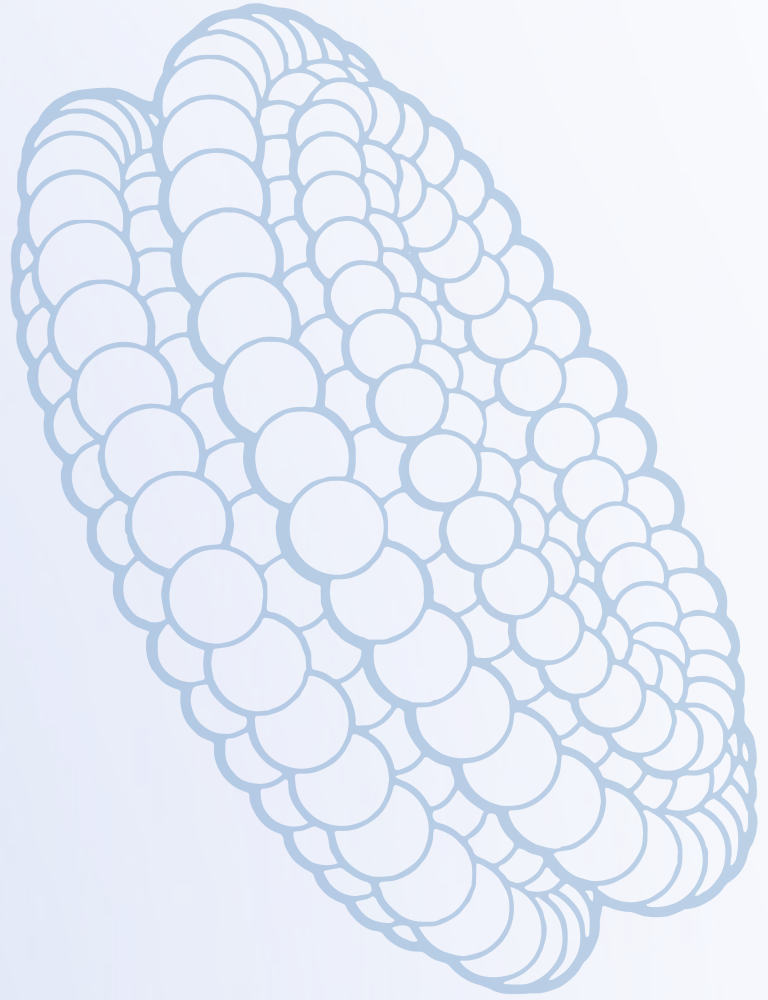


2022 PROGRESS UPDATES



2022 Progress Report & 2023 Plans

Thank you for enabling us to do the work we do; i.e. supporting the beneficial development of high-impact technologies that are too ambitious for legacy funders to fund.

Introduction

As you can tell from this report, thanks to you, we have been able to dramatically scale our reach and impact this year. For instance, the team has grown from 3 core employees to a core team of 8 employees and various contributors! In addition to this we also have a core team of 4 researchers for our Tech Tree project, with 10+ researchers contributing on a regular basis.

In addition to our growing community (e.g. this year, our Youtube channel has grown to over 14k subscribers, i.e. a 21% increase since 2021, and our Twitter followers have increased with 49% since 2021), we were invited to share Foresight's progress across an unprecedented number of relevant media channels, which we'll link to throughout the report.

Below you find our 2022 progress highlights and 2023 plans to grow. Our activities are divided into "Advancing Technological Progress", which contains seminars, workshops, prizes, and fellowships focused on advancing technological progress, and into "Charting Beneficial Futures" which contains our efforts in charting positive trajectories ahead, such as through the Tech Trees, Gaming the Future book, or the Existential Hope platform and book.

These distinctions are somewhat artificial; we want positive futures through technologies! That's why our report contains 2022 progress and 2023 plans for focusing on specific technological trajectories. You decide how much we can achieve together!

1

Our team



Allison Duettmann
President
CEO



Beatrice Erkers
COO



Christine Peterson
Co-founder
past president



Aleksandra Smilek
Creative Director
Web3 curator



Lou de K
Meta Projects



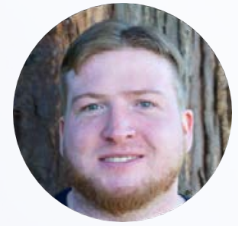
Niamh Peren
Communication Director



Aaron King
Research Director



Edda Stenzel
Executive Assistant



Finan Adamson
Events Coordinator



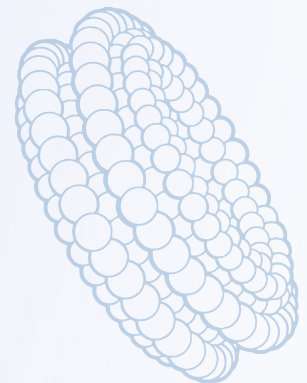
Djordje Devic
Website Management



Sherry Hull
Administrative Manager

1 Advancing technological progress

2022 PROGRESS
UPDATES



1 Advancing technological progress

Seminars

2022

- In addition to our three core technology tracks in [biotech](#), [molecular nanotech](#), [intelligent cooperation](#), we launched two new tracks, focused on [neurotechnology](#), and [space](#) technologies. Each of them gathers a community of 200 scientists, entrepreneurs, and funders interested in advancing their area for beneficial long-term futures via monthly seminars. A few seminar highlights:

[Jennifer Garrison, Buck Institute - Reproductive aging](#)

[William Shih, Harvard - Fully Addressable Nanostructures from DNA Origami Slats](#)

[David Eagleman, Stanford - Creating New Senses for Humans](#)

[Steve Jurvetson, Venture Capitalist - virtual Space Gallery Tour](#)

[Christopher Allen, Blockstream; Brian Behlendorf, Open Source Security Foundation; Alan Karp, Earth Computing - Identity & Securities Focus](#)

2023

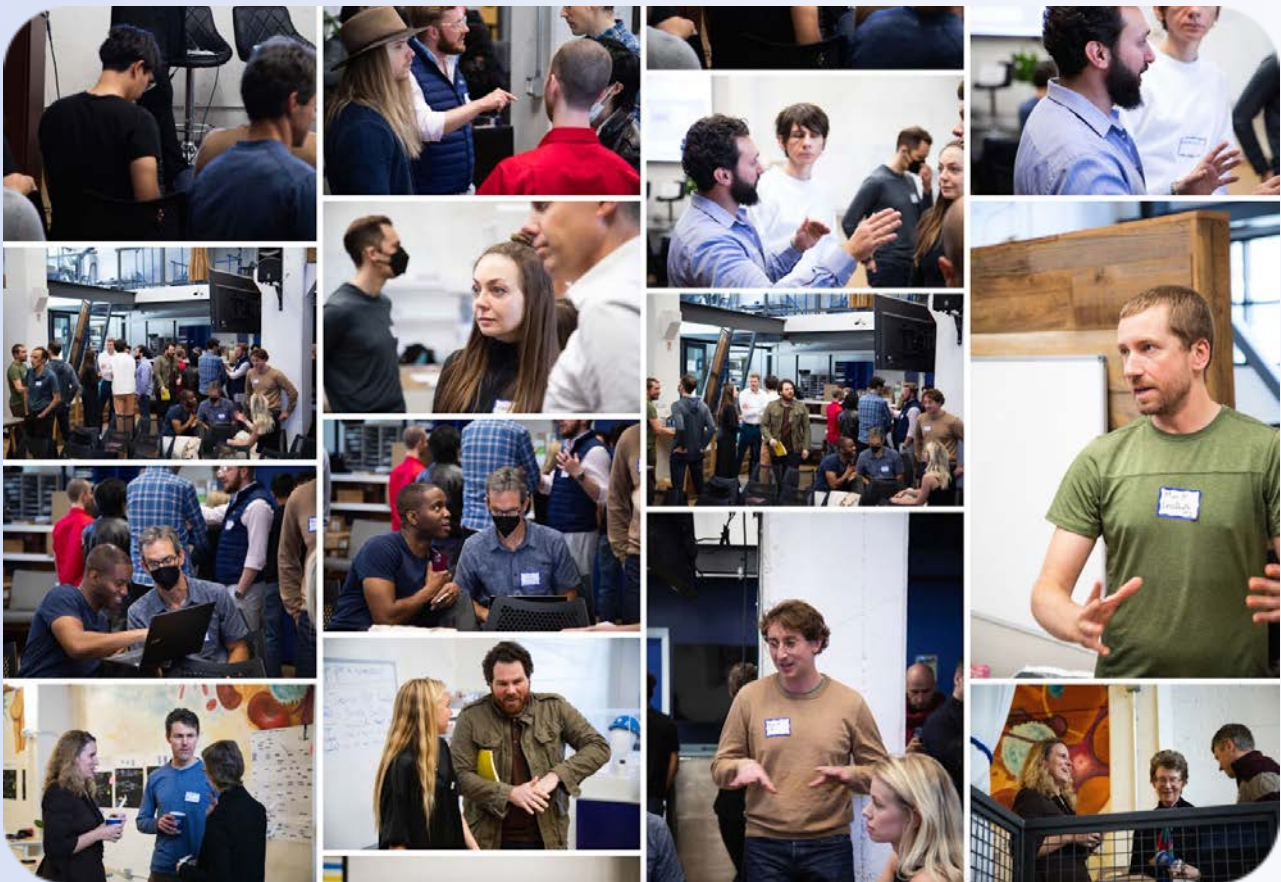
- As our groups are growing (20+ weekly applications), we will focus on community development by relying on seminar requests by group participants to build our 2023 program. Confirmed nominated seminars thus far include George Church for the biotechnology track, Andrew Trask for the computing track, Basille Vicky for the molecular machines track, and many more.

1 Advancing technological progress

In person meetings

2022

Our virtual seminar program is useful for regularly updating relevant technical communities on major developments but the work for advancing a field can best happen face to face. That's why we were thrilled to bring back our annual workshops in 2022:



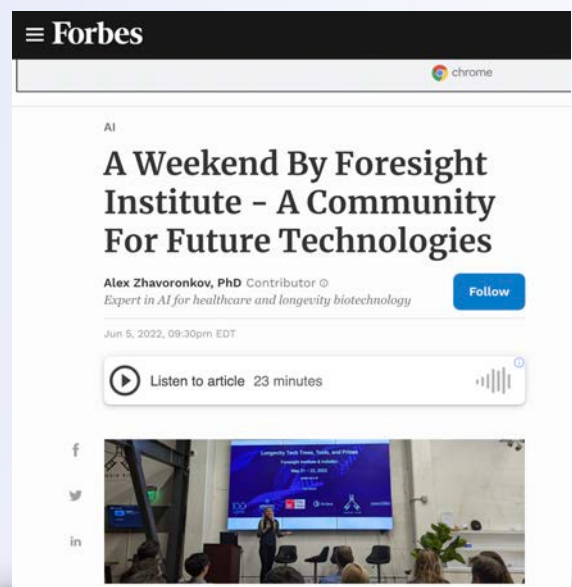
Biotech & Longevity workshop

1 Advancing technological progress

In person meetings

2022

- [Biotech & Longevity Workshop](#)**: Now that the longevity ecosystem is growing, we invited top researchers, entrepreneurs, and funders to propose and rank undervalued challenges in longevity. Top proposals included studying extracellular matrix aging led by Joe Betts-LaCroix, Retro, standardizing a definition of aging by Vadim Gladyshev, Harvard, and a multi-omics clock foundation by Nikolina Lauc, GlycanAge. Report and videos published soon. Click here for a preview of the [project proposal report & videos](#). [This Forbes article](#), written by Alex Zhavoronkov, explores Foresight's current projects - centering in on the Longevity Workshop as the focal point, and following the workshop Foresight's Aaron King spoke at MIT's [Imagination in Action Web3 Summit](#) as part of the "BioWeb" panel.



READ THE ARTICLE

1 Advancing technological progress

In person meetings

2022

- [Designing Molecular Machines Workshop](#): Rapid progress in design software could unlock entirely novel paths in the field of Molecular Machines. We invited top talent across both disciplines to exchange tooling and define still outstanding challenges to building increasingly sophisticated molecular machines. Top proposals included a universal constructor led by Alexis Courbet, University of Washington, programmable protein-like molecules led by Chris Schafmeister, and a platform for 3D manufacturing led by Stephane Redon, Samsung. Report and videos published soon. Click here for a preview of the [project proposal report & videos](#).



1 Advancing technological progress

In person meetings

2022

- [Crypto, Security & AI Workshop](#): The goal of the workshop is to advance cooperation at the intersection of cryptography, security, and AI. This intersection is nascent but we think it could be of fundamental importance for beneficial long-term futures. Top presentations include Juan Benet, Filecoin: Cryptography Tools for Paretotopia, Remco, Worldcoin: Privacy-preserving Proof of Personhood, Amanda Ngo, Ought: Automating Complex Reasoning, and Mark S. Miller: Computational Markets & Agoric Systems.



1 Advancing technological progress

In person meetings

2022

- **Global meetups:** Our global community is growing rapidly, and flourishes via global meetups in San Francisco, LA, NYC, Boston, Berlin, London, Singapore, Paris and beyond.



1 Advancing technological progress

In person meetings

2022

Vision Weekends Europe & US: Once annually, we invite our top fellows, mentors and community members across to our end of year festival in a castle outside of Paris and at the Internet Archive in San Francisco. We review progress across our crypto, longevity, space, neurotech, and nanotech tracks and explore how to shape it toward beneficial futures. Make friends across disciplines and join 50+ panels, workshops, mentorship hours, VIP orbit events, and evening festivities.



[Get your Ticket](#)

1 Advancing technological progress

In person meetings

2023

- In addition to hosting our annual workshops in our core technology tracks (Biotechnology, Molecular Machines, Intelligent Cooperation), we would like to add a workshop in our new tracks: In our Neurotech track, we will focus on rewriting the Whole Brain Emulation Roadmap, with the workshop being chaired by Anders Sandberg, and one in our Space Technology track, focused on near-term technology milestones.

1 Advancing technological progress

Fellows

2022

- Support: In addition to seeding ecosystems around undervalued technical domains through seminars and workshops, we also support particularly promising talent via our Foresight Fellowship. In 2022, we supported 40 fellows, doubling our 2021 cohort. We were able to give our first J1 Visa to [Isaak Freeman](#) to support him in hosting [Future Forum](#) in the Bay Area, a cross-organizational conference to gather organizations interested in the long-term future of life. Many fellows gave keynote seminars to the Foresight community, including Stefan Borsely on [Molecular Ratchets](#), Damien Sluysman on [Single Molecules](#), and Jamie Joyce and Patrick Koellinger on [DeSci](#). We hosted regular mentorship hours, such as with Tom Kalil, Schmidt Futures, who joined to discuss [career counseling](#). All of our fellows received travel-paid invitations to our workshops for 1-1 in-person mentorship, and stipends to attend Vision Weekend.

1 Advancing technological progress

Fellows

2022

- Top achievements of our fellows include:

[Liang Feng](#), a postdoctoral fellow at Northwestern, discovered a new chemical concept at the nanoscale called mechanisorption. His research, which includes over 50 peer-reviewed publications, could help the development of "life-like" materials for applications ranging from chemical separation to computing to energy storage. He was recently featured in [Forbes 30 Under 30 2022](#) for his work.



1 Advancing technological progress

Fellows

2022

- [Simon Krause](#), a chemist interested in dynamic properties of porous framework materials on different lengthscales, publishes on integrating molecular motors in a covalent organic framework [here](#).
- [Joshua Tan](#)'s Metagovernance Project won a million-dollar NSF grant to study governance transitions, in collaboration with UC Davis, UWash, and UC Boulder.
- [Yip Fai Tse](#) published a paper with Peter Singer: [AI Ethics: The Case For Including Animals](#). In the paper they argued that animals matter, and that AI impacts animals deeply, and therefore the scope of AI ethics should extend to animals.
- [Nikolina Lauc](#), GlycanAge. The the GlycanAge team has been designing a take home blood test, MenoAge, which has the potential to diagnose perimenopause and menopause. Find more information [here](#).
- [Eleanor 'Nell' Watson](#), an interdisciplinary researcher in emerging technologies such as machine vision and A.I. ethics, published a [bioinformatics paper](#) on simulationally validated treatments for covid (SARS-CoV-2), which includes the first in-silico model of the viral endodomain. She also recently founded a new IEEE Working Group to help tackle confusion and misapprehension about whether one is dealing with a human being or an AI. Find more information [here](#).
- [Mac Davis](#), biohacker & Founder of Minicircle, helped organize and co-chair the [Prospera Healthtech Summit 2022](#), a gathering of healthcare entrepreneurs, investors, biohackers and innovators with the shared intention of revolutionizing access to healthcare.
- Foresight Senior Fellow Robin Hanson publizises his discovery on [Grabby Aliens](#) based on his research suggesting that “advanced aliens really are out there, and we have enough data to say roughly where they are in space and time, and when we will see or meet them”

1 Advancing technological progress

Fellows

2022

- ImYoo, a biotech startup debugging the human immune system co-founded by Foresight Fellow [Tatyana Dobрева](#), recently released [a small age-immune related finding!](#) They also launched our [first citizen science campaign](#).



- Foresight Senior Fellow, [Lee Cronin](#), joined the Lex Fridman podcast. Described by Fridman as “one of the most fascinating scientists I’ve ever spoken to”, Cronin discusses how he’s using chemistry to create life from scratch, “life is a universe developing a memory.”



1 Advancing technological progress

Fellows

2023

- With more than 150 fellowship applications for our 2023 fellowship, we plan to expand the program in the following ways:
- Expand our fellowship to cover our neurotech and space tracks in addition to our core technology tracks (currently ca 15 promising applications in these areas)
- Increase our ability to give out J1 and H1b cap exempt visas to fellows seeking to move to the US (currently three promising applicants seeking those)
- Improve our fellowship support by giving out in-house grants for research proposals or seed funding (currently five promising applicants seeking those)
- Encourage fellows to take responsibility for the technological applications they advance through a fellowship oath committing to beneficial technological development and threat reduction

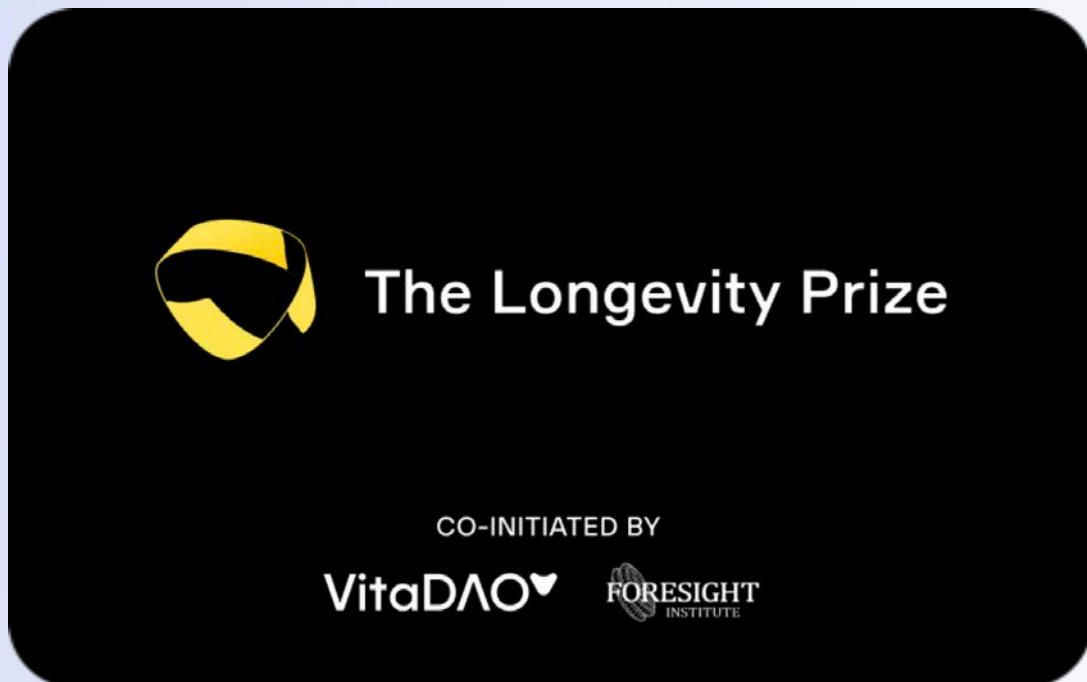
1 Advancing technological progress

Prizes

2022

- Continuing our annual tradition since 1992, we will again award the 2022 Feynman Prize for Molecular Nanotechnology, in the categories experiment and theory, at Vision Weekend this year, including the Student Award for junior talent.

In 2022, we initiated [The Longevity Prize](#), together with VitaDAO and The Methuselah Foundation, to award progress in undervalued areas of longevity. The prize features up to \$300k in contributions by 6800 contributors, and is decided upon via an excellent judging committee.



1 Advancing technological progress

Prizes

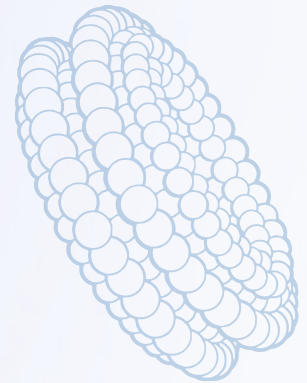
2023

- To posthumously honor the genius of Norm Hardy and spur progress in computer security, we plan to launch the Norm Hardy Prize, awarded to outstanding individuals who make important strides on computer security usability. In the long-term, we would like to launch prizes to our neurotech and spacetech tracks as well, as they are an effective tool to locate novel ideas and talent.

2

Beneficial Futures

2022 PROGRESS
UPDATES



2 Beneficial Futures

Tech Trees

2022

To map beneficial development of our technology interest areas Health Extension, Space, Nanotech, Neurotech, and Intelligent Cooperation, we are building technology trees. The purpose is to sketch out desired technology trajectories, and major labs/companies, and outstanding challenges along the way, such that novel talent and funders find it easier to plug in.

Tech Trees team



Molecular Machines

Yuanning Feng

- Postdoctoral Fellow at Northwestern University
- Nobel Laureate Stoddart's Mechanostereochemistry group



Neurotech

Maryna Polyakova

- Researcher at Max Planck Institute for human cognitive and brain sciences



Intelligent Cooperation

Yingtong Lai

- Senior engineer at electric coin co.
- Prior Ethereum research scientist



Space

Romain Fontaine

- European Space Agency



Longevity

Aaron King

- Research Director, Foresight Institute

Current prototypes from our tech tree leads:

Biotech: [Longevity Tree](#) led by [Aaron King, Foresight Institute](#)

Molecular Machines: [Beneficial Nanotech Tree](#) by [Yuanning Feng, Northwestern University](#)

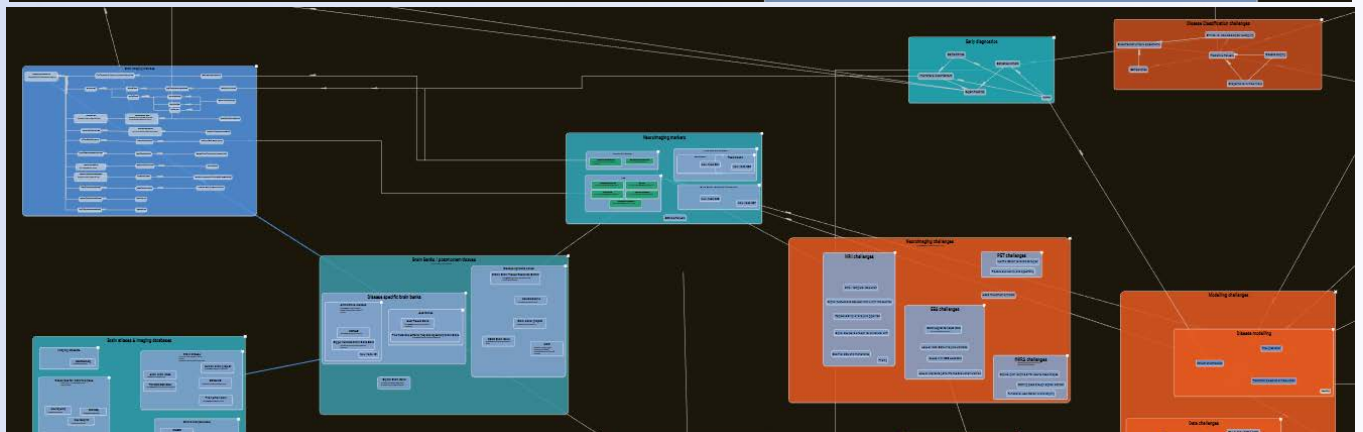
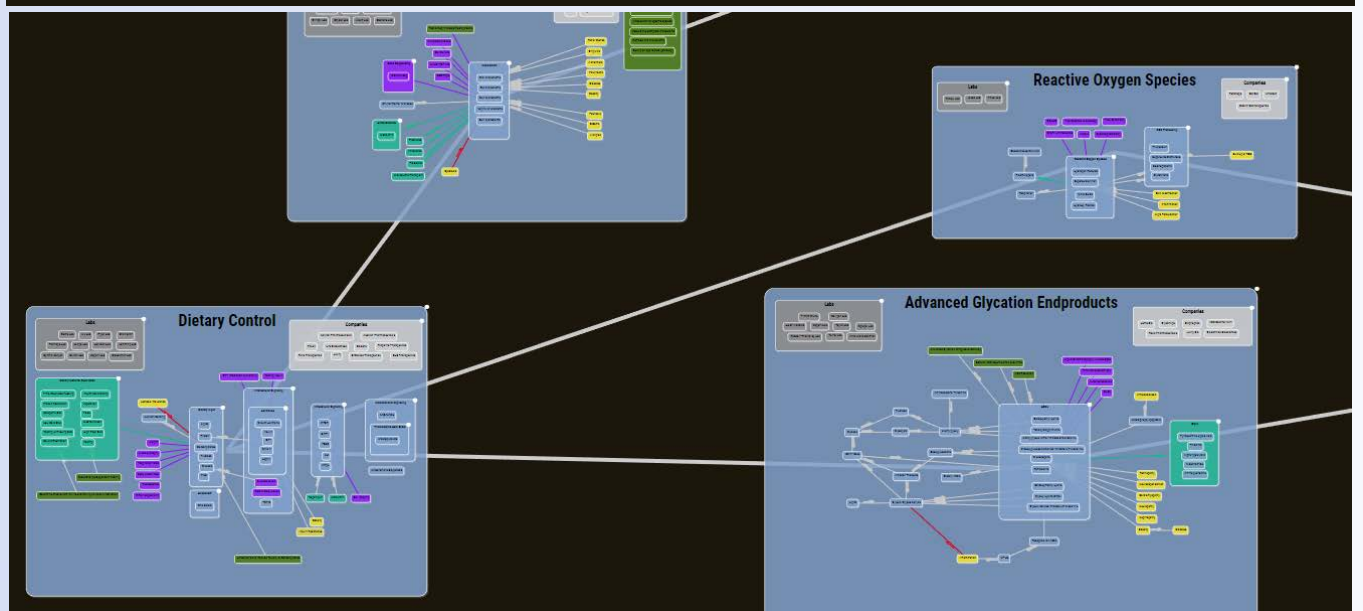
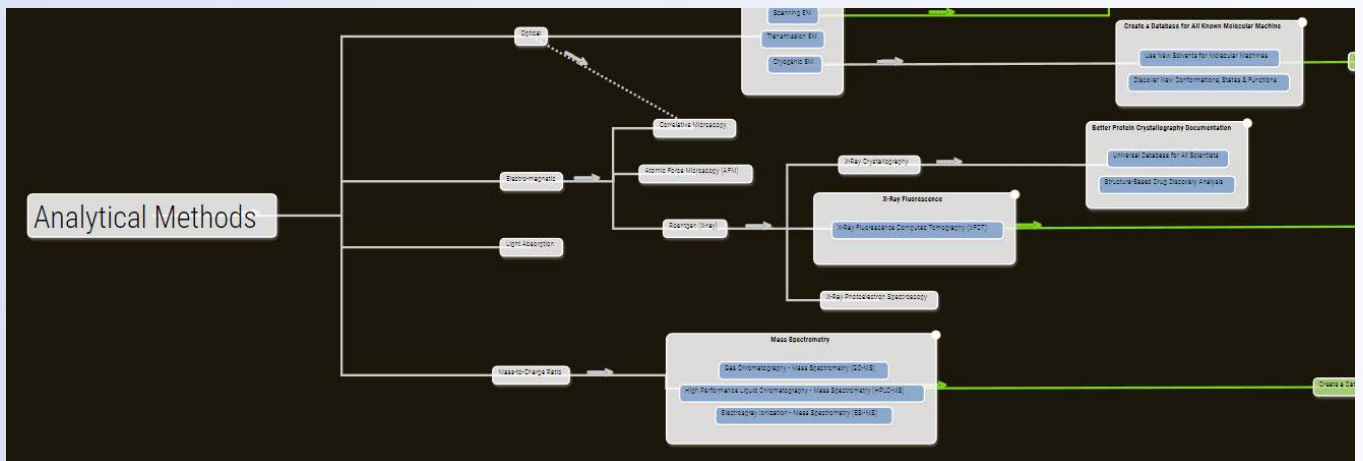
Neurotech: [Beneficial BCI Tree](#) by [Maryna Polyakova, Max Planck Institute](#)

Intelligent Cooperation: [Secure Computing Tree](#) by [Ying Tong Lai, Electric Coin Co](#)

Space: [Asteroid Mining Tree](#) by [Romain Fonteyne, European Space Agency](#)

2 Beneficial Futures

Tech Trees



2 Beneficial Futures

Tech Trees

2022

- Foresight co-hosted the first DeSci (Decentralized Science) track at EthDenver, focusing on the [tech trees](#). This inaugural workshop track resulted in a DeSci-focused workshop at every following Ethereum Global conference and multiple other conferences in 2022. For instance, Foresight's Allison Duettmann discussed tech trees at EthAmsterdam's [DeSci Day](#), and at MIT's [DeSci Boston](#) event. In connection with ETHcc in Paris, Foresight organized a DeSci day with Lab DAO and [CNRS](#), sponsored by Springer Nature, hosting sessions on Foresight's tech trees and ethics within DeSci. Allison Duettmann also authored [this Cointelegraph article](#) on tech trees and was featured in [this UltraRare Podcast episode](#) with Ela Madej, 50 Years VC, about where science is heading, and their hopes and fears for the future.



2 Beneficial Futures

Tech Trees

2023

- Adding differential technology nodes: Currently, the trees map a desired path through a technology area. Ideally, they also map potential risks arising from technological development along the way and strategies for mitigation.
- Specific collaborations: The Extracellular Matrix challenge won the Foresight workshop for being the most highly voted underrated area of aging research. That workshop spurred Collin Ewald, Brad English, and Aaron King to begin collaborating on an ECM aging focused workshop. This workshop is using the tech tree as a starting point to define the ECM-aging domain and work needed to improve the specific node.
- Crowd-sourcing and funding: Long-term, the plan is to open up the tech trees for crowd-sourcing and crowd-funding by a wide community. Comment-functions for crowd-sourcing are currently under development. As for crowd-funding, we launched the first round of bounties for outstanding challenges, and are now working to incorporate funding solutions such as IP NFTs or investment syndicates that confer skin-in-the-game for the funders of a node.

2 Beneficial Futures

Xhope

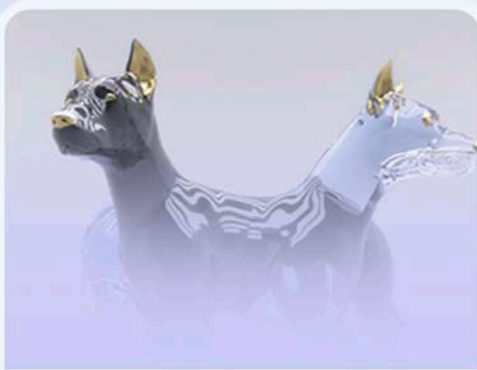
- Website: [The Existential Hope Project](https://www.existentialhope.com) has a new website! Existentialhope.com, an onboarding platform for positive futures. It contains top resources on positive futures, specific technological paths, coordination challenges, summed up in a monthly newsletter on updates from the ecosystem of organizations working on positive futures. Here are a few of our favorite rabbit holes:
 - [Existential Angst & Existential Hope](#)
 - [Meta Tools for Progress](#)
 - [Intelligence](#)



2 Beneficial Futures

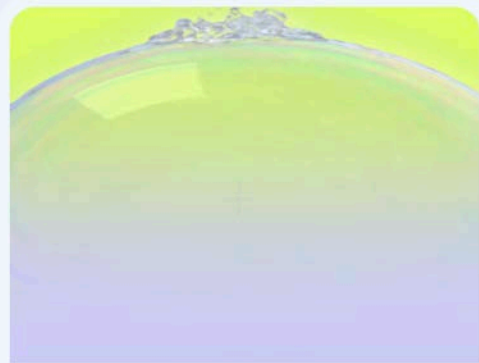
Xhope

- Podcast: In the [Existential Hope interview podcast](#), we invite scientists and technologists to explore how to accelerate humanity towards desirable long-term futures. All episodes are accompanied by a full transcript of the conversation, recommended books and articles, NFTs and bounties. Find all of them on our [podcast-page](#)!



**EXISTENTIAL HOPE PODCAST:
CHRISTINE PETERSON | ON A
POSITIVE TURNING POINT FOR
HUMAN LONGEVITY**

[▶ LISTEN NOW](#)



**EXISTENTIAL HOPE PODCAST:
ANTHONY AGUIRRE & ANNA
YELIZAROVA FROM FUTURE
OF LIFE INSTITUTE | ON
WORLDBUILDING**

[▶ LISTEN NOW](#)

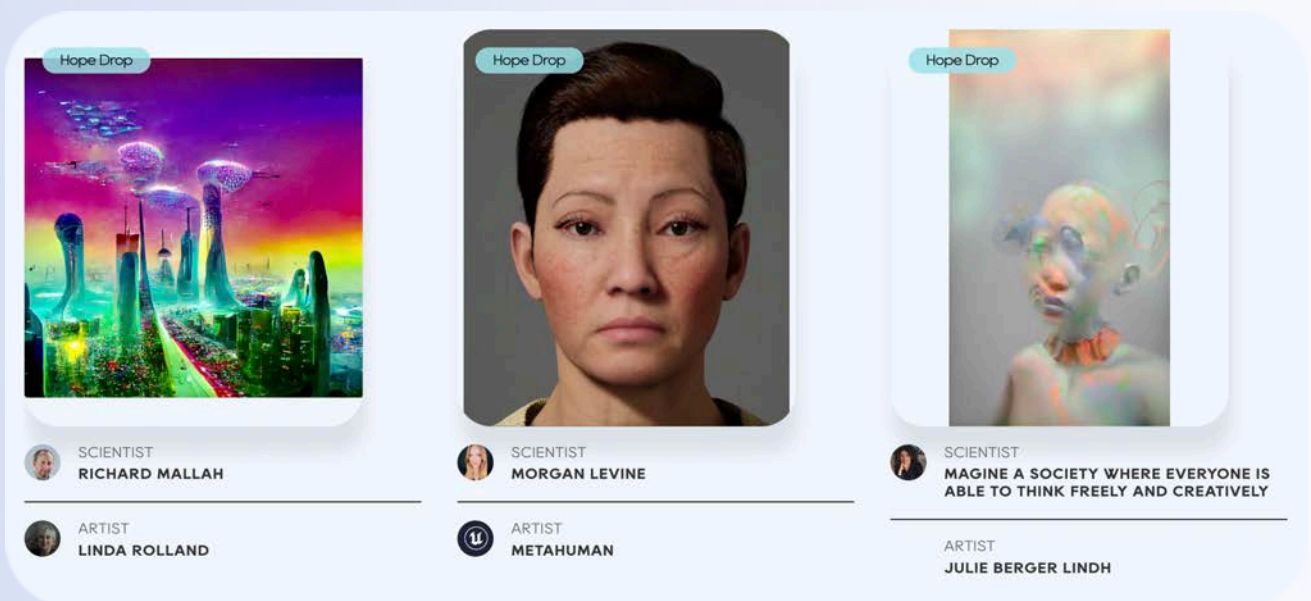
- [Chiara Marletto, Oxford Univeristy | On Existential Hope & Human Creativity](#)
- [Christine Peterson, Foresight Institute | On Existential Hope & Living Forever](#)
- [Anthony Aguirre & Anna Yelizarova | On Existential Hope, AI, and Worldbuilding](#)
- [Morgan Levine, Altos Labs | On Existential Hope & The Future of Aging](#)
- [Richard Mallah, Future of Life Institute | On Existential Hope & How Aligned AI Could Help The World](#)

We have also recorded a few more episodes of the podcast that are yet to be released with great minds such as [Adam Brown](#), [Creon Levit](#), [David Leigh](#), and [Robin Hanson](#). A few of the already confirmed guests ahead include Anders Sandberg, David Deutsch, Kevin Kelly, and Sara Walker.

2 Beneficial Futures

Xhope

- Xhope Gallery: Inspired by the question we ask in the Existential Hope podcast; “What would be an example of a *eucatastrophic* (the opposite of a catastrophe, i.e. an event after which the expected value of the world would be much higher) event for you?” We use the answers we get to this question as a prompt to create an Existential Hope story about a day in a life in this future world, and create an NFT art piece for visualizing it.



- The above art pieces are inspired by the prompts (in order) to imagine a world where we have “truly scientifically proven that we’ve taken someone back 10 years in aging” (Morgan Levine), “revived a dog from the dead with cryonics” (Christine Peterson), “transitioned into a society where everyone is able to think freely and creatively and not being worried about survival” (Chiara Marletto), “collectively agreed on more ethical practices around the proceeds of AI” (Anna Yelizarova), and “have widespread availability of personal AI assistants that empowers and assists individuals in achieving their goals” (Anthony Aguirre).

2 Beneficial Futures

Xhope

2023

- In 2023 Foresight aims to increase our efforts on shortening the gap between the mainstream science/tech community and EA/longtermist ideas that we believe could be highly beneficial for differential technological progress. Our technical workshops are currently mainly attended by people operating in the "hard" tech/science field, but by being able to cover travel stipends to invite X-risk researchers to attend our workshops, and by exposing our [fellows](#) in the "hard" sciences & technologies to EA concepts, we hope to introduce longtermist ideas into scientific discussions and inform the longtermist dialogue with novel scientific facts & perspectives.
- Another big part of continuing to bridge this gap between the science and the X-risk community will be to include more risk researchers into our technical group tracks and have them attend our group calls. By doing this we hope we will be able to bring increased diversity, views & knowledge into efforts on minimizing existential risks. Do you have any suggestions of researchers you believe could be good additions to the group? Send an email to beatrice@foresight.org with a recommendation!

2 Beneficial Futures

Xhope

2023

- The Existential Hope Podcast will continue to produce monthly high quality episodes with exciting new guests. A few of the already confirmed guests for the 2023 program include David Deutsch, Kevin Kelly, and Sara Walker. The interviews will also yield new inspiring and hopeful NFT art pieces based on prompts from the interviewees visions of a positive future that will continue to build our Existential Hope gallery.
- Informed by the podcasts and website content, we are working on a book to establish Existential Hope as a concept when planning for our future. This book is the antidote to today's media that invokes doom, slow demise, catastrophe, and existential angst. It will instead show that the opposite path is possible, too! The book starts with a case for hope over despair, and sketches historical approaches for thinking about the long-term future to generate a modern approach for positive long-term thinking. We show how technologies that could break our future, could instead be used to make it, provided we overcome coordination traps, and instill hope in our everyday lives. The book is interactive: each chapter of the book will have QR codes linking to our Xhope podcasts, resources, and story prompts to encourage engagement and action.

2 Beneficial Futures

Gaming the Future

- Mark S. Miller, Christine Peterson, and Allison Duettmann released [Gaming the Future: Technologies for Intelligent Voluntary Cooperation](#). The book explores how cryptographic technologies can strengthen decentralized defenses against existential risks, improve human and AI cooperation, and increase civilization's superintelligence. The goal of the book is to wake up the next generation of computer scientists, economists, legal engineers, and policy makers to cryptography as a tool to be used over the outdated tool of law. Many of the goals we seek to achieve with law and regulation could be better achieved through cryptographic technologies which are copyable, automatable, cross-jurisdictionally applicable, secure, and incorruptible. By making an inspiring case for its long-term potential and suggesting concrete areas of focus, we hope to help nudge cryptography from an undervalued into a flourishing discipline.



**GAMING
THE FUTURE
THE BOOK !**



2 Beneficial Futures

Gaming the Future

- There are a few curious features about this book: to inform the ideas in the book, we invited core technology developers to give a keynote seminar on their work. These talks, for instance with Tyler Cowen, Robin Hanson, Peter Norvig, or Daniel Ellsberg are recorded and available on our [Youtube channel](#). We also published a [Substack](#) version of the book, including a monthly book club for core supporters, and bounties paying subscribers to contribute additional resources.
- In terms of media recognition, Gaming the Future made an appearance in [this Fintech News article](#), the authors were welcomed to the [Funding the Commons summit](#), held by Protocol Labs to discuss Voluntary Cooperation, and Allison Duettmann discussed Gaming the Future in this [Foresight's Crypto-economic Approaches to X-risk workshop](#) at EthDenver.

2023

- In 2023, we plan to release a Kindle e-book version, an audiobook, as well as a physical book (of which 500 special donor copies exist already). To reach our target audience, we will speak at relevant conferences, podcasts, and adjacent communities.

Summary

We have seen unprecedented growth in 2022 due to increased funding and interest in our areas. With our growing team, we hope to build on the foundation set in 2023 to expand our programs and deepen the support we can provide for nascent technological fields crucial for the long-term future.

In particular, we hope to strengthen the support of our community in advancing technological progress, while also increasing awareness and responsibility for the beneficial technologies they develop.

We have high ambitions for a big leap in empowering our community through its own funding architecture in the form of a fund or a DAO. At the same time, given the current global financial situation leading to an unpredictable budget, how much of our plans we are able to achieve is rather uncertain.

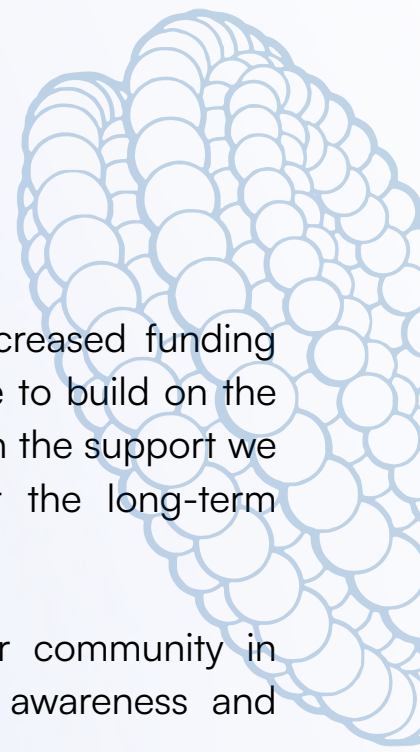
This means that your contribution matters a lot this year, it may make the difference in enabling us to continue to grow a community of technologists committed to beneficial futures, or scale down the hard efforts we made this year.

We accept tax-exempt [check, Stripe, wire and crypto donations](#) and hope you join us in advancing flourishing futures in 2023.

Please reach out to a@foresight.org with individual ideas for collaboration!

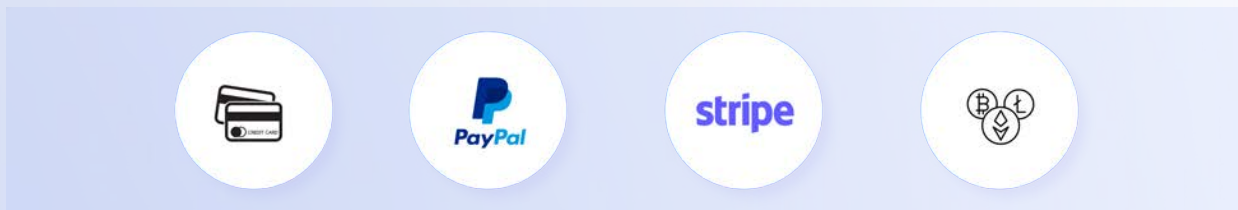
Best,

Your Foresight team



Fund beneficial futures & join !

As a donor, you [fund the beneficial development of science](#) and technology that is too ambitious to be supported via legacy institutions.

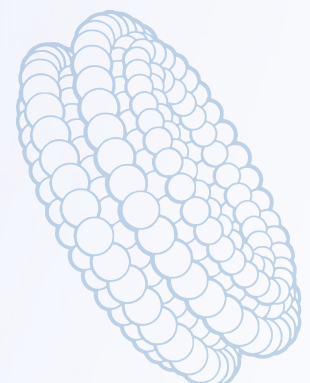


Depending on your preference, we hold or liquidate crypto donations. Feel free to contact us via [Protonmail](#) to work out alternatives, e.g. anonymized crypto donations, wire transfers, or to donate stock.

For check donations, our address is:

The Foresight Institute
 101A Clay Street, Box 185
 San Francisco, CA 94111

Thank you on behalf of our staff, board, and volunteers. We really appreciate your support.



**Thank you for
advancing the
beneficial
development of
crucial technologies
with us.**

