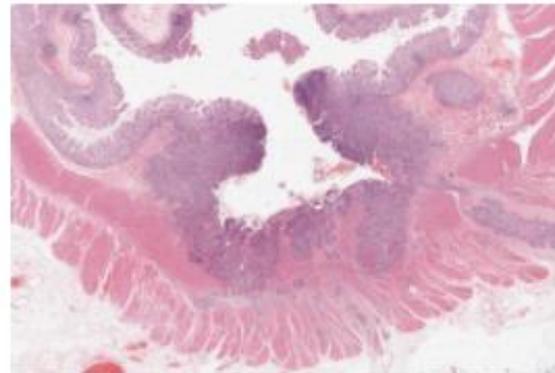
New findings, old ideas: reviving a decades-old view on the causes of cancer

Surprising discoveries from the Mutographs team challenge the classical view that all carcinogens directly cause mutations and suggest that non-mutagenic agents play a greater role in tumour promotion than originally thought.



News

Could the size of fat cells around DCIS breast lesions predict risk of future invasive cancer?

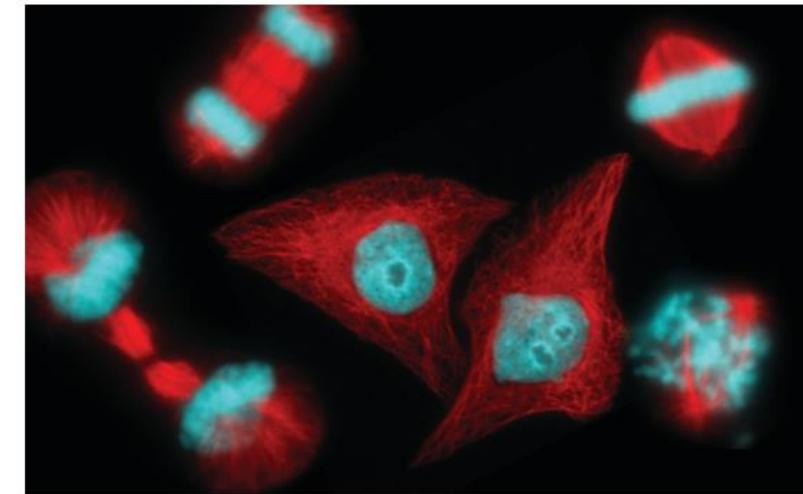


News

The microbiome: a biomarker for colorectal cancer?

News

New thinking on the process of ageing



Members of the Mutographs team challenge the current theory of ageing, revealing that healthy cells can tolerate many more mutations than previously assumed. What causes us to age? A popular current model of ageing – the somatic...

[Read the full article](#)

Thank you!

More information

Check out our website:
cancergrandchallenges.org

Subscribe to our newsletter (via website
or emailing us)

Contact us:

- info@cancergrandchallenges.org

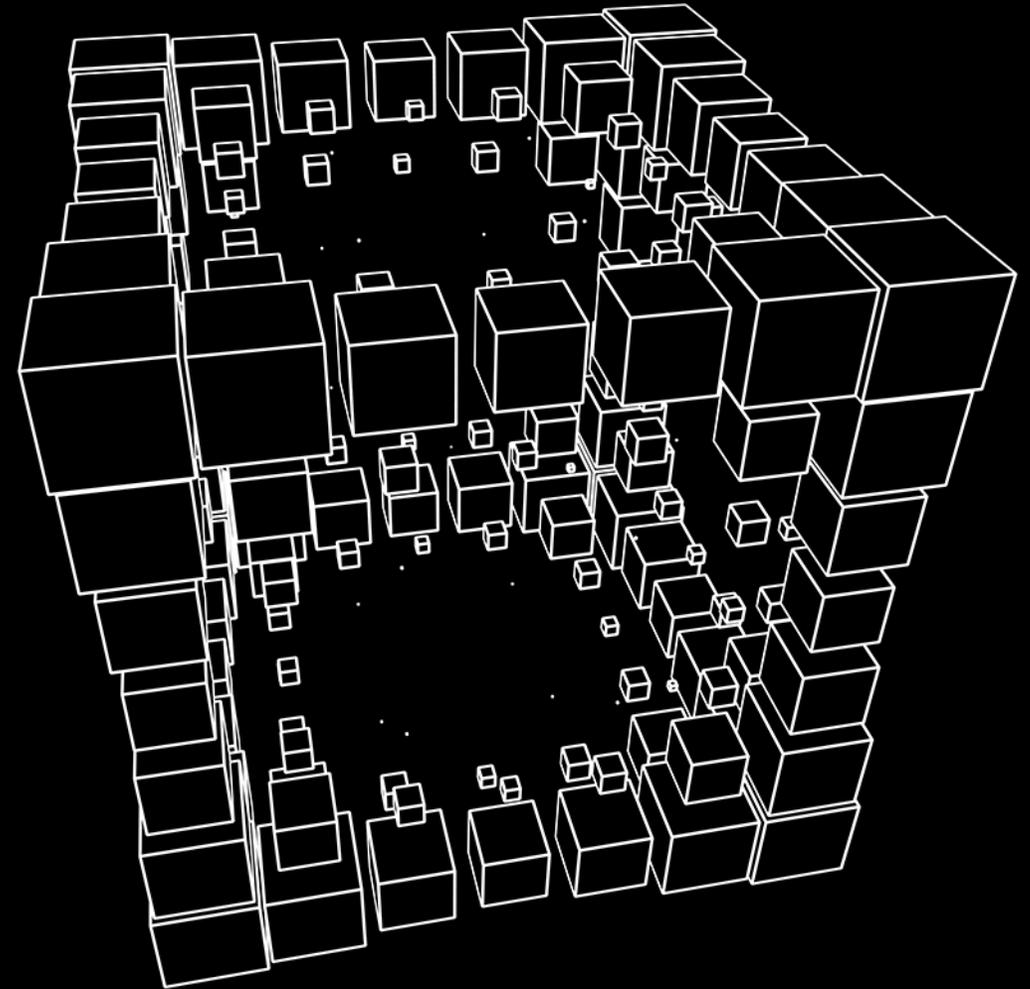
Follow us on social media:



@CancerGrand



Cancer Grand Challenges





**The Jackson
Laboratory**

The Jackson Laboratory, a nonprofit biomedical research institution, discovers precise genomic solutions for disease and empowers the global biomedical community in the shared quest to improve human health.

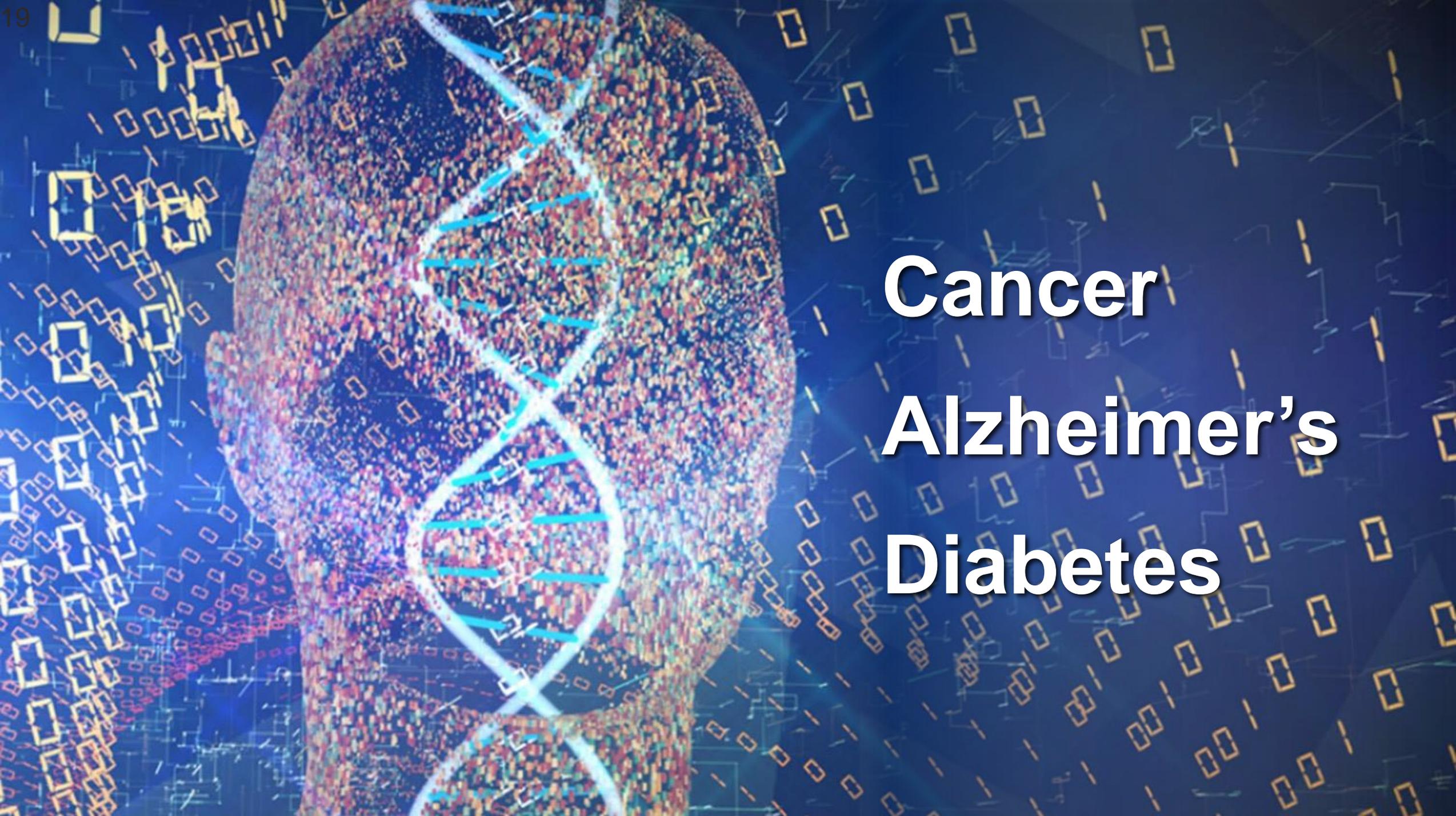


2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020

Milestone 1 2001

The Human Genome Project



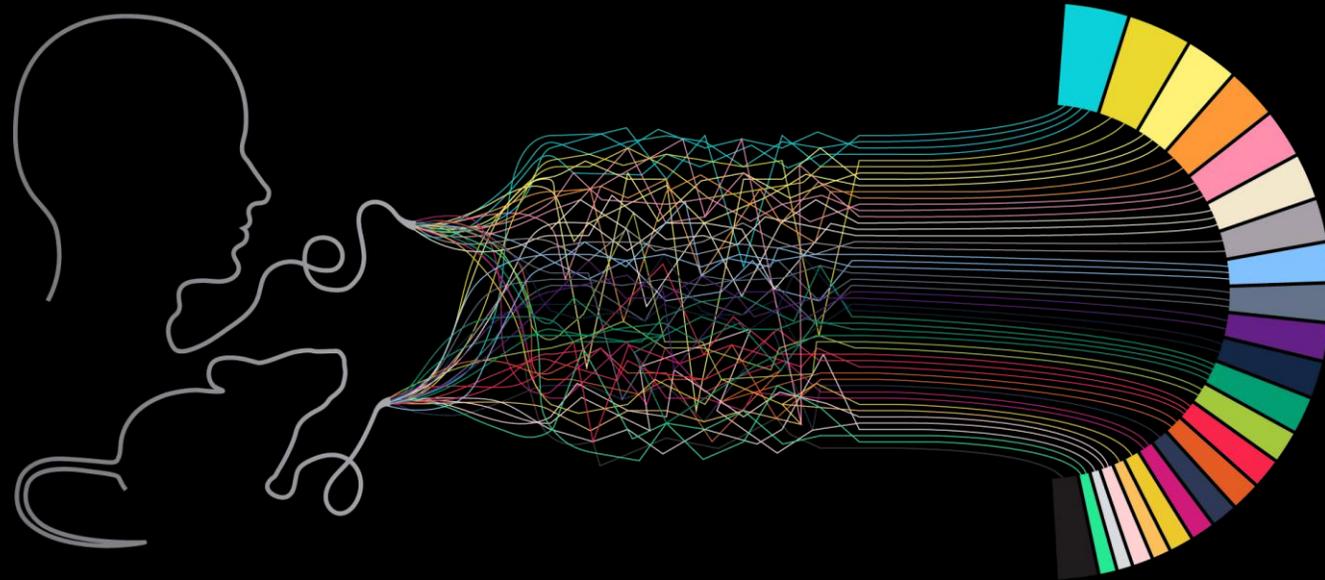


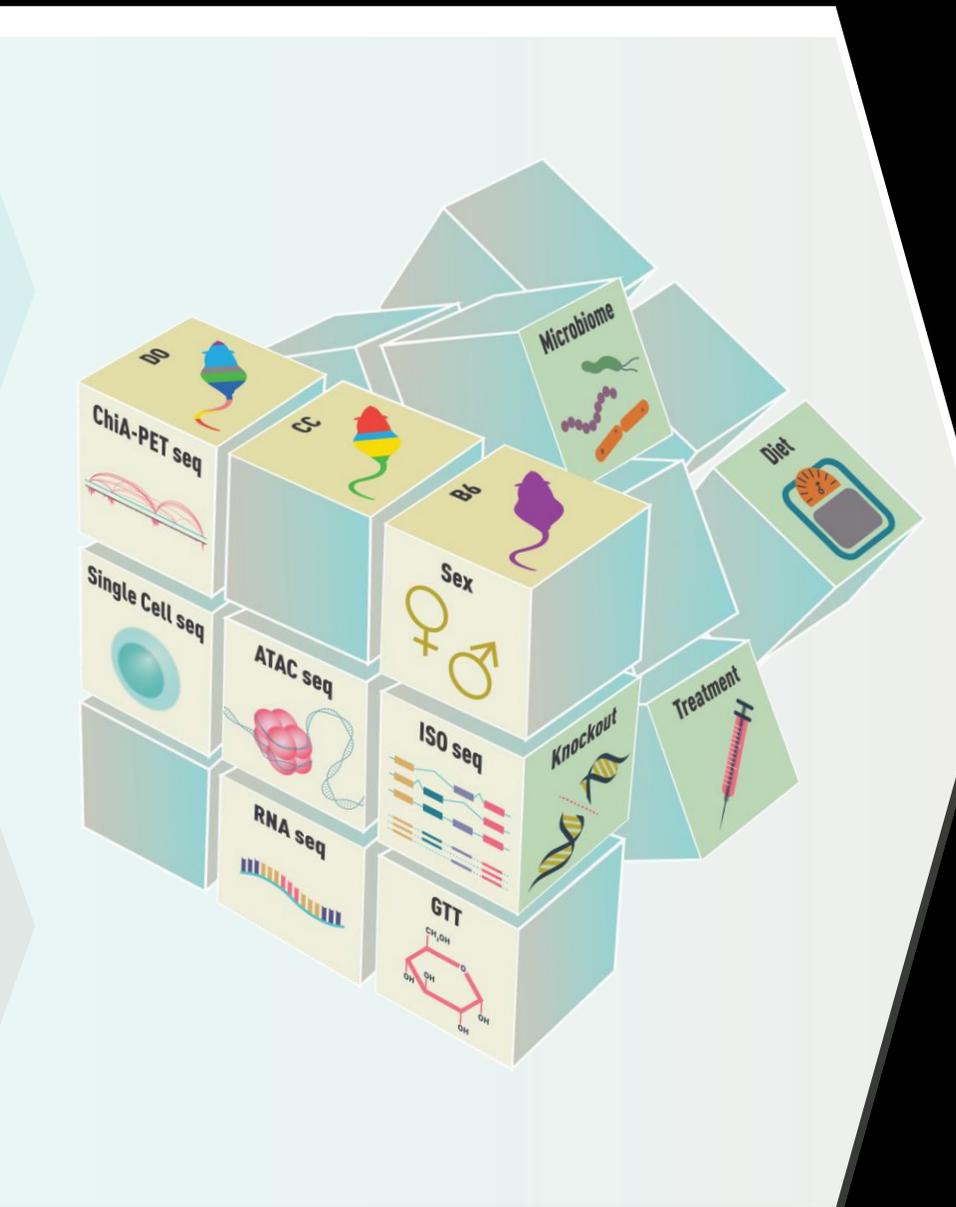
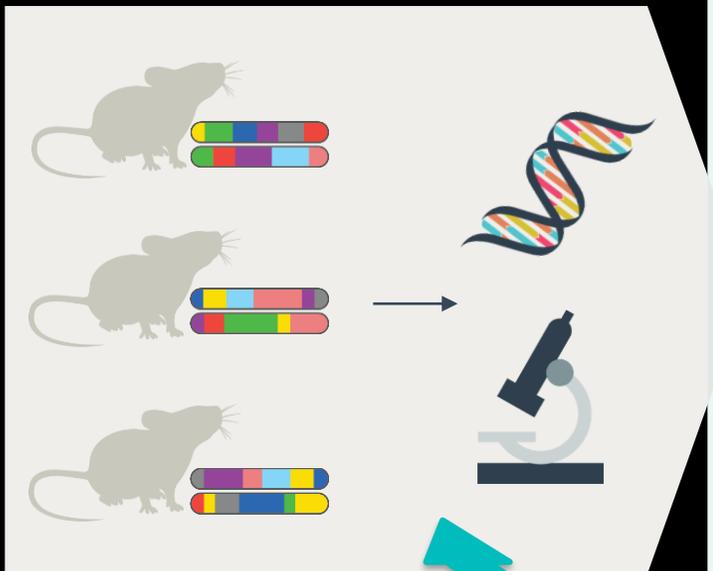
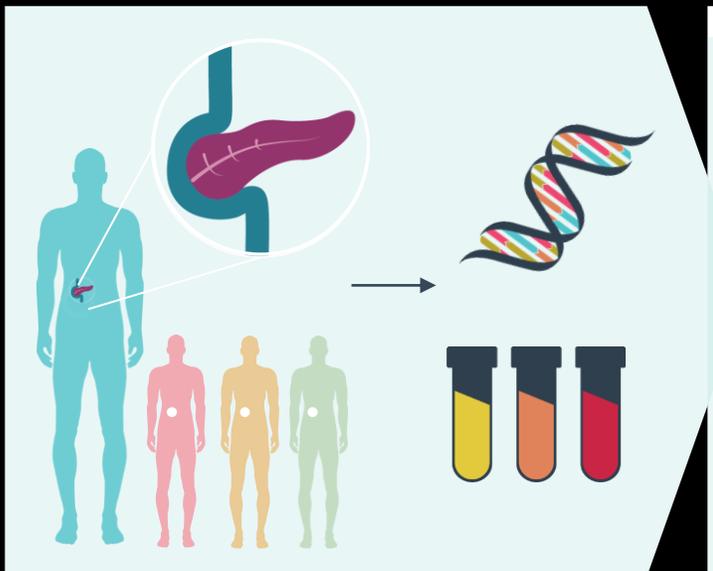
Cancer
Alzheimer's
Diabetes

Capture and understand the genetic complexity
of any disease

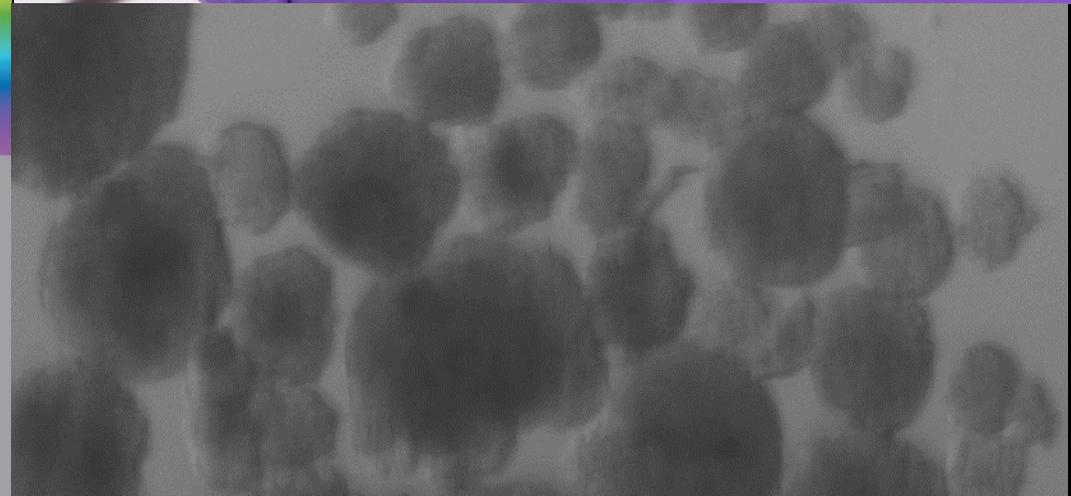
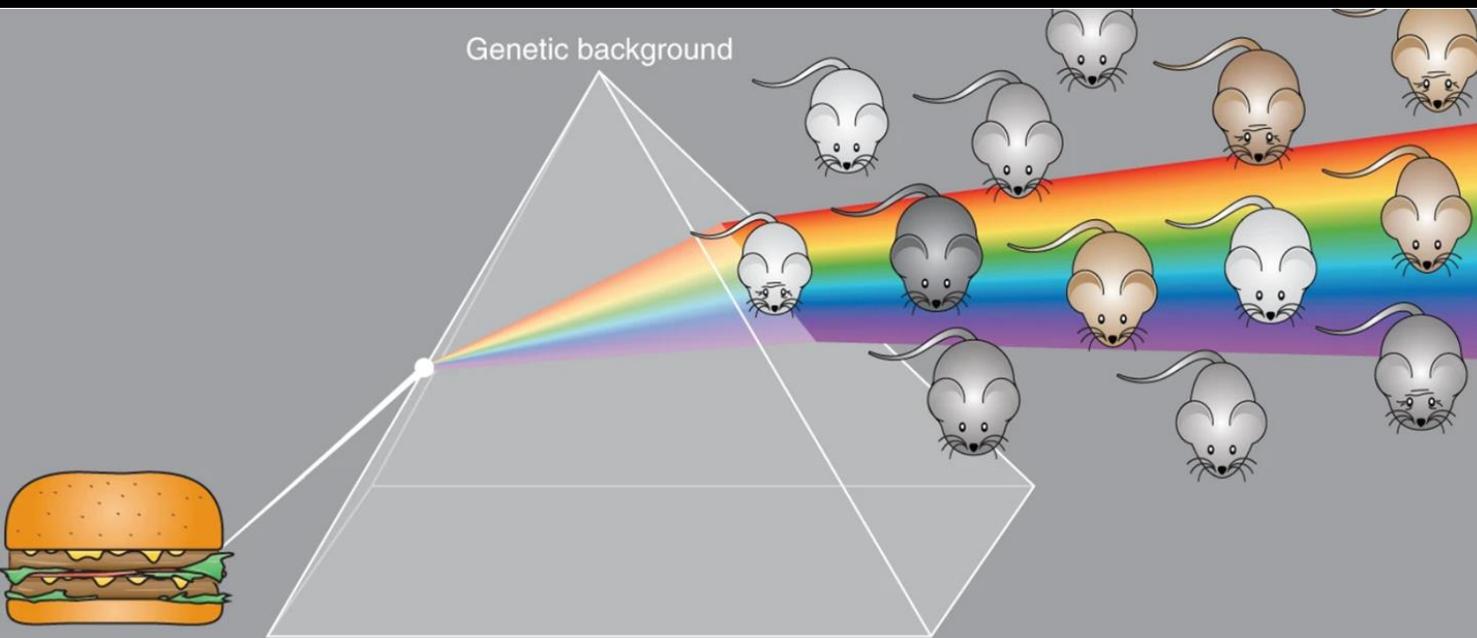
to predict its outcomes, identify unique
vulnerabilities, and craft new cures.

Predictive Biology

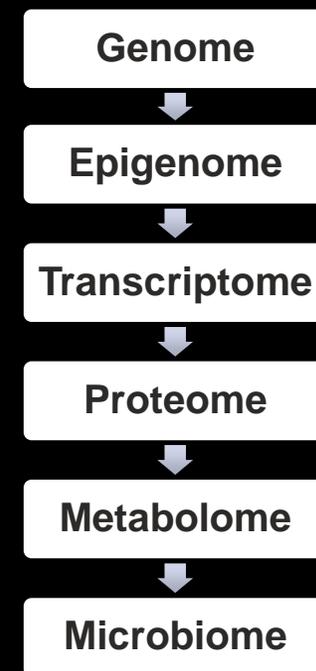
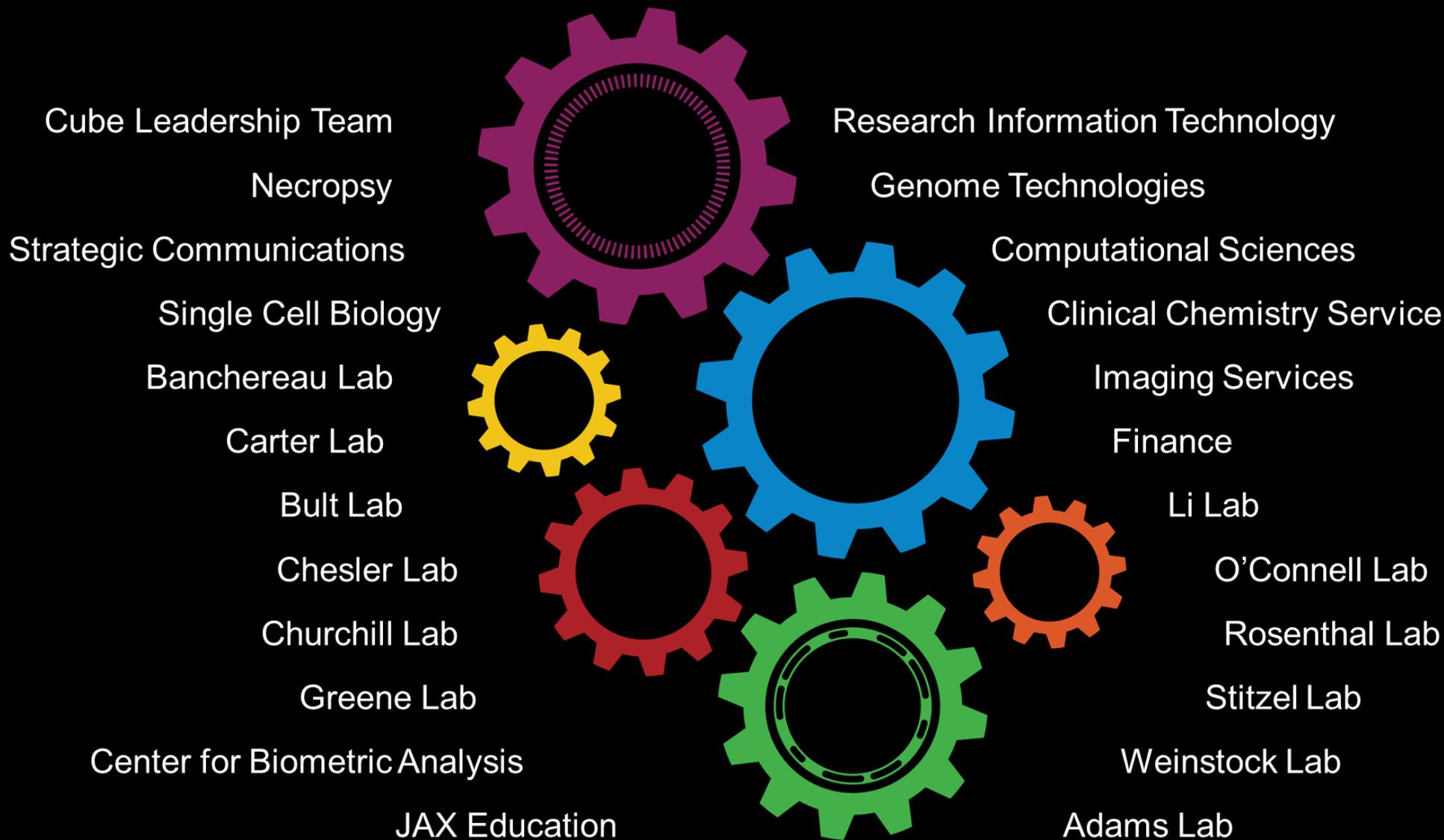




Genetically diverse
populations
Ideal, tractable models
Accelerated lifespan



175+ JAX People + 12 Labs



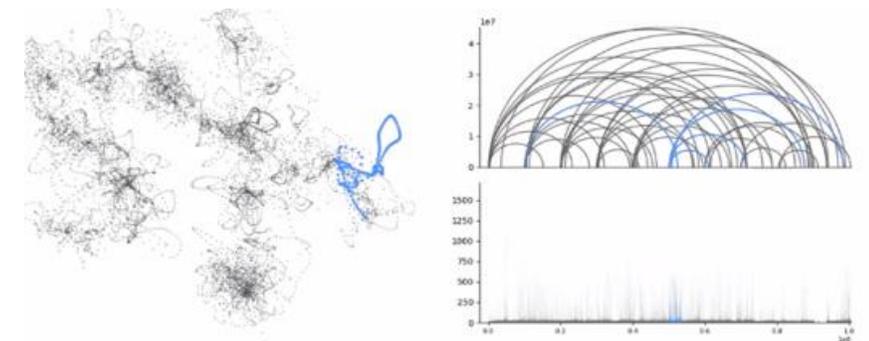
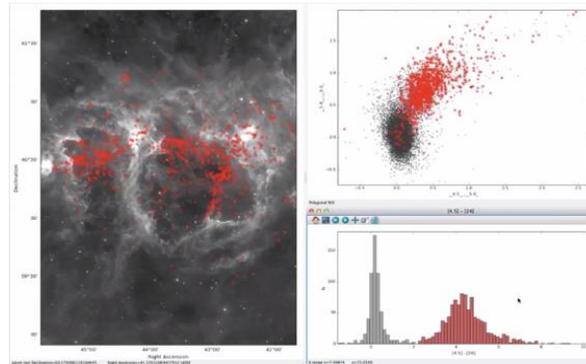
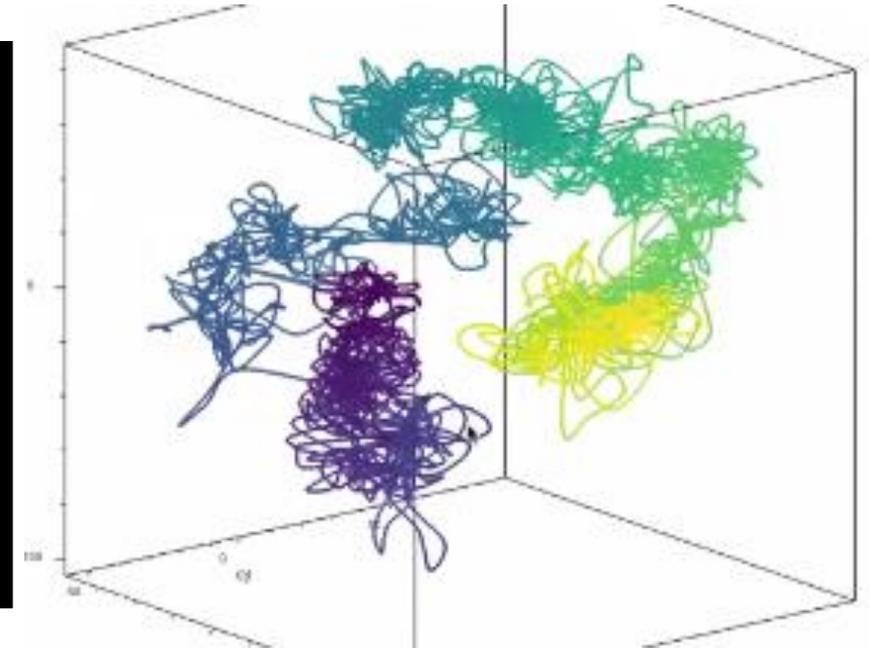
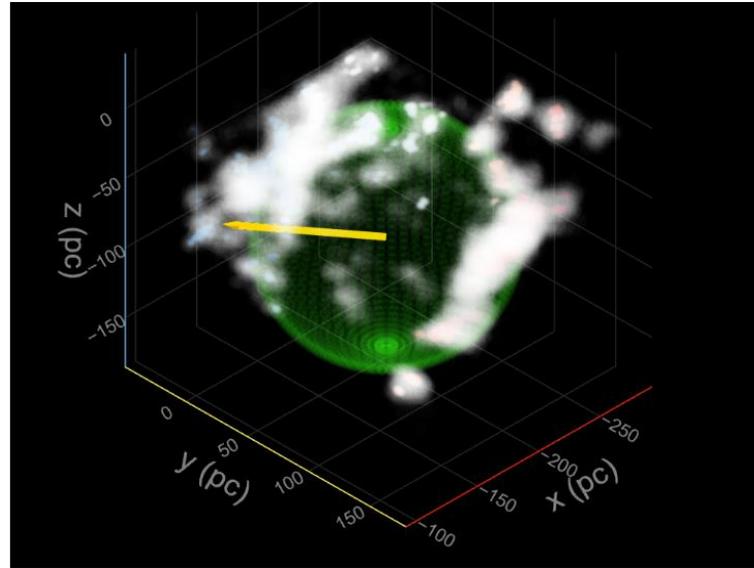
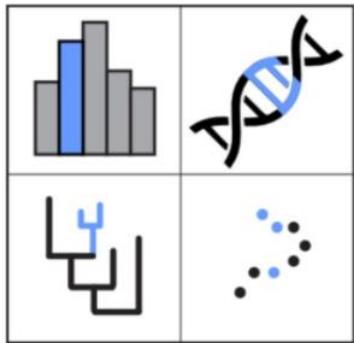


Astrophysics + Genomics

JAX partnership with glue solutions

Dr. Alyssa Goodman
Center for Astrophysics |
Harvard & Smithsonian

gluegenes



ALZHEIMER'S

More than 40 JAX
researchers are working
towards finding a cure
for Alzheimer's disease



Thank you

M
O
U
S

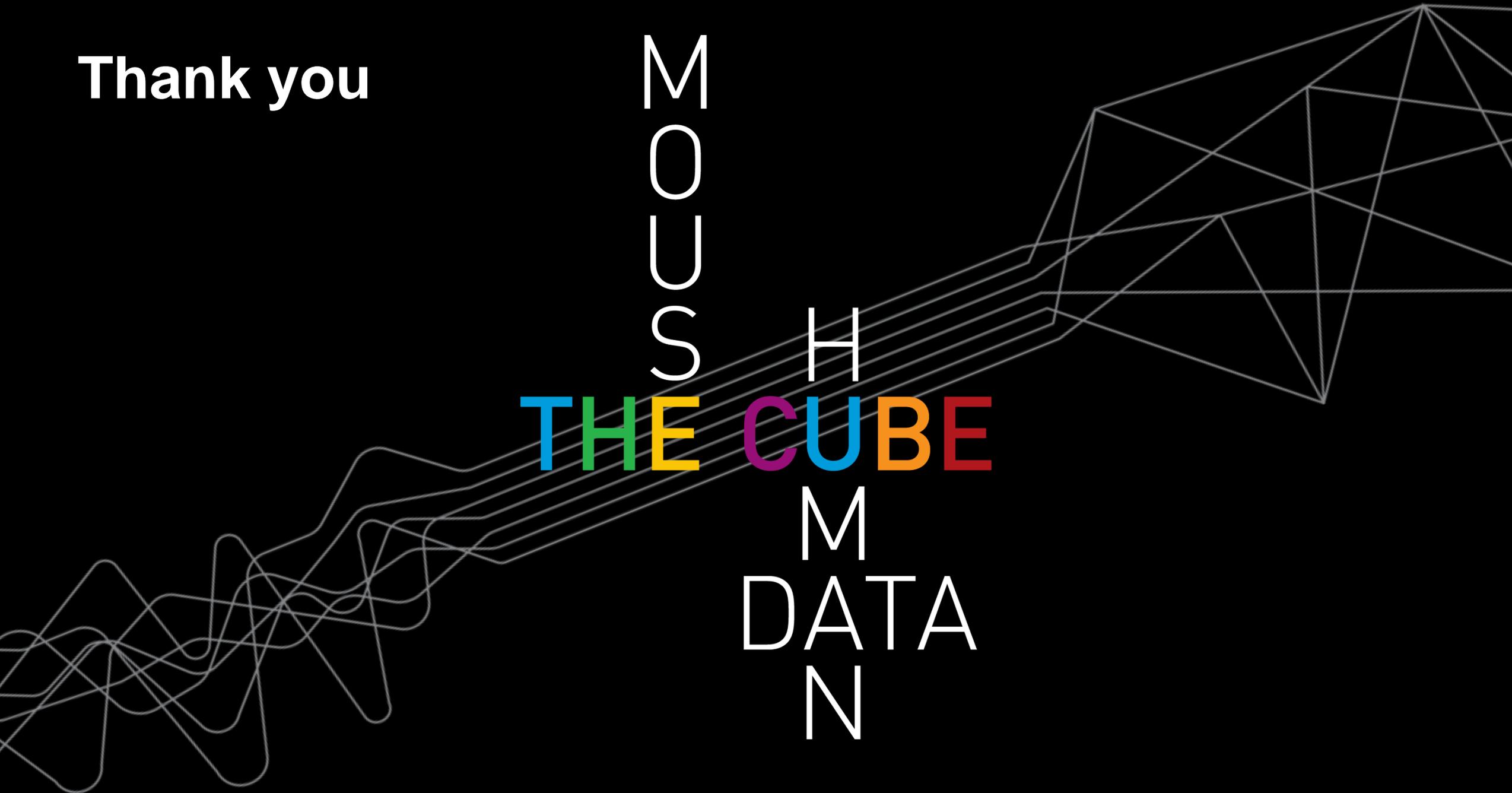
H

THE CUBE

M

DATA

N

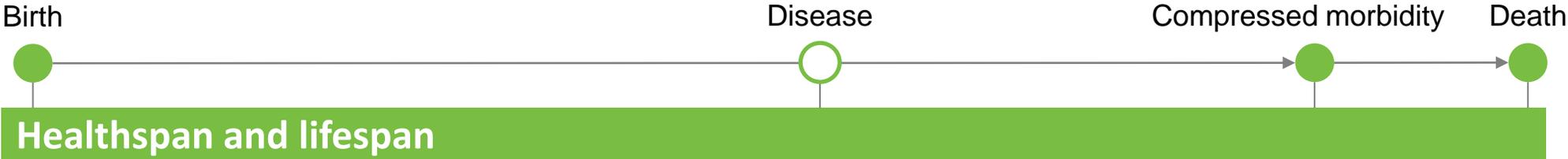




Longevity investment activity and trends

2H21

What is longevity?



Is it just for billionaires?

David A. Sinclair @davidasinclair

"The brave may not live forever, but the cautious do not live at all" - @richardbranson 🚀 White moves first!



Richard Branson and David A. Sinclair

1:05 AM · Aug 16, 2021 · Twitter Web App

NEW YORK POST SPORTS+ NEW! TRY IT FREE

OCTOBER 21, 2021

BUSINESS

Jeff Bezos has reportedly invested in anti-aging startup Altos Labs

By Will Feuer September 7, 2021 | 7:56am | Updated

MORE ON: JEFF BEZOS

Not just lunch: Bezos, Lauren Sanchez spent the whole weekend in NYC with her ex

Jeff Bezos 'may have lied' to Congress about Amazon's business practices, reps say

William Shatner fires back at Prince William for dismissing space

Amazon founder **Jeff Bezos** has reportedly invested in Altos Labs, a startup dedicated to **discovering how to reverse the aging process**.

The company was founded earlier this year and is poaching university scientists with salaries as high as \$1 million and promises that they can pursue their own research on how cells age and how to reverse that process, according to a report from **MIT Tech Review**.

Altos Labs also counts Bezos among its investors, the report said, citing people briefed by the company.

Bezos' investment office Bezos Expeditions did not return The Post's request for comment.

Bezos, 57, is currently the world's richest man with a net worth of about \$201 billion, according to Bloomberg's Billionaires Index.

COLUMNISTS

Jennifer Gould
This NYC neighborhood is making a comeback after being hit hard by COVID lockdowns

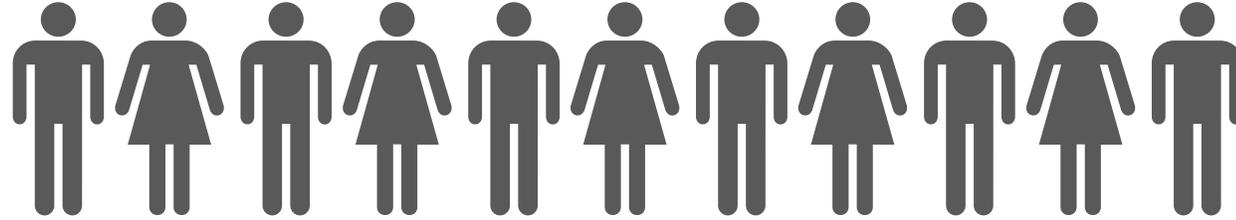
Steve Cuzzo
Wegmans deal signals reawakening appetite for Manhattan leases

Charles Gasparino
Former Merrill Lynch CEO Dave Komansky dead at 82

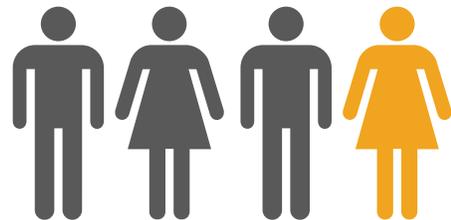
SEE ALL COLUMNISTS



Nope

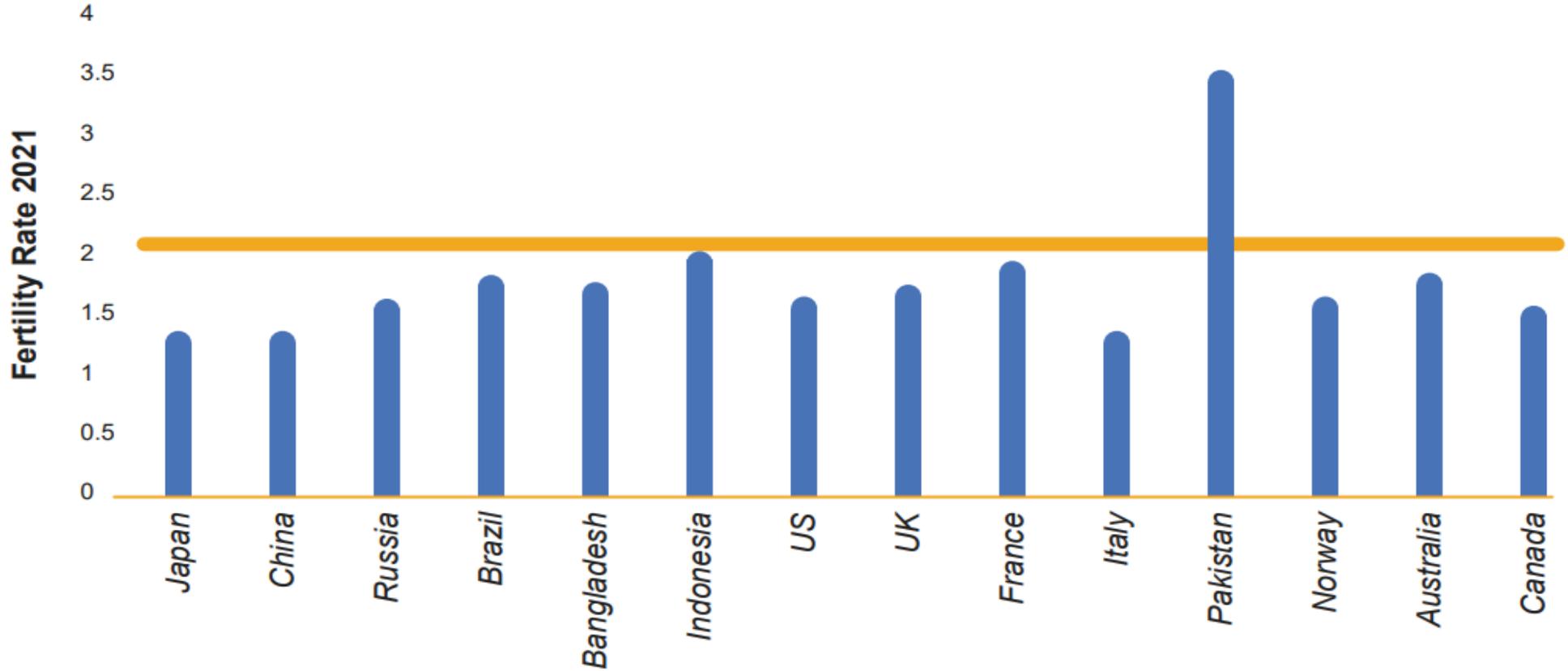


The UN estimates that by 2050:
1 in 6 people will be over age 65 (16%)
up from **1 in 11** (9%) in 2019:

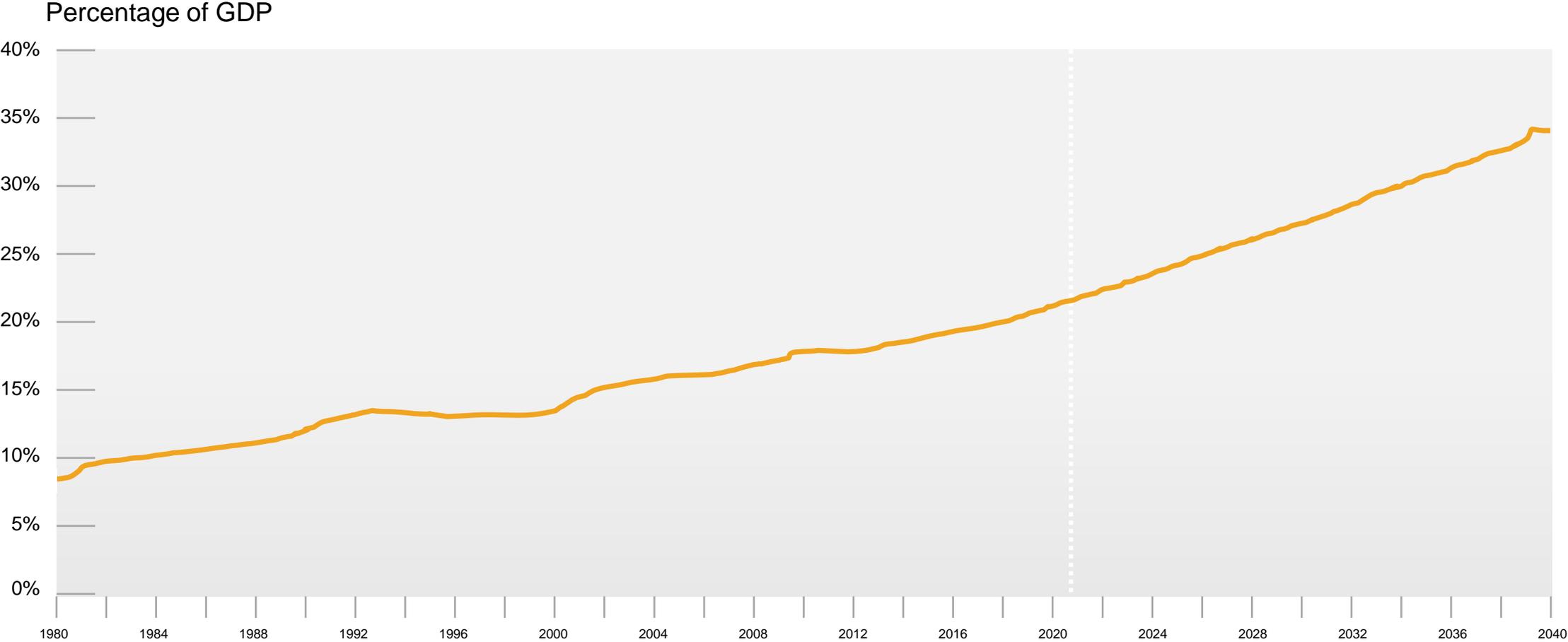


In Europe and North America, it will be
1 in 4 by 2050:

Future tax earners are in decline globally



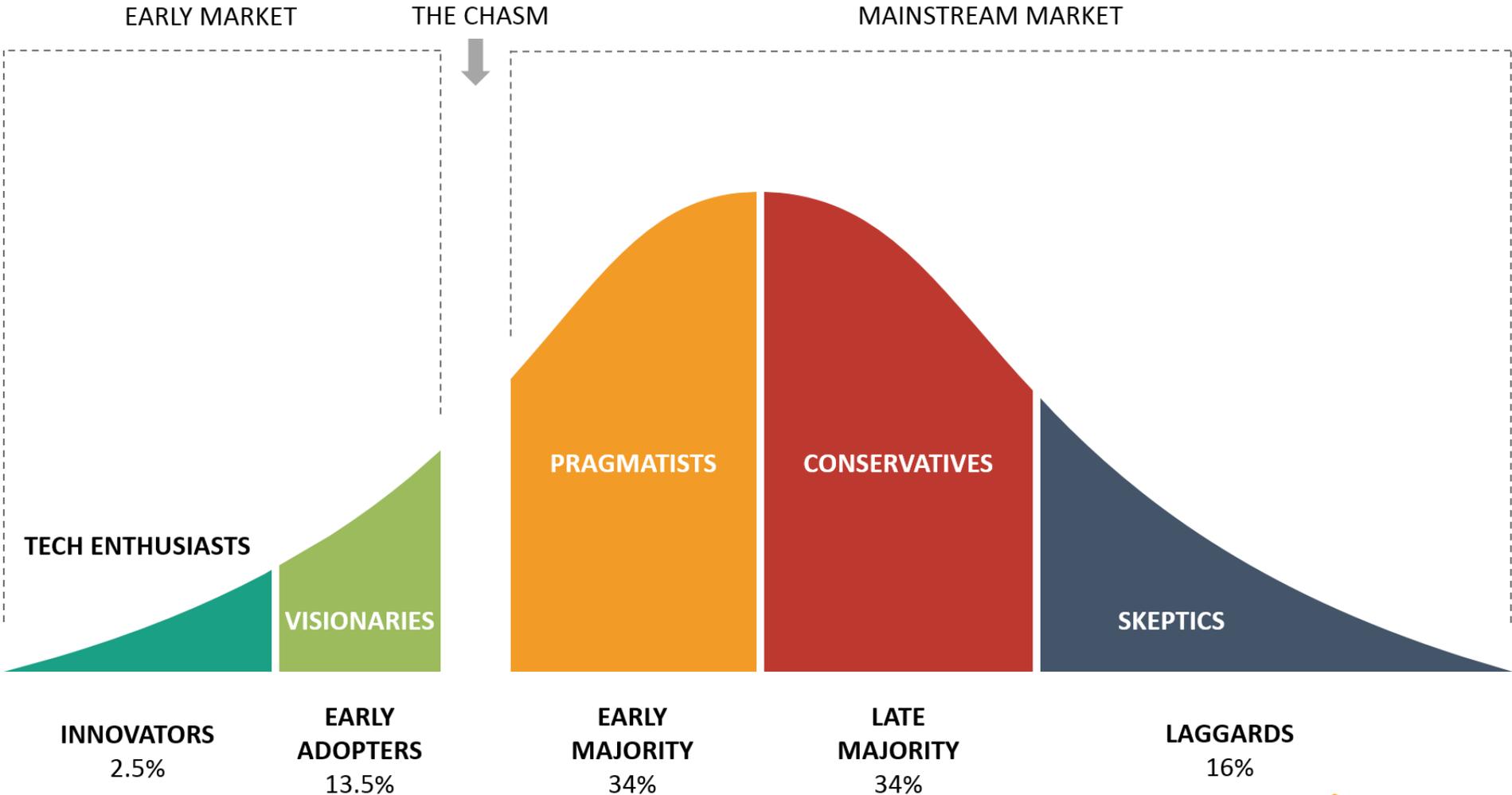
The need for commercialised longevity is growing



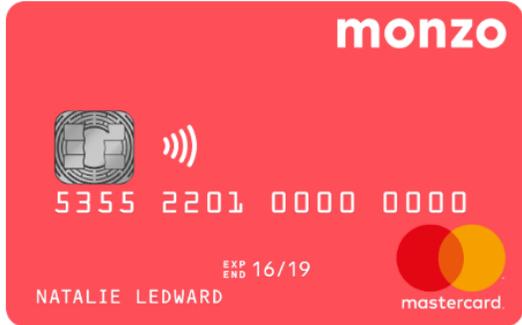
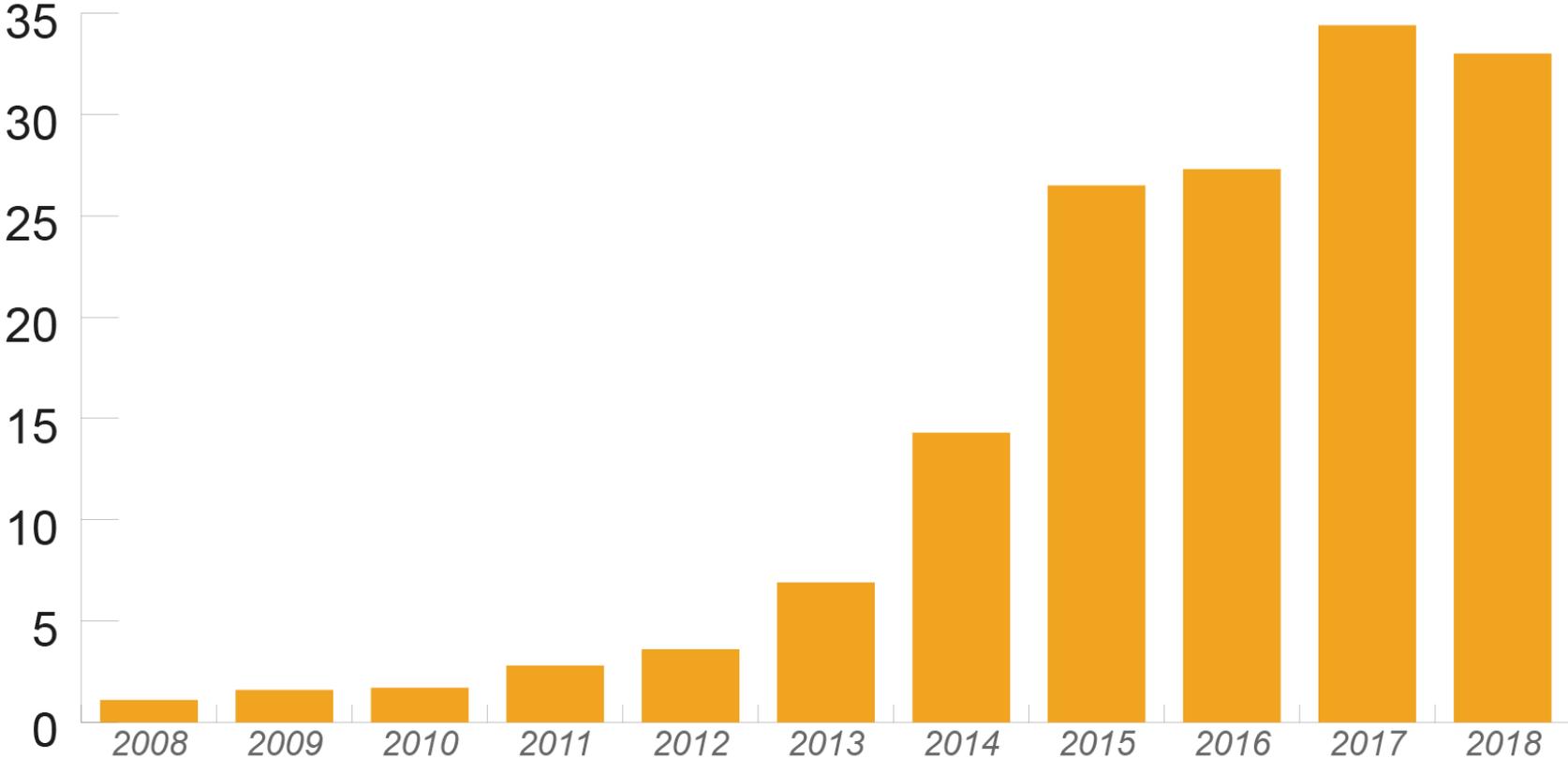
US healthcare spending will reach 34% of GDP by 2040.



Chasm theory



Fintech: a market growth parallel



Total value of fintech investments worldwide: 2008 to 2018 (\$B)

Define the market, then define growth

The longevity market is still defining itself and there is a need to assist early stage companies with their market entry and success while demystifying the opportunities for investors, clinicians and consumers.

\$800m

Rejuvenation therapies

\$27tn

Tissue/organ : Nano : AI : AgeTech : Neural ... *Fintech : Service*

Global Longevity and Anti-Senescence Therapy

“The market is expected to reach around \$800 million by 2026 (Senolytic Drug Therapy, Gene Therapy, Immunotherapy and Others); By Application (Longevity, Senescence Inhibition, Cardiovascular Diseases, Neural Degenerative Diseases, Ophthalmology Disorders, and Others).” [LINK](#)

Longevity Industry 1.0

“While, the global Longevity Economy is projected to reach \$27 Trillion in 2026, the Age-Tech segment alone will reach \$2.7 Trillion by 2025.”

[LINK](#)



For us, longevity companies can be:



Prevent damage that causes aging;

Early identification of aging damage;

Treatment of damage that has occurred;

Reversal of damage that has occurred.

- Atherosclerosis
- Cardiovascular disease
- Osteoporosis
- Type 2 diabetes
- Hypertension
- Alzheimer's disease

Academic research into 'longevity' is increasing

Longevity



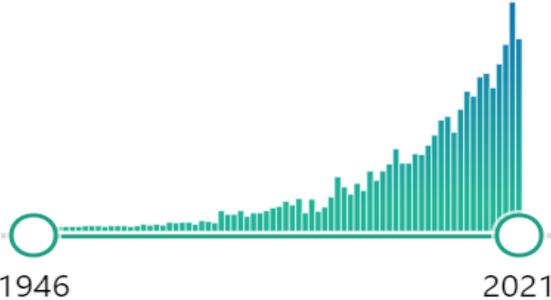
3994

1786

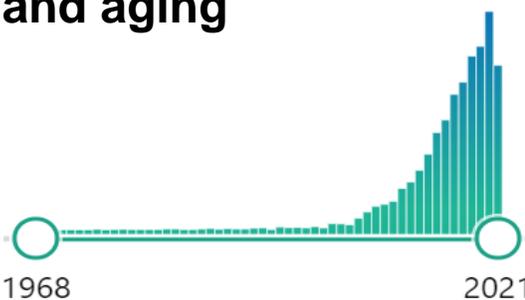
2022

Academic research into 'longevity' is increasing

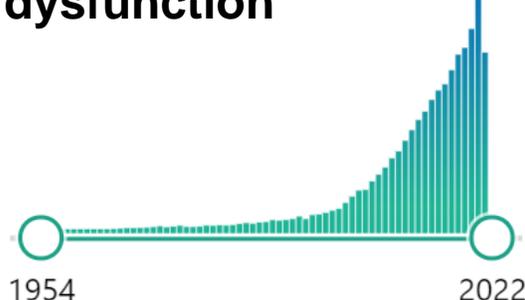
Ovarian aging



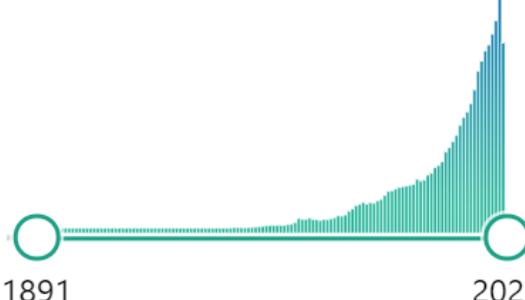
Epigenetics and aging



Mitochondrial dysfunction



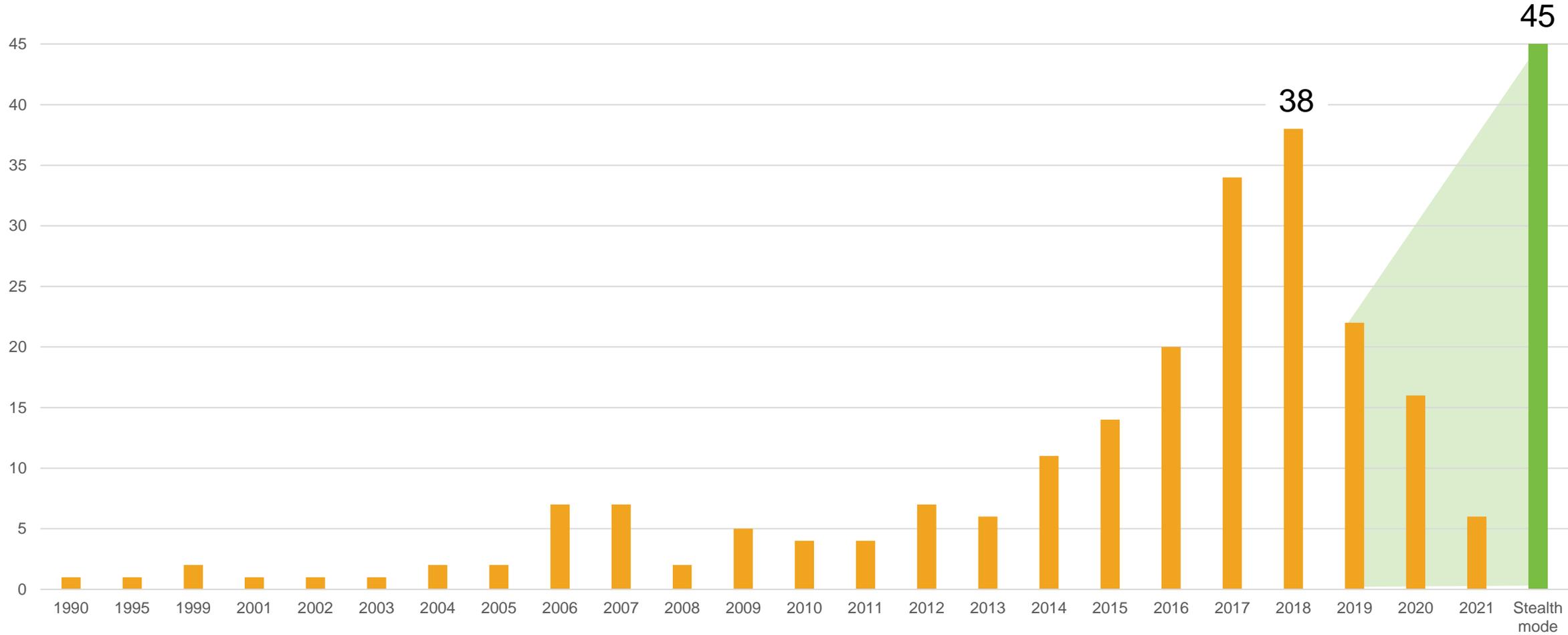
Senescence



Longevity



Longevity companies founded



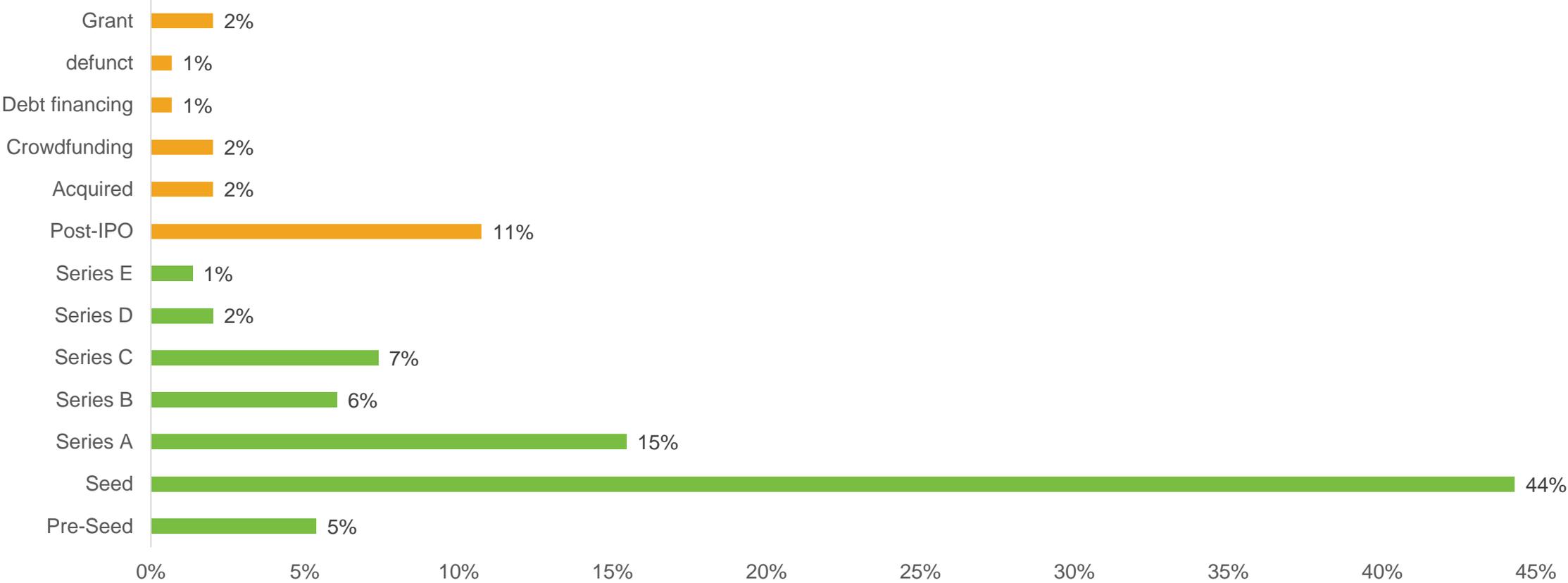
© Copyright First Longevity Limited. All rights reserved.



Where are they?



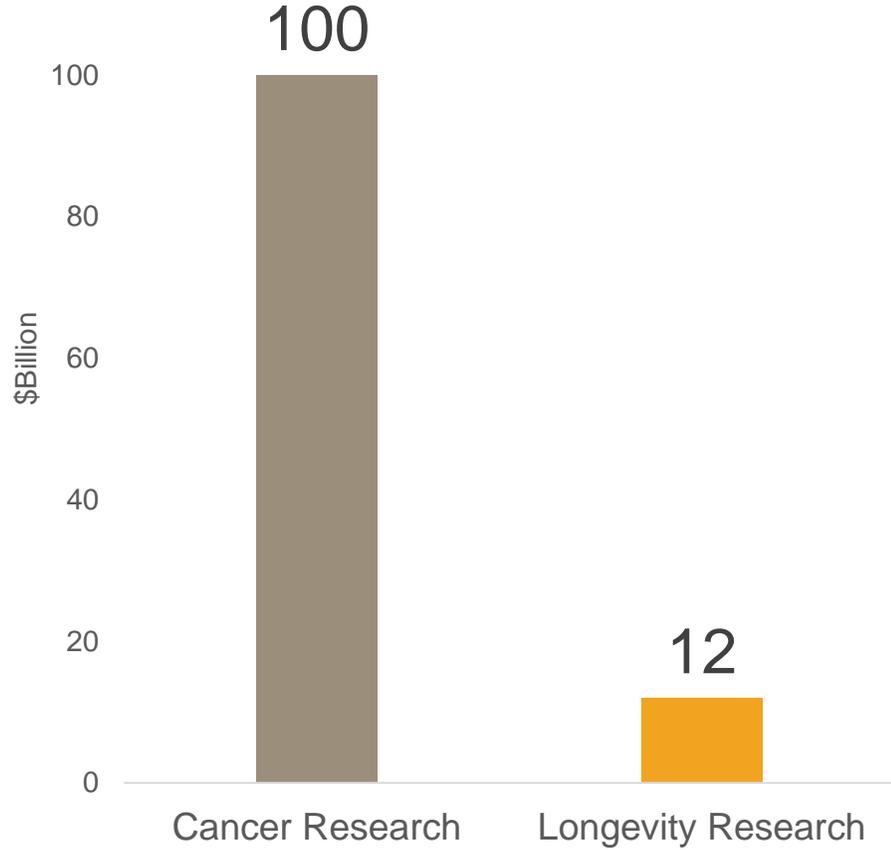
What stage are they at?



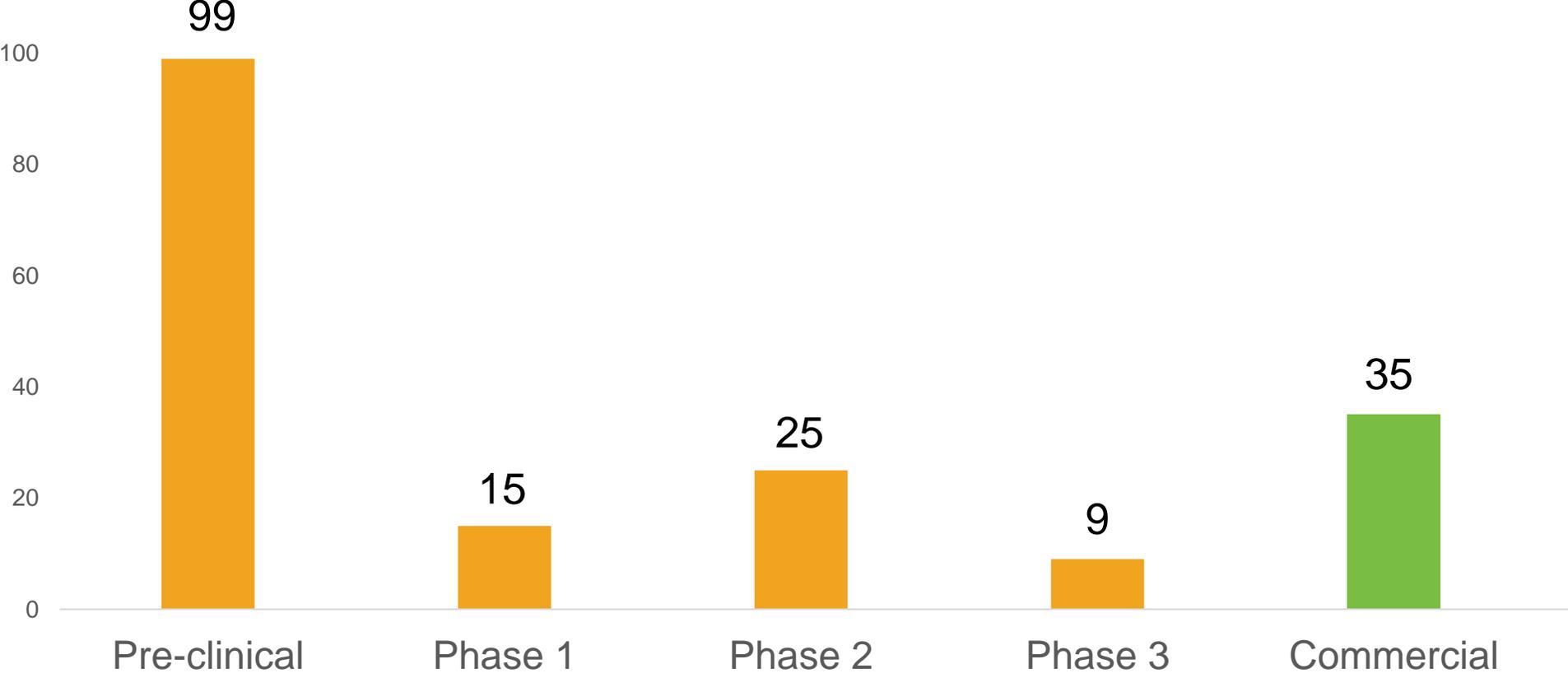
How much has been invested so far?

\$12B

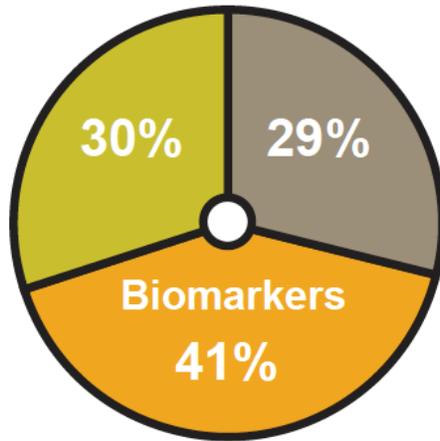
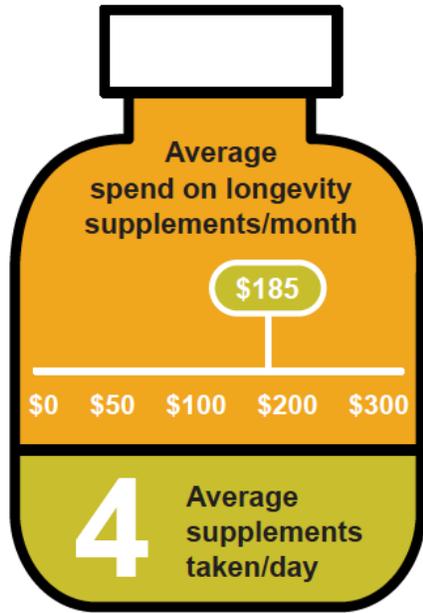
Total funding to date.



The number of longevity clinical trials



Will people/patients/consumers adopt?



-  I currently do not use any, but I intend to in the future
-  Currently using biomarker tests
-  I currently do not use any, and I do not intend to in the future

Top 3 supplements

- Vitamin D
- NAD+ boosters
- Vitamin C

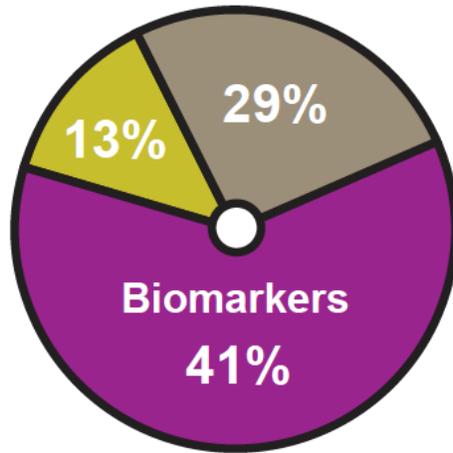
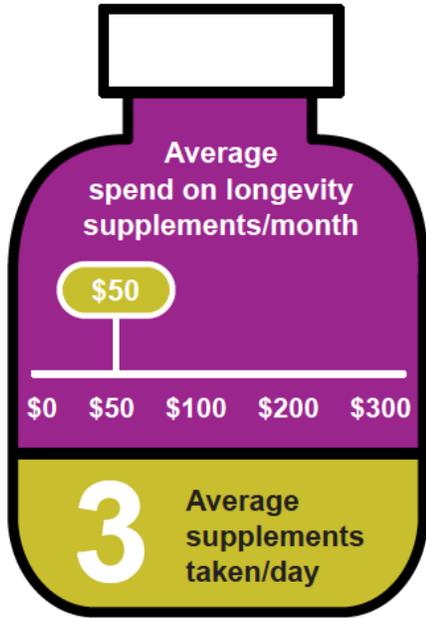
Top 3 reasons for supplementing

- Preventing a vitamin deficiency
- Preventing age-related diseases
- Facilitating a longer life



Sample size: 271

Will people/patients/consumers adopt?



- I currently do not use any, and I do not intend to in the future
- Currently using biomarker tests
- I currently do not use any, but I intend to in the future

Top 3 supplements
<ul style="list-style-type: none">Vitamin DMagnesiumAshwaghandha
Top 3 reasons for supplementing
<ul style="list-style-type: none">Preventing a vitamin deficiencyPreventing age-related diseasesEnhancing skin, hair and nails



Sample size: 271

Will people/patients/consumers adopt?

How concerned are you about each of the following as they relate to the possible effects of aging?



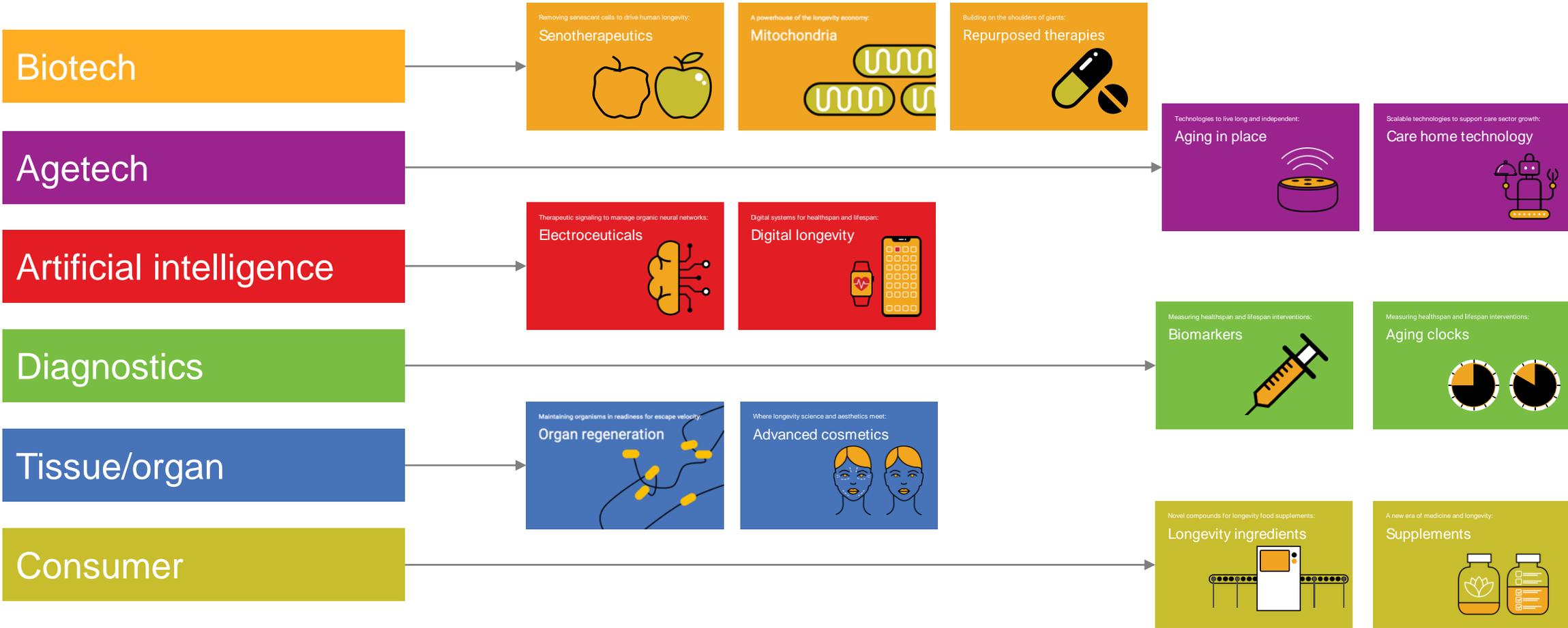
Sample size: 697

Hot areas for longevity investment



www.longevity.technology/analysis/

Hot areas for longevity investment





Thank you!

For further information please contact:

Phil Newman
Founder & CEO

phil@longevity.technology

+447855357884



Dashboard of leading longevity indicators

Three phases:

1 Observed mortality

2 Observed morbidity

3 Future interventions

Duration:

Short

Medium

Long

Innovation required:

Quicker

Translation

Visibility



Reasons to be cheerful:

Exploring potential big-ticket drivers of future longevity improvements



Chair:

Douglas Anderson
Club Vita



Panelists:

Madeleine Braun
The Jackson Laboratory



Gemma Balmer
Cancer Research UK



Phil Newman
First Longevity

