Annexe: The Emerging X-Risk Eco-System

Introduction

We have watched the development of this all-important thinking that started with books from Sir Martin Rees *Our Final Century*? *Will the Human Race Survive the Twenty-First Century?* (Published 2003) and from James Martin, *The Meaning of the 21st Century: A Vital Blueprint for Ensuring our Future (*Published 2006).

Neither thought leader stopped with the publication of their books. Sir Martin Rees created the *The Centre for the Study of Existential Risk* (CSER) at Cambridge University a time when there were more academic studies on snowboarding than there were on existential risk and James Martin contributed $150 million to Oxford University to create the *Oxford Martin School* of the 21st Century.

In 2015, Max Tegmark created the *Future of Life Institute* at MIT with a $10 million donation from Elon Musk. Two years later he published a book, *Life 3.0* where in one sentence he sums up today's paramount educational challenge: *"*Technology is giving life the potential to flourish live never before – or to self-destruct."

In view of the challenges in front of us, one might have expected this ecosystem to develop more rapidly. However, as Elon Musk makes clear in this video, humanity has not really evolved to think about existential threats in general.

https://www.youtube.com/watch?v=CBdgWzyVyKg

He explains that we've evolved to think about things that are very close to us, near term, to be upset with other humans and not ready to think about the things that could destroy humanity as a whole.

"Its obvious we are not paying attention. We are more worried about the name somebody called someone else rather than whether AI will destroy humanity. We are like children in a playground."

The X-Risk Ecosystem has grown rapidly at university level. Please see below our first crack at cataloging the X-Risk ecosystem. Please note this is a first draft all new suggestions are welcome.

In 1934, John Dewey wrote that, "Any education is, in its forms and methods, an outgrowth of the needs of the society in which it exists."

There can be no doubt but that the needs of the citizens of the planet earth are aligned and one. We need to urgently create pathways that pull humanity back from the accelerating existential risks waiting for us on the precipice of self-extinction and create a new ethos, a new story that takes us past those risks to an age of abundance. This is all possible if we simply all learn how to get along.

One World is committed to working with the X-Risk Eco-System emerging at the university level to help humanity to build the needed wisdom and ethos needed to understand, manage and shape our new Promethean powers.

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Oxford #1: The Future of Humanity Institute:

https://www.fhi.ox.ac.uk/

FHI is a multidisciplinary research institute at the University of Oxford. Academics at FHI bring the tools of mathematics, philosophy and social sciences to bear on big-picture questions about humanity and its prospects. The Institute is led by Founding Director Professor Nick Bostrom.

https://en.wikipedia.org/wiki/Future_of_Humanity_Institute

The **Future of Humanity Institute** (**FHI**) is an interdisciplinary research centre at the University of Oxford investigating big-picture questions about humanity and its prospects. It was founded in 2005 as part of the Faculty of Philosophy and the Oxford Martin School.[1] Its director is philosopher Nick Bostrom, and its research staff include futurist Anders Sandberg and Giving What We Can founder Toby Ord.[2]
Sharing an office and working closely with the Centre for Effective Altruism, the institute's stated objective is to focus research where it can make the greatest positive difference for humanity in the long term.[3][4] It engages in a mix of academic and outreach activities, seeking to promote informed discussion and public engagement in government, businesses, universities, and other organizations. The centre's largest research funders include Amlin, Elon Musk, the European Research Council, Future of Life Institute, and Leverhulme Trust

History[edit]

Nick Bostrom established the institute in November 2005 as part of the Oxford Martin School, then the James Martin 21st Century School.[1] Between 2008 and 2010, FHI hosted the Global Catastrophic Risks conference, wrote 22 academic journal articles, and published 34 chapters in academic volumes. FHI researchers have been mentioned over 5,000 times in the media[6] and have given policy advice at the World Economic Forum, to the private and non-profit sector (such as the Macarthur Foundation, and the World Health Organization), as well as to governmental bodies in Sweden, Singapore, Belgium, the United Kingdom, and the United States. Bostrom and bioethicist Julian Savulescu also published the book *Human Enhancement* in March 2009.[7] Most recently, FHI has focused on the dangers of advanced artificial intelligence (AI). In 2014, its researchers published several books on AI risk, including Stuart Armstrong's *Smarter Than Us* and Bostrom's *Superintelligence: Paths, Dangers, Strategies*.[8][9]
In 2018, Open Philanthropy recommended a grant of up to approximately £13.4 million to FHI over three years, with a large portion conditional on successful hiring.[10]

Existential risk[edit]

Main article: Existential risk
The largest topic FHI has spent time exploring is global catastrophic risk, and in particular existential risk. In a 2002 paper, Bostrom defined an "existential risk" as one "where an adverse outcome would either annihilate Earth-originating intelligent life or permanently and drastically curtail its potential".[11] This includes scenarios where humanity is not directly harmed, but it fails to colonize space and make use of the observable universe's available resources in humanly valuable projects, as discussed in Bostrom's 2003 paper, "Astronomical Waste: The Opportunity Cost of Delayed Technological Development".[12]
Bostrom and Milan Ćirković's 2008 book *Global Catastrophic Risks* collects essays on a variety of such risks, both natural and anthropogenic. Possible catastrophic risks from nature include super-volcanism, impact events, and energetic astronomical events such as gamma-ray bursts, cosmic rays, solar flares, and supernovae. These dangers are characterized as relatively small and relatively well understood, though pandemics may be exceptions as a result of being more common, and of dovetailing with technological trends.[13][4]

Synthetic pandemics via weaponized biological agents are given more attention by FHI. Technological outcomes the institute is particularly interested in include anthropogenic climate change, nuclear warfare and nuclear terrorism, molecular nanotechnology, and artificial general intelligence. In expecting the largest risks to stem from future technologies, and from advanced artificial intelligence in particular, FHI agrees with other existential risk reduction organizations, such as the Centre for the Study of Existential Risk and the Machine Intelligence Research Institute.[14][15] FHI researchers have also studied the impact of technological progress on social and

institutional risks, such as totalitarianism, automation-driven unemployment, and information hazards.[4]
In 2020, FHI Senior Research Fellow Toby Ord published his book *The Precipice: Existential Risk and the Future of Humanity*, in which he argues that safeguarding humanity's future is among the most important moral issues of our time.[17][18]

Anthropic reasoning[edit]

Main article: Anthropic principle
FHI devotes much of its attention to exotic threats that have been little explored by other organizations, and to methodological considerations that inform existential risk reduction and forecasting. The institute has particularly emphasized anthropic reasoning in its research, as an under-explored area with general epistemological implications.

Anthropic arguments FHI has studied include the doomsday argument, which claims that humanity is likely to go extinct soon because it is unlikely that one is observing a point in human history that is extremely early. Instead, present-day humans are likely to be near the middle of the distribution of humans that will ever live.[13] Bostrom has also popularized the simulation argument.
A recurring theme in FHI's research is the Fermi paradox, the surprising absence of observable alien civilizations. Robin Hanson has argued that there must be a "Great Filter" preventing space colonization to account for the paradox. That filter may lie in the past, if intelligence is much more rare than current biology would predict; or it may lie in the future, if existential risks are even larger than is currently recognized.

Human enhancement and rationality[edit]

Closely linked to FHI's work on risk assessment, astronomical waste, and the dangers of future technologies is its work on the promise and risks of human enhancement. The modifications in question may be biological, digital, or sociological, and an emphasis is placed on the most radical hypothesized ch
anges, rather than on the likeliest short-term innovations. FHI's bioethics research focuses on the potential consequences of gene therapy, life extension, brain implants and brain–computer interfaces, and mind uploading.[19]
FHI's focus has been on methods for assessing and enhancing human intelligence and rationality, as a way of shaping the speed and direction of technological and social progress. FHI's work on human irrationality, as exemplified in cognitive heuristics and biases, includes an ongoing collaboration with Amlin to study the systemic risk arising from biases in modeling.[20][21]

Selected publications[edit]

- Toby Ord: *The Precipice: Existential Risk and the Future of Humanity*, 2020. ISBN 1526600218
- Nick Bostrom: *Superintelligence: Paths, Dangers, Strategies*, 2014. ISBN 0-415-93858-9
- Nick Bostrom and Milan Cirkovic: *Global Catastrophic Risks*, 2011. ISBN 978-0-19-857050-9

- Nick Bostrom and Julian Savulescu: *Human Enhancement*, 2011. ISBN 0-19-929972-2
- Nick Bostrom: *Anthropic Bias: Observation Selection Effects in Science and Philosophy*, 2010. ISBN 0-415-93858-9
- Nick Bostrom and Anders Sandberg: *Brain Emulation Roadmap*, 2008.

Oxford #2: The Global Priorities Institute

https://globalprioritiesinstitute.org/
https://www.philosophy.ox.ac.uk/global-priorities-institute
https://forum.effectivealtruism.org/topics/global-priorities-research

What is Longtermism? https://globalprioritiesinstitute.org/what-is-longtermism/

Longtermism, aggregation, and catastrophic risk
Emma J. Curran (University of Cambridge) GPI Working Paper No. 18-2022
https://globalprioritiesinstitute.org/longtermism-aggregation-and-catastrophic-risk-emma-j-curran/

Oxford #3: Oxford Martin School of the 21st Century

https://www.oxfordmartin.ox.ac.uk/

WHAT IS THE OXFORD MARTIN SCHOOL?
No other university in the world hosts a research organization like the Oxford Martin School.
Humanity stands at a crossroads; the sheer speed of change across sectors and systems, including technology, population, health and climate, means that we now have the power to destroy possibilities for future generations. Equally, we have the potential to dramatically improve the wellbeing of people across the planet.
It is this combination of urgency and optimism that characterizes all our work at the Oxford Martin School.

Our academics work across more than 30 solutions-focused, pioneering research programmes that cut across disciplines to find solutions to the world's most urgent challenges. From renewable energy to ocean sustainability, and from the future of work to tackling inequality, we foster ground-breaking collaborations between researchers working at the frontiers of knowledge. The unifying theme is that the research must be of the highest academic calibre, tackle issues of global significance, and could not have been undertaken without our support.
Underpinning all our research is the need to translate academic excellence into real-world impact, from innovations in science, medicine and technology, through to expert advice and policy recommendations.
http://www.cleverpaper.co.uk/oxford_martin/mobile/index.html#p=1

Cambridge University

Cambridge #1: Centre for the Study of Existential Risk

https://www.cser.ac.uk/

Our primary aims are:
(i) to study extreme risks associated with emerging and future technological advances, and global anthropogenic impacts, with the goal of understanding these risks, and developing prevention and mitigation strategies for specific risks.
(ii) to develop a methodological toolkit to aid us in identifying and evaluating future extreme technological risks (ETRs) in advance, and in taking the necessary steps ahead of time.
(iii) to examine issues surrounding the perception and analysis of these risks in the scientific community, the public and civil society, and develop strategies for working fruitfully with industry and policymakers on avoiding risks while making progress on beneficial technologies.
(iv) to foster a reflective, interdisciplinary, global community of academics, technologists and policymakers examining individual aspects of ETR, but coming together to integrate their insights.
(v) to focus in particular on risks that are (a) globally catastrophic in scale (b) plausible but poorly characterized or understood (c) capable of being studied rigorously or addressed (d) clearly play to CSER's strengths (interdisciplinarity, convening power, policy/industry links) (e) require long-range thinking. In other words, extreme risks where we can really expect to achieve something.

Cambridge #2: CRASSH - Centre for Research in the Arts, Social Sciences and Humanities - Cambridge

https://www.crassh.cam.ac.uk/

About CRASSH

The Centre for Research in the Arts, Social Sciences and Humanities (CRASSH) was established in 2001, with the objective of creating interdisciplinary dialogue across the many departments and faculties of the School of Arts and Humanities and the School of Humanities and Social Sciences, and to forge connections with science subjects. Since then, CRASSH has grown into one of the largest humanities institutes in the world, with a global reputation for excellence.

CRASSH's mission is to promote and support research innovation in the arts, humanities, and social sciences. It equips researchers to design and lead ambitious, interdisciplinary projects that make significant contributions to knowledge and bring effective social change. It champions research that experiments with creative forms of communication, explores inclusive forms of collaboration with a wide range of practitioners and participants, and engages with new publics in the UK and across the world. CRASSH also provides a space in which researchers from many different disciplinary backgrounds come together to think creatively and critically about the ethics and politics of research.

CRASSH hosts a broad range of research projects and centres as well as postdoctoral researchers working on individual projects. It runs a series of events and initiatives that facilitate connections between researchers across many different disciplines, bringing these together with practitioners and participants from other sectors of society. Its research networks bring together Cambridge postgraduate students, postdocs and established academic staff across a range of disciplines in a varied programme of seminars, reading groups, workshops and other activities that run throughout the year. CRASSH runs several fellowship schemes designed both for early career scholars at Cambridge and for visiting scholars from around the world.

Open Philanthropy

https://www.openphilanthropy.org/

Cambridge #3: Kavli Center

- Cambridge University - Strengthen the social contract between scientific communities and diverse publics

https://www.kcesp.ac.uk/

The aims of the Kavli Centre for Ethics, Science, and the Public are to:

- Strengthen the social contract between scientific communities and diverse publics
- Engage public audiences at early stages in deliberating the ethical implications of science
- Deliver innovative and creative interactions with public audiences to achieve excellence in engagement

Recognising that both ‘the public’ and ‘scientists’ are mixed groups with many communities, values and interests, the Centre will pursue new ways to build bridges between….

- Public audiences
- Scientists
- Public engagement and communication professionals
- Ethicists
- Social scientists
- Community groups
- Health Professionals

Cambridge #4: David Kruger’s Lab at Cambridge University

https://www.kcesp.ac.uk/aboutthecentre/meet-the-team/

I am an Assistant Professor at the University of Cambridge and a member of Cambridge's Computational and Biological Learning lab (CBL) and Machine Learning Group (MLG). My research group focuses on Deep Learning, AI Alignment, and AI safety. I’m broadly interested in work (including in areas outside of Machine Learning, e.g. AI governance) that could reduce the risk of human extinction (“x-risk”) resulting from out-of-control AI systems. Particular interests include:

- Reward modeling and reward gaming
- Aligning foundation models
- Understanding learning and generalization in deep learning and foundation models, especially via “empirical theory” approaches
- Preventing the development and deployment of socially harmful AI systems
- Elaborating and evaluating speculative concerns about more advanced future AI systems

Note: when contacting me for feedback or to express interest in collaboration, etc., it's helpful to say if you're happy for me to share your message with my research group.

https://www.davidscottkrueger.com/

- David Krueger's lab at the University of Cambridge

News:

- Two papers accepted at ICLR 2023: “Broken Neural Scaling Laws” and "Metadata Archaeology: Unearthing Data Subsets by Leveraging Training Dynamics (Spotlight!).

- Henry Ashton has joined the group as a post-doc.
- Our paper "Defining and Characterizing Reward Hacking" was accepted at NeurIPS 2022.
- Our paper "Objective Robustness in Deep Reinforcement Learning" was accepted at ICML 2022.
- Usman Anwar, Stephen Chung, and Bruno Mlodozeniec have joined the group as PhD students.
- We've received a $1m grant from the Open Philanthropy Project to study Reward Model Hacking.

Cambridge #5: Cambridge Conservation Initiaitive

Collaborating to Conserve Biodiversity

The Cambridge Conservation Initiative (CCI) is a unique collaboration between the University of Cambridge and ten leading internationally focused biodiversity conservation organizations.
Based in the David Attenborough Building, Cambridge, UK, the CCI partners represent the largest cluster of conservation organizations in the world.
Our strong convening power allows us to directly engage with a wide audience globally, from leaders in government, business, academic and NGO communities to the general public.
CCI's work spans disciplines, organizations and continents. As a global network of leaders in research, education, policy and practice we are fostering a greater awareness of conservation issues, and accelerating positive change towards sustainable living.
"The future of our life on Earth is dependent on the natural world. In this remarkable age we are learning more and more about the intricacies of our dependence on nature. Yet our natural world is threatened as never before, and no one institution, however effective, can hope to address all these threats alone.
It is for this reason that the work of the Cambridge Conservation Initiative is so exceptional. By bringing together leaders in research, practice, policy and teaching, we stand the greatest chance of developing the solutions required to save our planet."
– Sir David Attenborough, Honorary Patron, CCI

The importance of collaboration was clearly identified over a hundred years ago in 1859 by Charles Darwin (a Cambridge student) in "The Origin of Species "In The long history of humankind (and animal kind too), those who learned to collaborate… most effectively have prevailed".
Perhaps this was in mind when, in 2007, a group of leading conservation organizations together with the University of Cambridge agreed a new and transformational approach was needed to address the perilous state of global biodiversity. It is unlikely though that they imaged just how much could be achieved when they proposed a formal collaboration - the Cambridge Conservation Initiative.

The years between 2021 and 2030 are pivotal for the conservation of nature

The COVID-19 pandemic that started this decade was in part a manifestation of the impacts that people can have on nature. Now is the time in which damage to, and loss of, biodiversity needs to be reversed in order to secure a sustainable and healthy future for our planet. Many international agreements, plans and frameworks are targeting 2030 as the year by which significant change must be underway, including the Sustainable Development Goals, the post-2020 global biodiversity framework and the UN Decade on Ecosystem Restoration.

By 2030 we will have:

- Contributed extensively to the recovery of nature through restoration of landscapes, seascapes and ecosystem services, the recovery of threatened species and the building of a global cadre of conservationists who are ready for the challenges of the mid twenty-first century.
- Continued to test, improve and apply collaborative models for working within CCI and beyond to ensure the full and effective use of our collective resources.
- Strengthened the recognition of the David Attenborough Building as a global hub for conservation and a model for a living building.
- Developed deeper strategic collaborations with researchers, universities, governments, business, communities and conservation organizations to create dialogues that leverage actions and deliver solutions.

Priority areas of focus over the next decade

As part of our ecosystem of collaborative approaches, we have identified priority areas where we can deliver real change. We are focusing on immediate change, what we will deliver in the next decade, and preparing for long term responses, often intergenerational in their scope, that ensure a future where nature and society thrive.

MIT

MIT #1: Future of Life Institute MIT

Founder Max Tegmark author of Life 3.0

https://futureoflife.org/

https://futureoflife.org/project/future-of-life-institute-podcast/

General inquiries
contact@futureoflife.org

Steering transformative technology towards benefitting life and away from extreme large-scale risks.
We believe that the way powerful technology is developed and used will be the most important factor in determining the prospects for the future of life. This is why we have made it our mission to ensure that technology continues to improve those prospects.

The risks we focus on
We are currently concerned by **four major risks**. All four hinge on the development, use and governance of transformative technologies. We focus our efforts on guiding the impacts of these technologies.

Artificial Intelligence
From recommender algorithms to self-driving cars, AI is changing our lives. As the impact of this technology magnifies, so will its risks.

Biotechnology
From the accidental release of engineered pathogens to the backfiring of a gene-editing experiment, the dangers from biotechnology are too great for us to proceed blindly.

Nuclear Weapons
Almost eighty years after their introduction, the risks posed by nuclear weapons are as high as ever - and new research reveals that the impacts are even worse than previously reckoned.

Climate Change
Likely the most well-known of our cause areas, climate change increases the likelihood of other catastrophic risks, such as pandemics or war, as well as posing man.

MIT #2: Sculpting Evolution

Advancing Biotechnology Safely- MIT Media Lab

https://www.sculptingevolution.org/

Why Sculpt Evolution?

Evolution gave rise to every living thing and all of human culture, but evolved systems are very different from those designed by humans. They're harder to predict and to design, and exhibit a frustrating tendency to evolve away from engineered behaviors. At the same time, harnessing and directing evolution can generate useful organisms and molecular tools that we could never have rationally designed.

Our laboratory seeks to understand why systems evolve in the ways that they do, to develop tools capable of precisely intervening in the evolution of ecosystems, and to cultivate wisdom sufficient to know whether, when, and how to proceed.

We are committed biotechnologists who:

- Catalyze beneficial advances by applying robotics and machine learning to evolve new molecular tools and techniques
- Apply molecules, models, and cryptography to defend against pandemics and prevent the catastrophic misuse of biotechnology
- Work with the guidance of interested communities to safely and humanely edit wild populations and ecosystems

To learn more, dive into our research or publications, meet the group, read our philosophy, or donate to support our work.

Recent Lab News
14 November 2021

Let's assume there's a good chance that thousands of people will be able to start new pandemics within a decade. Several folks in our lab can generate infectious samples of many viruses from a genome sequence, so this seems sadly plausible. What to do?

- *Delay* proliferation and misuse to buy time
- *Detect* subtle threats reliably and early
- *Defend* by blocking infections outright

Pandemic proliferation is a solvable problem. We now have a roadmap detailing what to do. The question is whether we'll actually do it.

(Compressed scientific version)

Our goal is to thoughtfully ascend the tree of knowledge. We must accelerate our harvest of beneficial technological fruits to sustain, protect, and improve civilization, while refraining from exploring branches harboring advances so powerful and accessible that they pose catastrophic risks. In other words, we must learn to sculpt the evolution of biotechnology.

People:

Kevin M. Esvelt is an associate professor at the MIT Media Lab, where he leads the Sculpting Evolution Group in advancing biotechnology safely.

He received his Ph.D. from Harvard University for inventing a synthetic microbial ecosystem to rapidly evolve useful biomolecules, and subsequently helped pioneer the development of CRISPR, a powerful new method of genome engineering.

In 2013, Esvelt was the first to identify the potential for CRISPR “gene drive” systems to alter wild populations of organisms. Recognizing the implications of an advance that could enable

individual scientists to alter the shared environment, he and his colleagues chose to break with scientific tradition by revealing their findings and calling for open discussion and safeguards before building the first CRISPR-based gene drive system and demonstrating reversibility in the laboratory.

An outspoken advocate of sharing research plans to accelerate discovery and improve safety, Esvelt's MIT lab seeks to accelerate beneficial advances while safeguarding biotechnology against mistrust and misuse. Projects include building catalytic platforms for directed evolution, pioneering new ways of developing ecotechnologies with the guidance of local communities, developing early-warning systems to reliably detect any catastrophic biological threat, applying cryptographic methods to enable secure and universal DNA synthesis screening, and advising policymakers on how best to mitigate global catastrophic biorisks.

His work has been published in *Nature* and *Science*, covered by the *New York Times* and *Washington Post*, and featured on *Last Week Tonight* and the Netflix special *Unnatural Selection*.

Sculpting Evolution is grateful for support from the MIT Media Lab, the Burroughs Wellcome Fund (IRSA), an NSF CAREER award, the Rainwater Foundation, the DALHAP Foundation, the Musk Foundation, Affinity Wealth Management, Reid Hoffman, and the Open Philanthropy Project. We are very grateful for both public and private support and pledge to use it wisely.

UC Berkeley

Berkeley #1: Berkeley Existential Risk Initiative

https://existence.org/

Mission

BERI is an independent 501(c)(3) public charity. Our mission is to improve human civilization's long-term prospects for survival and flourishing. Currently, our main strategy is collaborating with university research groups working to reduce existential risk ("x-risk"), by providing them with free services and support.
What we do:

We try to help each of our collaborators work more effectively by spending money to support them in whatever way they need to pursue their mission (which we've vetted for relevance to our mission). The idea is to make operations faster and more flexible for these groups—not only to make them more directly effective, but also to improve morale by unblocking tasks and projects they care about that are hard to do efficiently through other means (e.g. existing university administration channels).
Currently, our main collaborators are:

- CHAI — the Center for Human Compatible AI at UC Berkeley
- CSER — the Centre for the Study of Existential Risk at Cambridge University
- FHI — the Future of Humanity Institute at Oxford University
- SERI — the Stanford Existential Risks Initiative
- ALL — the Autonomous Learning Laboratory at UMass Amherst
- The Sculpting Evolution Group at the MIT Media Lab
- InterACT — the Interactive Autonomy and Collaborative Technologies Laboratory at UC Berkeley
- David Krueger's lab at the University of Cambridge

We think of these organizations and their surrounding networks as forming what we call "the x-risk ecosystem"— a network of think tanks, non-profits, individual researchers, philanthropists, and others, all working to reduce existential risk.
Our goal is to support this ecosystem by providing a source of flexible funding and helpful services to support its most important and neglected projects. By finding and solving problems that are common across organizations, we hope to add another vector of coordination to the x-risk ecosystem, accelerating humanity's progress toward eliminating existential risks.

Berkeley #2: Center for Human Compatible AI

UC Berkley
https://humancompatible.ai/

About

CHAI is a multi-institution research group based at UC Berkeley, with academic affiliates at a variety of other universities.
Mission
CHAI's goal is to develop the conceptual and technical wherewithal to reorient the general thrust of AI research towards provably beneficial systems.
Artificial intelligence research is concerned with the design of machines capable of intelligent behavior, i.e., behavior likely to be successful in achieving objectives. The long-term outcome of AI research seems likely to include machines that are more capable than humans across a wide range of objectives and environments. This raises a problem of control: given that the solutions developed by such systems are intrinsically unpredictable by humans, it may occur that some such solutions result in negative and perhaps irreversible outcomes for humans. CHAI's goal is to ensure that this eventuality cannot arise, by refocusing AI away from the capability to achieve arbitrary objectives and towards the ability to generate provably beneficial behavior. Because the meaning of beneficial depends on properties of humans, this task inevitably includes elements from the social sciences in addition to AI.
Find out more about the people who work with and at CHAI here

Partners
The Center for Human-Compatible AI is sponsored by Open Philanthropy, the Future of Life Institute, the Leverhulme Trust, and CITRIS. Our partner organizations include the Leverhulme Centre for the Future of Intelligence, the Center for Long-Term Cybersecurity, the Berkeley Existential Risk Initiative, Kavli Center and ICT4Peace.

Berkeley #3: BAIR: Berkeley Artificial Intelligence Research Lab

https://bair.berkeley.edu/

The Berkeley Artificial Intelligence Research (BAIR) Lab brings together UC Berkeley researchers across the areas of computer vision, machine learning, natural language processing, planning, control, and robotics. BAIR includes over 50 faculty and more than 300 graduate students and postdoctoral researchers pursuing research on fundamental advances in the above areas as well as cross-cutting themes including multi-modal deep learning, human-compatible AI, and connecting AI with other scientific disciplines and the humanities.

People:

https://bair.berkeley.edu/faculty.html

Berkeley #4: InterACT Lab

Berkeley

https://interact.berkeley.edu/people.html

Welcome to the Interactive Autonomy and Collaborative Technologies Laboratory at UC Berkeley! Our goal is to enable robots to work with, around, and in support of people. We focus on algorithms for human-robot interaction -- algorithms that move beyond the robot's *function* in isolation, and generate robot behavior that also accounts for *interaction and coordination* with end-users. We work across different applications, from assistive robots, to manufacturing, to autonomous cars, and draw from optimal control, planning, estimation, learning, and cognitive science.

We are part of the Berkeley AI Research (BAIR) Lab and the Center for Human-Compatible AI.

Berkeley #5: CITRIS

https://citris-uc.org/

Mission and History

The Center for Information Technology Research in the Interest of Society and the Banatao Institute (CITRIS) create information technology solutions for society's most pressing challenges.

The Center for Information Technology Research in the Interest of Society and the Banatao Institute (CITRIS) leverage the research strengths of the University of California campuses at Berkeley, Davis, Merced and Santa Cruz, and operate within the greater ecosystem of the University and the innovative and entrepreneurial spirit of Silicon Valley. We strengthen bridges between world-class laboratory research, state and national policymakers, and companies and startups creating new applications and reshaping entire industries. CITRIS and the Banatao Institute facilitate interdisciplinary work among hundreds of University of California faculty members, students, corporate partners and international institutions. Together with these public and private partners, we are shaping the future of technology in ways that cross traditional boundaries.

From concept to prototype, the CITRIS invention ecosystem includes competitive seed funding, specialized testbeds, the Berkeley Marvell Nanofabrication Laboratory at CITRIS, the CITRIS Invention Lab and the CITRIS Foundry.

We bring the expertise of multiple disciplines to bear on critical challenges such as designing sustainable energy, water and transportation systems; improving the human experience with robotics and inclusive intelligence; modernizing health care delivery; fostering responsible tech policy; promoting diverse perspectives; and examining the future of work and the global economy in the age of automation.

CITRIS and the Banatao Institute represent a bold and exciting vision that engages one of the top university systems in the world to generate social and economic benefits.

History

Since its creation in 2001 as one of Governor Gray Davis' institutes for science and innovation at the University of California, CITRIS has demonstrated an impressive return on investment by any measure. Through collaboration with industry, government agencies, and international partners, CITRIS has enabled innovations in nanotechnology, computer science, engineering, manufacturing, social media and other sectors. Notable contributions include the California

Telehealth Network, the Pacific Research Platform, the California Report Card citizen engagement platform, annual seed funding for interdisciplinary research and more than 70 high-tech startup ventures.

In 2016, we recognized the Banatao Institute as an integral part of our affiliated UC campuses. In alignment with the goals and values of Dado and Maria Banatao, the Banatao Institute at CITRIS leverages the University of California expertise and IT solutions for the benefit of developing regions in the United States and abroad. This widening sphere of influence is celebrated in our name, "CITRIS and the Banatao Institute."

Governor Gray Davis Institutes for Science & Innovation

In 2000, the California governor's office launched four visionary Institutes for Science and Innovation. The institutes share a vital mission: to address large-scale societal problems through interdisciplinary research and new market applications.

The state of California, the University of California and hundreds of leading businesses joined together in an unprecedented partnership to lay the foundation for California's future economic and social development. These multicampus institutes are opening doors to a new understanding, new solutions and new applications through essential research in biomedicine, bioengineering, nanosystems, telecommunications and information technology.

In addition to the Center for Information Technology in the Interest of Society and the Banatao Institute (CITRIS), the other three institutes are:

- The California Institute for Quantitative Biosciences (QB3) at UC Berkeley, UC Santa Cruz and UCSF; dedicated to advancing our understanding of biological systems at all levels of complexity.
- The California Institute for Telecommunications and Information Technology (CalIT2) at UC Irvine and UC San Diego; focused on breakthroughs in telecommunications and information technology infrastructures.
- The California NanoSystems Institute (CNSI) at UCLA and UC Santa Barbara; enabling rapid commercialization of discoveries in nanoscience and nanotechnology.

The Banatao Institute

The Banatao Institute is an integral part of our affiliated UC campuses. By extending the reach of our core initiatives and assets, the Banatao Institute's programs foster the exchange of best practices, create opportunities, and highlight successes in areas of global relevance. As the world grows smaller and more interconnected each day, the challenges of education, health, civic engagement, economic growth, and technology development in low-resource areas become more pressing. Great needs and opportunities exist in the development of sustainable systems to address intertwined issues of poverty and access to public resources such as clean air, clean water, energy, and reliable cyberinfrastructure.

This widening sphere of influence was celebrated with a new name, "CITRIS and the Banatao Institute," which debuted across the four campuses in fall 2016. In alignment with the founding goals and values of Dado and Maria Banatao, the Banatao Institute at CITRIS leverages the University of California expertise and IT solutions for the benefit of developing regions in the United States and abroad.

Dado & Maria Banatao

Dado Banatao is a successful venture capitalist and Silicon Valley technology visionary who pioneered the personal computer (PC) chip set and graphics acceleration architecture, two foundation technologies that are still found in every PC. Dado serves on the CITRIS Advisory Board and the Berkeley Engineering Advisory Board. His wife, Maria, is a UC Berkeley Foundation Trustee, and their three children have all earned UC Berkeley degrees.

In recognition of their early cornerstone commitment to CITRIS and their ongoing leadership, the four-campus collaboration was named the Banatao Institute at CITRIS.

In addition to supporting CITRIS, the Banataos have passionately supported education throughout the world. With that in mind, the Dado & Maria Banatao Center for Global Learning and Outreach from Berkeley Engineering (GLOBE) was established to bring "the world's best to Berkeley Engineering and to bring Berkeley Engineering's best to the world." GLOBE fulfills this mission by establishing and supporting extensive educational and research programs with international partner universities.

Berkeley #6: Center for Long-Term Cybersecurity (CLTC)

https://cltc.berkeley.edu/about-us/

Amplifying the upside of the digital revolution

As digital technology continues to transform our society, vital questions remain around privacy, online safety, and the security of our networks and data. We must stay ahead of these questions and stop playing catch-up. We need to think ahead to anticipate tomorrow's digital security challenges, and ensure that everyone can safely benefit from what technology has to offer.

WHO WE ARE

Learn more about CLTC:

- Our Values
- People
- Jobs at CLTC
- Contact Us

At the Center for Long-Term Cybersecurity (CLTC), our mission is to amplify the upside of the digital revolution, help decision-makers act with foresight, and expand who has access to and participates in cybersecurity. Housed in the University of California, Berkeley, the #1 public university in global rankings, we work on multiple fronts to anticipate the cyber challenges of the future — and articulate solutions that allow the world to adapt and prepare.

WHAT WE DO

CLTC acts as a convening platform, translator, and two-way bridge between cutting-edge academic research and the needs of decision-makers in government, industry, and civil society. **We are:**

Shaping the future of digital security: From California to Capitol Hill, we help leaders stay ahead of changing policy needs in emerging areas like data and privacy regulation. Through the AI Security Initiative (AISI) and AI Policy Hub, we help artificial intelligence practitioners and decision-makers ensure that AI is used safely and securely around the world.

Advancing cutting-edge research: We have launched dozens of multidisciplinary research initiatives on cutting-edge topics related to cybersecurity, including the Internet Atlas, a first-of-its-kind analysis of structural risks to the global internet.

Helping industry partners look over the horizon: From Atlassian to Zoom, we collaborate with private-sector partners on future-focused research, addressing topics like board governance of cybersecurity and cyber risk in mergers and acquisitions. Our Cybersecurity Futures scenarios help business leaders around the world anticipate and prepare for emerging challenges.

Preparing the next generation of cybersecurity professionals: We partner closely with UC Berkeley's School of Information and its Master of Information and Cybersecurity Program to prepare students, faculty, and collaborators to assume leadership positions across sectors.

Growing diversity in the field: We are focused on making cybersecurity more inclusive, including through a partnership with Cyversity, an organization dedicated to increasing representation of women and underrepresented minorities in the field.

Forging new models for cybersecurity training: We created the world's first public-interest cybersecurity clinic — Citizen Clinic — that deploys UC Berkeley students from diverse disciplines to help civil-society organizations at risk of cyberattack and disinformation campaigns. Through the global Consortium of Cybersecurity Clinics, we are expanding this groundbreaking model worldwide.
Illuminating the cultural dimensions of cybersecurity: We bring to light often neglected cultural dimensions of cybersecurity, including an arts grant program that expands how cybersecurity is understood, and role-playing card games that demystify the actors behind cyber threats.

WHY WE NEED YOU

Private philanthropy directly fuels our mission to amplify the upside of the digital revolution. Together, we can advance deliberate, future-oriented digital security efforts and secure a healthy long-term outlook for digital technology and its impact on human lives.
Individual Donors and Foundations: Donors to CLTC can catalyze original research that impacts the field of digital security policy and practice, and transforms the lives of our talented students. Investments in our core operations — or signature programs in AI, cybersecurity futures, clinics, or UC Berkeley-based research — help scale cybersecurity solutions for tomorrow's digital security problems.
Industry Affiliates and Partners: Our robust network of industry affiliates and partners gain access to our top-tier academic researchers and talented students, and have unique opportunities to engage with industry peers who recognize the imperative of CLTC's foresight focus.
Contact us to discuss CLTC affiliation, including structured benefits, such as early access research updates and interactive meetings and workshops, or to explore custom and/or consortium research opportunities.
We invite you to join our efforts to ensure a healthy and prosperous digital future for all of us.
For more information, contact:
Shanti Corrigan
Senior Director of Philanthropy
CLTC and the School of Information
510-693-8062 | California Relay Service 711(opens in a new tab)
shanti@berkeley.edu

Other Universities

OU #1: Stamford Existential Risks Initiative

https://seri.stanford.edu/

Our Mission

Founded in 2019, the Stanford Existential Risks Initiative is a collaboration between Stanford faculty and students dedicated to mitigating existential risks, such as extreme climate change, nuclear winter, global pandemics (and other risks from synthetic biology), and risks from advanced artificial intelligence. Our goal is to foster engagement from both within and beyond the Stanford community to produce meaningful work aiming to preserve the future of humanity. We aim to provide skill-building, networking, professional pathways, and community for students and faculty interested in pursuing existential risk reduction. Our current programs include a research fellowship, an annual conference, speaker events, discussion groups, and a frosh-year COLLEGE class, "Preventing Human Extinction," taught annually by two of the initiative's faculty directors.

What is an existential risk?
We think of existential risks, or global catastrophic risks, as risks that could cause the collapse of human civilization or even the extinction of the human species. Prominent examples of human-driven global catastrophic risks include 1) nuclear winter, 2) an infectious disease pandemic engineered by malevolent actors using synthetic biology, 3) catastrophic accidents/misuse involving AI, and 4) climate change and/or environmental degradation creating biological and physical conditions that thriving human civilizations would not survive. Other significant catastrophic risks exist as well.

Stanford Existential Risks Conference, April 20-22, 2023

From Global Catastrophes to Existential Risks: Intersections, Reinforcements, and Cascades
Sponsored by:
Stanford Existential Risks Initiative
The Center for International Security and Cooperation

https://docs.google.com/document/d/18lTtSAcDKaRVhtnmHcgFrPhyhMS-Dr0t4tOH3fLB3YQ/edit

Fellowships
The Stanford Existential Risks Initiative (SERI) postdoctoral fellows will develop and pursue independent research agendas addressing large-scale risks across any of the four research areas (advanced artificial intelligence, biological risks, nuclear risks, and extreme climate change), with a faculty member appointed to oversee and facilitate their research. Fellows will also contribute to SERI's mission by teaching courses centered on existential risk reduction, either teaching undergraduates and/or graduate courses that have been already developed, or by taking the opportunity to develop and teach an original course.
Appointment start date: 9/1/2023
About SERI
The **Stanford Existential Risks Initiative** (SERI) is a collaboration between Stanford faculty and students dedicated to mitigating global catastrophic risks, such as extreme climate change, nuclear winter, global pandemics (and other risks from synthetic biology), and risks from advanced artificial intelligence. Our goal is to foster engagement from both within and beyond

the Stanford community to produce meaningful work aiming to preserve the future of humanity. We plan to provide skill-building, networking, professional pathways, and community for students and faculty interested in pursuing existential risk reduction.

OU #2: Autonomous Learning Laboratory (ALL) at UMass Amherst

https://all.cs.umass.edu/

The **Autonomous Learning Laboratory (ALL)** conducts foundational **artificial intelligence** (AI) research, with emphasis on **AI safety** and **reinforcement learning** (RL), and particularly the intersection of these two areas.

The long-term goals of the laboratory are to develop more capable artificial agents, ensure that systems that use artificial intelligence methods are safe and well-behaved, improve our understanding of biological learning and its neural basis, and to forge stronger links between studies of learning by computer scientists, engineers, neuroscientists, and psychologists.

For an overview of the ML papers from UMass in 2021, see our 2021 retrospective here.

OU #3: Munich Center for Mathematical Philosophy

https://www.mcmp.philosophie.uni-muenchen.de/about/index.html

The principal aims of the MCMP are:

- To produce and disseminate original research of excellence that results from the application of mathematical methods within any area of philosophy and which gets published in international peer-reviewed journals or monographs.
- To support promising early career philosophers, as well as scientists who intend to turn to philosophy, to develop their interests and skills and to absorb examples of best research practice in collaboration with experts at the MCMP and at the Faculty of Philosophy, Philosophy of Science and the Study of Religion at the LMU Munich.
- To stimulate and coordinate work on mathematical philosophy worldwide through the invitation of visiting scholars, international networks, colloquia, conferences, and virtual collaboration and dissemination.
- To develop standing research liaisons with selected institutions of philosophical excellence worldwide.
- To foster collaboration with researchers from adjacent areas, such as cognitive science, computers science, economics, mathematics, neurosciences, statistics, and physics, whether internationally, within Germany, or locally in Munich.
- To communicate a sense of the goals, results and interest of our research to a non-professional audience.

OU #4: Kyoto University

https://www.kyoto-u.ac.jp/en/research/fields/graduate-schools/graduate-school-of-advanced-integrated-studies-in-human-survivability

The Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) offers a degree program that seamlessly combines master's and doctoral programs and covers a colorful array of areas of expertise. The program involves active collaboration with businesses, government agencies, and partner universities. By assembling leading instructors and students from Japan and abroad, the GSAIS will guide talented students to become leaders who, equipped with a broad perspective and originality, are ready to take on global challenges in their area of specialization, whether it be related to the private, public, or academic sectors. We aim to produce graduates who are capable of assuming responsibility as global leaders, combining a wide range of knowledge, high degree of expertise, flexible thinking, and practical skills with a high sense of mission and an ethical perspective.

Noteworthy features of the GSAIS include: (i) Lectures on integrated studies on human survivability and leadership training programs which help students develop a broad spectrum of knowledge and on-site problem solving capabilities, (ii) A one-year international internship during the program's 4th year, which enables students to develop the diverse abilities required to operate internationally, and (iii) Project-based research during the 5th year, in which students plan and carry out their own projects involving various resources in Japan and abroad.

www.gsais.kyoto-u.ac.jp

The Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) was launched in Kyoto University in the 2013 academic year. This is a 5-year Graduate School aiming to produce top-level global leaders who can resolve the complex and diversified social issues with a strong sense of responsibility, humanity and morality. Advanced Integrated Studies in Human Survivability is an integrated field of scholarship that studies the means to structuralize and communalize knowledge for human survivability. Through the studies at the GSAIS, students are expected to assume responsibility as global leaders and develop a high sense of mission and perspectives as well as highly developed management skills. The educational program at the GSAIS was originality initiated as the Leading Graduate School Program, which was supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). The education at the GSAIS is based on the traditional philosophy that learning occurs through hearing, thinking and practicing (a Buddhist term "mon-shi-shu" on which the program's name is based). Students are expected to enhance their ability to adopt an all-encompassing perspective across various fields by building a broad spectrum of professional learning, ranging from the humanities through sciences and based upon the body of academic knowledge acquired during undergraduate studies. The educational and research training is globally focused and is given mainly in English. The GSAIS curricula are tailor-made and are

constructed depending on the academic background and future goals of each student. Students also attend the debates that involve external lecturers from industry and government ("Industry-Government Cooperation Special Seminar "*Jukugi*").

Internships, fieldwork, and project-based research are important course requirements. Students undergo more than a half-year overseas internship with an international organization or overseas office of a Japanese organization. The internship program has become possible thanks to the kind collaboration of such organizations as UNESCO, OECD, JICA, and leading international companies and universities. The GSAIS accepts 20 students per year, keeping the student-to-instructor ratio very low. They live in a residential college on campus, which enhances the environment for learning by facilitating student interaction across disciplines, and faculty members are available onsite to provide necessary support and mentoring. Further, eligible students receive a scholarship from the University as well as a financial support for their research activities.

Developing Solid Expertise

Students must possess the ability as independent thinkers and be able to depend on themselves to develop as global leaders. True global leaders have a high level of academic expertise and produce research findings that will be highly regarded to wherever it may be of concern. To facilitate the process of development in becoming such a leader, the GSAIS has created a program where: -Students follow a highly intensive two-year education program in their area of expertise during their first two years. -Students conduct solid research in their chosen field of research with multiple supervisors mentoring them throughout the process -Students develop their planning abilities, creativity, and confidence through their special research achievements.

At the GSAIS students are trained in reverse order in comparison to conventional education programs. Students enter their field of research in real society during their first two years before acquiring more academic knowledge. This contra-system makes it easier for students to develop flexible and creative thinking patterns. The type of thinking that helps them to cultivate the type of sensitivity required for developing solutions to global problems, which are inextricably complex and intertwined. Students develop a critical mindset acquired through practical training and service learning program in their first year. They then select a research theme followed by designing a curriculum that supports this while keeping in mind their personal interests and future ambitions. While supported by the multiple supervisor system, students will follow integrated academic foundation lectures that are tailor-made to individual needs. -Each subject is taught didactically in accordance to each student`s area of expertise, background, curriculum and future ambitions. The GSAIS`s full-time faculty members and guest lecturers work as a team to design and implement the necessary curricula. -Each lecture is filmed and stored in a library so that future students of the program and those enrolled in other training courses may access them. -Lectures are given in English for many of the fields to assist students in operating and using their acquired knowledge internationally. -Lectures are held in the 8 fields of: Law and Politics, Medical and Life Science, Humanities and Philosophy, Science and Engineering, Art, Linguistics, Economics and Management, Informatics and Environmental Studies.

At the GSAIS, each student tailors their curriculum according to their own academic background, interests and future goals. Each student studies with a specific purpose in mind. Students receive advice and mentoring from two or more highly experienced professors, who help to systematically plan their program of study and academic research program. In addition to the customized curriculum, students can also take classes in major subjects offered by other graduate schools within Kyoto University

SELECTION OF 20 TALENTED STUDENTS

Each year GSAIS accepts 20 talented students to follow the Advanced Integrated Studies in Human Survivability program, where the student-to-instructor ratio is kept very low. The students live in a residential college on campus, thus enhancing the environment for learning and facilitating student interaction across disciplines. Faculty members are available onsite to provide necessary support and mentoring. F

STRONG EMPHASIS ON RESEARCH

We also believe that great research is at the heart of becoming a great leader. The Shishu-Kan aims to develop researcher-problem-solvers that can address contemporary issues facing humankind, social systems and the global community. Students are expected to hone their basic research skills through careful guidance and advice from a number of supervisors and professionals. They will learn to create the necessary models based on empirical knowledge gained from their research and experience both in Japan and abroad. Since the main aim is to develop individual leaders who can resolve global problems, research training is conducted primarily in the English language.

Nurturing talents who will change society

Sustainable development is a common desire we all share. In the world, however, there are plenty of problems that threaten the present and future of humankind, such as wars and conflicts, economic inequalities, climate change, natural disasters, environmental decline, pandemics, and increasing life expectancies concurrent with low birthrates. Our school, the Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS), was established in April 2013 with the aim of building “human survivability studies” to deal with these threats to the survival of mankind. Our mission is to nurture the talents who have the intention to help develop the field of human survivability studies and to become leaders with global perspectives.

In human survivability studies we aim to build an ensemble of practical studies to solve social problems. We believe that this goal is achieved only through a transdisciplinary approach and student-supervisor cooperation as equal partners. For this purpose, we promote learning in a diverse environment in transdisciplinary, intercultural, and international contexts. Here are some unique characteristics of GSAIS: a system of multiple supervisors, the “Learning Commons”

where students from different fields share the space and time together while conducting research, and the residential training facility where students from different research fields and cultures live, exchange different ideas and practices, and work hard together. Furthermore, "overseas internship", a mandatory course to be completed some time between the 3rd and 5th school years, provides an opportunity to live overseas and to be engaged in practical tasks so that one can obtain the ability to solve problems in a creative way with global perspectives. I am always impressed by the dramatic growth of students who have completed the overseas internship.

GSAIS initially began as a new graduate school to carry out an education program called "Shishu-Kan Program (adopted in 2012)" in the framework of "Program for Leading Graduate Schools" funded by MEXT. Consequently, Shishu-Kan became a nickname of our graduate school. The name comes from a Buddhist attitude for knowledge inquiry through three stages: Mon ("learn"), Shi ("think"), Shu ("practice"). The name "Shishu-Kan" represents our wish that students will go beyond just learning (Mon) and obtain the ability to think themselves (Shi) and implement practical solutions (Shu).

The current number of students totals 75, and 21 students have completed the 5-year course so far. These PhD holders work in diverse workplaces, including private companies, universities, research institutes, government offices, and non-governmental organizations. In these places, they have been welcomed as valuable resources for social innovation. Recently, I was happy to hear that alumni and current students have cooperated to establish a general incorporated association named "AISIMAS," an abbreviation of "Advanced Integrated Studies in Human Survivability Impact Association." Through this collaboration, they have started practical and long-lasting endeavors to solve social problems.

At GSAIS, it is possible to obtain a master's degree in two years at the shortest, although it is primarily a graduate school for a 5-year doctoral course. Therefore, we welcome applicants whose intention to study may be limited for 2 years at the moment. We expect that students will propose unique research topics that are useful to solve social problems.

Aren't you interested in studying at GSAIS? Here you will start the endeavor to change society and the world. We look forward to your admission.

April, 2021

Not-for-Profit Think Tanks

Think Tank #1: The Global Challenges Foundation

https://globalchallenges.org/

Laszlo Szombatfalvy, our founder

The Global Challenges Foundation was founded in 2012 by Swedish financial analyst and author Laszlo Szombatfalvy (1927-2022). Laszlo Szombatfalvy authored the book *The Greatest Challenges of Our Time* (first edition published in 2009 by Ekerlids förlag), in which he assesses the greatest threats to humanity, and outlines various opportunities for overcoming them. *The Greatest Challenges of Our Time* is available in English, Swedish, Mandarin, German, French and Spanish.

Laszlo Szombatfalvy is also the author of *Känslor och förnuft – en bok om moraliska beslut* (Emotions and Reasoning – a Book on Moral Decisions), published in Swedish by Ekerlids Förlag in 2010.

The book *The Greatest Challenges of Our Time*

The world has undergone an unparalleled transformation in the past 100 years. The population explosion, the astoundingly rapid developments in science and technology, and the changes in lifestyle in industrialized nations, have all created major problems and imbalances. In this book, Laszlo Szombatfalvy – who became a well-known actor on the Swedish stock market in the 1970s – discusses the lack of risk assessment when it comes to the global problems we are now facing.

The risks we are accepting when it comes to the threats facing us are many times greater than what we would consider acceptable in other areas, such as traffic or aviation. In *The Greatest Challenges of Our Time*, Laszlo Szombatfalvy identifies, analyses and assesses four mega-threats to humanity – environmental degradation, climate change, political violence and extreme poverty. He also outlines various ways of overcoming those threats or, at least, minimizing the risks.

The Greatest Challenges of Our Time is available in English, Swedish, Chinese, Spanish, German and French. Download the second, revised edition (2010). Printed copies can be ordered from bokus.com.

The Foundation's Work

The Global Challenges Foundations works to facilitate dialogue about and improve understanding of major global catastrophic risks among policymakers, thought leaders and the public. Its goal is to stimulate ideas on and development of new, better and more equitable decision-making models, so that the global threats and challenges can be effectively managed.

Apart from its own projects and publications, the Global Challenges Foundations also supports a number of independent initiatives that are aligned with the goals of the Foundation.

The Global Challenges Foundation was founded in 2012 by Swedish financial analyst and author Laszlo Szombatfalvy, who donated SEK 500 million. The Foundation is based in Stockholm.

The Foundation's work is led by the board, which is aided by a number of senior advisors, and the Foundation's secretariat, headed by Managing Director Jens Orback.

Since its inception in 2012, the Global Challenges Foundation initiates and supports a number of projects aligned with the goal to increase knowledge and raising awareness of the greatest global risks. The GCF stimulates discussion on new, better and more equitable models to manage these threats in the world community.

Throughout the course of its history, the Global Challenges Foundation has been present at conferences and their arrangements, supporting the publication of books and reports, funding research and education,

organizing prize competitions, and an active voice in public debate. The focus of the foundation's activities changes reflecting the progression of its work. In the following section you can find out more about pivotal developments in the foundation's history.

Our view on global catastrophic risks as existential threats to humanity

During the past century, humanity's situation has changed drastically – in many cases for the better. The scientific and technological achievements are impressive, and in most countries, people live longer and better lives than previously.

On the other hand, our way of living has created serious global problems. The world population has quadrupled, and consequently, the resources per capita are only a quarter of what they used to be. As a consequence of this, coupled with a dramatic increase in the standard of living in developed countries, we are seriously overtaxing our common natural resources. We have also adversely affected the ecological system in several ways, with consequences that are hard to foresee, and we have triggered a process of climate change with potentially devastating effects. Meanwhile, our capability to annihilate each other through the use of weapons of mass destruction is greater than it has ever been.

For the first time in history, humanity is capable of seriously disrupting or even destroying Earth's ecosystem, on which we depend for our existence, and we are well on our way of doing just that.

How we consider, act on, and manage risks, is a major, urgent issue – one which is not fully reflected in current global governance. Our mutual interdependence and the increasing global risks demand more effective global decision making.

The work of the Global Challenges Foundation mainly focuses on stimulating and supporting the creation of more effective decision models, in order to handle three impending risks and their underlying drivers.

The risks

Today, in our view, the largest global catastrophic risks are three partially related risks:

Climate changeis the single greatest, direct threat to humanity. Human emissions of greenhouse gases have caused a global temperature rise which, due to known and unknown threshold effects in the ecosystem, can lead to continued self-heating with catastrophic consequences for humanity. Among the instances are exceptional weather phenomena, extreme drought, forest fires, desertification, floods and a sharply elevated sea level.

Even today, because of hitherto insufficient measures, if we take the most effective countermeasures, we cannot be absolutely sure of avoiding catastrophic consequences.

Other large-scale environmental degradation(in addition to greenhouse gas emissions) includes a variety of events that seriously damage the Earth's ecosystem and can lead to biological collapse. From over-utilization of natural resources and destruction of many ecosystems (for example, by depletion, soil degradation and deforestation) to pollution and poisoning of water, soil and atmosphere, as well as depletion of biodiversity. Potential effects include food and water shortages and weakening of the ecosystem's future resilience.

According to the World Wildlife Fund (WWF), natural resources equivalent to four Earths would already be needed today to allow all living people to live in the same way as the inhabitants of the industrialized countries do.
Weapons of mass destruction Apart from the fact that war itself is a humanitarian disaster, weapons of mass destruction present a direct risk of virtually unlimited killing. Nuclear weapons, but also biological weapons that can be developed both significantly cheaper and more covertly, can cause large-scale, catastrophic damage. In order to take steps towards the elimination of these weapons, a global order is required where they are registered and controlled as far as possible.

The drivers

In our view, the underlying drivers are primarily the following:

Population growthis both a source of happiness for individuals and creates future potential for our common development. However, due to its wide scope, it is a risk multiplier. There are not enough natural resources to enable everyone to enjoy first-world standards of living. Also, the increased exploitation of natural resources – usually using fossil fuel – leads to a rapid increase in pollution and waste products.

The population explosion of the last century is a cause of the global risk panorama that we are experiencing today. The population increase is also expected to continue to be high. According to the UN's average forecast, by 2100 we will be almost fifty percent more: 11.2 billion.
If this forecast becomes a reality, work will be significantly hampered to an acceptable end to humanity's climate adventure. Population growth may well be the decisive factor for climate and environmental disasters.
Despite the drama of the increase in population, the problem is rarely mentioned in the political debate.

Poverty is a major, ongoing disaster in itself and a moral shortcoming for the world community. The fact that every eighth citizen is not given enough food, nor access to clean water or basic health care would be unthinkable in functioning nation states. Yet, this is the reality of the world community.
Poverty is also a very serious driving force. The expected increase in global population until the year 2100 is linked to people living in poverty. Part of the population increase in poor countries is offset by population decline in richer countries. Although population growth is expected to occur in countries with currently low environmental impact (of the 3.6 billion increase 3.2 billion is estimated from Africa), the trend towards changing lifestyles emulating industrialized countries can go fast.
These global intertwined risks and problems must be analyzed and addressed together.

Politically motivated violence

The risk of being exposed to armed violence gives rise to suspicion, fear and hatred between nations and peoples. A fact that makes it more difficult to meet our common global risks.
In addition, political violence and its consequences are constantly creating new, urgent issues to be addressed by the world's politicians, accompanied by constant elements in the news flow with headlines on war, attacks, flows of refugees and more, which draws the public's and politicians' attention away from the larger but longer term problems.
Finally, military budgets devour unimaginable human and material resources. Although all nations want to live in peace, we spend almost $5 billion daily on military spending globally, without creating any real security for anyone. This is by far the world's greatest waste of resources!

How high are the risks?

Since climate change, other environmental degradation and weapons of mass destruction are the greatest direct threats to humanity, we primarily focus here on these risks.
After all, risk can be defined as the possible damage that can occur multiplied by the probability of it occurring. This means that when the possible damage is endless or almost endless, such as the death of several billion persons, then in practice the risk would also be endless if the probability of the disaster is at least conceivable.
Most evidence suggest that this probability already exists in terms of climate change, although researchers cannot quantify its probabilities with certainty. The common denominator in almost all climate news and new research findings is that "the situation is worse than we thought". The reason is, among other things, known (but difficult to assess) and unknown threshold effects in the ecosystem. A recent research report in PNAS states that "even at 2 degrees of global warming, we can pass a 'planetary threshold' that leads to self-propelled warming, which in turn can lead the Earth towards a so-called 'Hot-House Earth', a future with even higher temperatures and with even more difficult global environmental risks." The likelihood of us achieving a two-degree warming is very high today. The risks increase every day until we have succeeded in reversing the development. So we should do everything in our power to minimize climate risks.
The damage from other large-scale environmental degradation can be very large but can also be manageable. Here, hopefully, we can influence the outcome to a greater extent than in connection to climate change. The most important - but also very difficult - factors that will affect the damage are:

- The political will to stop environmentally destructive activities as soon as possible.
- Population trends. If we cannot stop the population increase, it will increase the risks exponentially.
- The extent to which we succeed in reallocating resources from the richest to the poorest countries.

It is impossible, even in this context, to cover probabilities and risks in meaningful figures. However, given that the potential damages are very large, we should also consider major risks.

How big is the risk of a global catastrophe because of weapons of mass destruction? The answer when it comes to nuclear weapons is that the likelihood of a nuclear war is very difficult to assess. According to the United Nations Institute for Disarmament Research (UNIDIR) the risk of a nuclear war has never been higher than now since World War II. As long as nuclear weapons exist, there is a risk that they will be used. Several times in history, only fortunate circumstances have prevented the outbreak of a nuclear war based on misunderstandings and mistakes.

Of the other weapons of mass destruction, it is mainly biological weapons that can lead to global disasters. Here, the risks are even more difficult to assess. The costs of developing and manufacturing biological weapons are incomparably lower than for nuclear weapons. An effective defense against these weapons is extremely difficult, if not impossible, to create.

Global risks have become extremely large due to our slow and ineffective management of them so far.

Why have we failed to address the global risks more effectively?

Humanity has significantly increased its ability to destroy itself, because we have avoided managing the risks we created in any serious way. Coming up with a range of reasons for this is easy enough, though:

The world has gone through rapid and radical change. Up until the twentieth century, humanity lacked the ability to significantly degrade living conditions for itself and future generations. Consequently, we have never before experienced the need to assess large-scale risks to our survival. We have never been forced to think globally and long-term.

The complexity of the problems that are ours to solve. The climate change may be the most well-known and thoroughly analysed of the major global risks. But revolving around climate change is, as we just saw, a range of other factors that either aggravate the threat or hinder and delay the necessary actions.

Consequently, our political system has not adapted to the realities of the present. We are trying to solve today's problems with the tools of yesterday. Intergovernmental negotiations are guided by national interests, and result in inadequate or belated action. The national perspective still dominates our thinking and our political system. In the global community, there is no politician or institution with the authority or the responsibility to effectively manage global risks.

Our politicians are preoccupied with short-term domestic problems that voters show the most interest in. Leading up to the 2018 parliamentary election in Sweden, the electorate ranked the most important problems as follows: healthcare, immigration, education, law and order, elder care, the economy, jobs, and pensions. Climate and environmental issues only came in ninth. The other global risks did not even make the list.

Urgent international problems and events, such as war, terrorism and refugee flows, draw the attention of politicians and the public even further away from more important, long-term risks.

Lack of crisis awareness. Most of humanity – including political leaders – realizes that climate change is a major problem, but there seems to be no awareness that the existence of all humankind is at stake, and that the time to act is now. In the Paris treaty of 2015, the countries of the world agreed to limit global warming to "well below 2 degrees Celsius", and to "pursue efforts" to limit the temperature increase to 1.5 degrees Celsius. However, according to

scientists, the concrete promises of emissions reductions actually made so far only amount to limiting warming to 3 degrees Celsius at best.
Some politicians and public figures deny or underestimate climate risks for various reasons. The worst disasters are expected to happen many decades, or even further, into the future. When mitigating risk means making financial or lifestyle sacrifices, some choose to deny the risk.
Climate action requires changes in lifestyle and consumer habits.
In conclusion, we would like to state that the way in which population growth aggravates all other problems is an issue that not only is being seriously underestimated, but also appears difficult to manage.
Unmanageable global risks can only be effectively managed through global decisions and joint efforts of all nations in consensus and with an understanding of our mutual interdependence.
Our ambition is to speed up the process that leads to a decision model that can optimally manage the risks. Read more about the Global Challenges Foundation's work.

The Global Challenges Foundation launches another prize competition, the **Educators' Challenge, which opens for entries in November**. The goal is to find innovative methods of engaging students and the public in discussions about better frameworks for global cooperation.

The annual report *Global Catastrophic Risks 2017* is published. This report includes the *GCF Risk Handbook*, the world's first complete and concise introduction to global catastrophic risks, prepared in close collaboration with a team of leading experts.

Think Tank #2: Global Catastrophic Risks Institute

GCRI is a think tank that analyzes risks to the survival of human civilization. Our mission is to develop the best ways to confront humanity's gravest threats.
https://gcrinstitute.org/

Think Tank #3: Coalition for the UN We Need

https://c4unwn.org/introduction-to-c4un/

STRATEGY AND PLANNING FOR THE FUTURE

VISION
To transform the UN system by promoting inclusive people-centered multilateralism in partnership with civil society, governments, and the UN.
MISSION
We provide an open forum for civil society, the United Nations and member states to promote the renewal, innovation, and strengthening of the United Nations system. We support and initiate partnerships, activities, campaigns, information-gathering and sharing, progressive ideas, leadership, and advocacy that advance the follow-up to the UN75 Political Declaration and the UN75 People's Declaration and Global Plan for Action
Strategic Plan 2021 – 2013

https://c4unwn.org/wp-content/uploads/2020/12/Draft-Strategic-Plan-Coalition-For-The-UN-We-Need.pdf

WHAT IS THE COALITION FOR THE UN WE NEED?

The Coalition for the UN We Need began as the UN2020 initiative, dedicated to using the 75th anniversary of the United Nations in 2020 as an opportunity to take stock and strengthen the UN system in partnership with civil society, governments, and the UN in support of a people-centered multilateralism.
We believe that strengthening the UN system means improving multilateral relations and structures for global problem-solving.
To this end: we involve the progressive voice of civil society in the conversation about the UN we need to meet the challenges of the 21st century.
Why #MultilateralismMatters
At a time when nationalism is on the rise and multilateralism is being called into question by powerful governments, we are faced with an increasing number of global threats that require greater international cooperation across borders, sectors and generations.

https://c4unwn.org/global-futures-forum/

During 20-21 March the #GlobalFuturesForum gathers in New York. The purpose of the meeting is to help frame the campaigns and advocacy agendas that will allow diverse civil society perspectives to be engaged in the preparatory processes of The United Nations' upcoming SDG Summit in 2023, and the Summit of the Future in 2024 (SOTF).

Tuesday 21 March 9:30-11:00 EST, the *Global Challenges Foundations's Head of Strategy, Anja Olin-Pape* participates in a panel on intergenerational and young perspectives – addressing models for co-leadership and intergenerational learning and on how to bridge the gaps in the global governance system.

SOTF is a critical milestone in the reform process *initiated by UN Secretary-General António Guterres*'s Our Common Agenda (OCA) report.

According to Guterres, the OCA report is intended to "advance ideas for governance arrangements in the areas of international concern mentioned in this report, and potentially others where arrangements are nascent or require updating."

Global Futures Forum is a unique civil society-led multi-stakeholder gathering consisting of a variety of organizations and institutions world-wide.

What will the future look like if the major trends of climate change, military conflict, and inequality are left unchecked in the absence of global cooperation?

The 2023 SDG Summit – the High-level Political Forum on Sustainable Development under the auspices of the General Assembly

The 2023 SDG Summit will be convened in September 2023, during the United Nations General Assembly high-level week. Heads of State and Government will gather at the United Nations Headquarters in New York to follow-up and review the implementation of the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs) . They will carry out a comprehensive review of the state of the SDGs, respond to the impact of multiple and interlocking crises facing the world, and provide high-level political guidance on transformative and accelerated actions leading up to the target year of 2030 for achieving the SDGs.

The Summit will also bring together political and thought leaders from governments, international organizations, the private sector, civil society, women and youth and other stakeholders in a series of high-level meetings with the Heads of State and Government.

The 2023 SDG Summit marks the mid-point of the implementation of the 2030 Agenda. The High-Level Political Forum on Sustainable Development (HLPF) in July 2022 under the auspices of the Economic and Social Council called for the Summit to " mark the beginning of a new phase of accelerated progress towards the Sustainable Development Goals ."

The SDG Summit will be chaired by the President of the General Assembly. The outcome of the Summit will be a negotiated political declaration.

This will be the second SDG Summit – the HLPF under the auspices of the General Assembly – since the adoption of the 2030 Agenda in September 2015.

Please read the Newsletter for the latest.

https://www.un.org/en/conferences/SDGSummit2023/newsletter

https://www.un.org/en/conferences/SDGSummit2023

Global Futures Forum – Set up to Prepare SDG Summit

https://c4unwn.org/

Global Futures Forum Online Registration

https://c4unwn.org/global-futures-forum/

This form is to confirm your ONLINE participation for the Global Futures Forum (GFF) 20-22 March 2023.

The United Nations Summit of the Future (SOTF) is proposed for 22-23 September 2024 in New York to "advance ideas for governance arrangements in the areas of international concern mentioned in this report, and potentially others where arrangements are nascent or require updating."

This gathering will take place a year after the SDG Summit and the Ministerial Meeting on a Summit of the Future,

scheduled for 18 September 2023.

In order to ensure that diverse civil society perspectives are engaged in the preparatory process of the 2024 Summit of the Future, a civil society-led **Global Futures Forum (GFF) is proposed for 20-21 March 2023** in hybrid format from New York**.**

The forum will comprise **two days of discussions and action**, preceded by multiple consultation tracks (e.g., regional & national forums, e-consultations, an open call for short global governance innovation briefs, and a monthly OCA dialogue series). The proposed principal objectives of the Global Futures Forum include:

1. Explore the design, feasibility, and potential impacts of wide ranging proposals, from the unique vantage point of civil society, as contributions to the Summit of the Future's preparations. Develop a framework for a "people's pact for the future" (name to be determined), as a civil society compilation of both principles and advocacy during the General Assembly's negotiations on an intergovernmental Pact for the Future and related instruments for adoption at the September 2023 Ministerial Meeting and the 2024 Summit of the Future.
2. Raise awareness, build ownership, and mobilize energy around the promise of the Summit of the Future to deliver on an ambitious set of outcomes that reinforce and help to accelerate the achievement of the 2030 Agenda for Sustainable Development and a strengthened United Nations system
3. Model true partnership and creativity worldwide among civil society to ensure active and equal participation across age groups, geographic representation, professional disciplines, and other forms of global diversity.

Think Tank #4: Leverhulme Center for the Future of Intelligence

http://lcfi.ac.uk/

Our mission at the Leverhulme Centre for the Future of Intelligence (CFI) is to build a new interdisciplinary community of researchers, with strong links to technologists and the policy world, and a clear practical goal: to work together to ensure that we humans make the best of the opportunities of artificial intelligence as it develops over coming decades.

Funded by a £10 million grant from the Leverhulme Trust, CFI explores the opportunities and challenges of this potentially epoch-making technology, short-term as well as long-term. We are based at the University of Cambridge, with partners at the Oxford Martin School at the University of Oxford, at Imperial College London, and at the University of California, Berkeley. Our research is mostly structured in a series of projects and research programmes. These projects are the root structure of CFI's community, reaching out to brilliant researchers and connecting them and their ideas to the challenges of making the best of AI. Topics range from algorithmic transparency to exploring the implications of AI for democracy.
Many researchers now take seriously the possibility that intelligence equal to our own will be created in computers, perhaps within this century. Freed of biological constraints, such as limited memory and slow biochemical processing speeds, machines may eventually become more intelligent than we are – with profound implications for us all.
As Stephen Hawking put it at the Centre's launch, AI is "likely to be either the best or worst thing ever to happen to humanity, so there's huge value in getting it right." We therefore aim to bring together the best of human intelligence so that we can make the most of machine intelligence.

Research Programs - http://www.lcfi.ac.uk/projects/

Think Tank #5: ICT4Peace

https://ict4peace.org/activities/
ICT for peaceful purposes
Since 2004, the ICT4Peace Foundation has championed the strategic, sustainable and meaningful use of ICTs for crisis management, disaster risk reduction and peacebuilding. The Foundation's sustained and strategic input, stocktaking exercises, evaluations, briefings, workshops and ideation has contributed to the strengthening of humanitarian aid structures, as well as the peacekeeping and peacebuilding – at the United Nations, and beyond. Uniquely, we work at and are called upon by the highest levels of government and inter-governmental bodies and also have deep, trusted, multi-stakeholder connections to grassroots activist, civil society and rights movements.
Pioneering output includes working with the UN on crisis information management platforms, developing the Crisis Information Management Strategy of the UN Secretary General (A/65/491), technical evaluations of key humanitarian platforms, contributing to the development of path-breaking information exchange protocols, the hosting of information sharing and collaboration platforms, creation of mission and disaster specific wikis, training on situational awareness and open source intelligence gathering including social media verification, strategizing the use of Big Data around peacekeeping and peacebuilding, the development of a rights based approach to Unmanned Aerial Vehicles (UAVs) in support of peacekeeping and curation of an annual, high-level UN meeting on crisis information management from 2008 – 2015.
Since 2017, we have pioneered the conversations around the ethics, rights and use of Artificial Intelligence and related fields in peacebuilding, including the laws around the use of autonomous

weapons in peacetime. We are also actively contributing to the thinking and research around frontier technologies that will increasingly define the information, peace and conflict landscapes.

Promotion of a secure and peaceful cyberspace

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In 2011 already, ICT4Peace called for a code of conduct and for norms of responsible state behaviour and confidence building measures for an open, secure, and peaceful cyberspace, and encouraged all stakeholders to work together to identify new cyber threats and develop solutions and agreements at national and global levels. In particular, it advocated against the increasing militarisation of cyberspace. ICT4Peace has supported international negotiations at the UN Governmental Group of Experts GGE) and the Open-ended Working Groups (OEWG I and II) in New York, as well as at the Organization for Security and Cooperation in Europe (OSCE), the Association of Southeast Asian Nations (ASEAN), the Organization of American States (OAS), and the African Union (AU) with policy recommendations and multiple publications, workshops. In 2014 ICT4Peace launched its Capacity-building programmes and in 2020 created The ICT4Peace Academy, in particular for Policy Makers and Diplomats from Developing and Emerging economies to enable them to develop and implement their National Cybersecurity Strategies, building CERTS and meaningfully engage in the UN GGE and in the OEWG I 2019-2021 and OEWG II 2021-2025, but also in bilateral and regional negotiations.

In 2019 at the OEWG I in New York, ICT4Peace issued a call to governments to publicly commit not to attack civilian critical infrastructure and proposed a 'States Cyber Peer Review Mechanism for state-conducted foreign cyber operations'. See also all ICT4Peace

inputs to and comments on OEWG I and the ICT4Peace Submission to OEWG II 2021 – 2025.

ICT4Peace Academy

ICT4Peace Academy offers custom-tailored courses to meet your organization's needs in learning more about today's challenges in Information and Communications Technologies (ICTs), including cyber diplomacy, cyber peacebuilding and cyber (human) security. Drawing from an extensive network of expert practitioners, including diplomats, technologists and civil society experts, each customized course offers the latest in up-to-date information which is tailored to your organization's particular context and presented in a live and interactive format.

Who is it For?

ICT4Peace Academy offers custom-designed courses for groups from governments, international and regional organizations, civil society organizations and companies who want to improve their understanding of today's most pressing challenges of new technologies. We offer a range of different modules on cutting-edge topics such as International Law and Cyber norms, Cybercrime and Data Protection and Information and Communications Technologies (ICTs) and Gender. Modules typically are offered in **60 minute** or **half-day** formats, but longer, in-depth modules lasting one or more days may be available upon request. Each course is custom-designed and adapted to the context and needs of your organization and may last from half a day to a full week or more. Class-sizes range from 5-40 participants.

How Does It Work?

1. Choose the topics for your customized course from our wide selection of cutting-edge learning modules.
2. Answer our questionnaire to provide specific information about your organization.
3. Submit these to ICT4Peace Academy, along with a range of dates when you would like to have the course.
4. ICT4Peace responds with an offer for your tailor-made course.

Start planning your course now

LAUNCH THE COURSE PLANNER

Don't know what modules your organization needs? Then we can help you design the perfect course for you. Contact us to begin the conversation!

CONTACT

Example:

Government unit wants to prepare officials for cyber negotiations at the UN. ICT4Peace Academy proposes a five-day course with modules on: 1) International Cyber Norms, 2) Application of International Law to Cyberspace, 3) Multistakeholder involvement and Cyber, 4) Cybercrime and Data Protection, 5) Emerging Issues in Cyber.

https://academy.ict4peace.org/course-planner/?step=1

Bi-monthly Newsletter:
https://ict4peace.org/activities/updates-on-cybersecurity-and-icts-for-peacebuilding-march-2023/

Global Institutions

UNESCO Report November 2021
UNESCO Futures of Education Advisory Board

https://en.unesco.org/futuresofeducation/advisory-board

Building peace in the minds of men and women
The initiative
The context

With accelerated climate change the fragility of our planet is becoming more and more apparent. Persistent inequalities, social fragmentation, and political extremism are bringing many societies to a point of crisis. Advances in digital communication, artificial intelligence, and biotechnology have great potential but also raise serious ethical and governance concerns, especially as promises of innovation and technological change have an uneven record of contributing to human flourishing.

The vision

Knowledge and learning are humanity's greatest renewable resources for responding to challenges and inventing alternatives. Yet, education does more than respond to a changing world. Education transforms the world.

The aim

This initiative aims to mobilize the many rich ways of being and knowing in order to leverage humanity's collective intelligence. It relies on a broad, open process of co-construction that involves youth, educators, civil society, governments, business and other stakeholders.
One central piece of the work was guided by a high-level International Commission of thought-leaders from diverse fields and different regions of the world. In November 2021 the commission publish its report *Reimagining our futures together: A new social contract for education,* which presents a forward-looking vision of what education and learning might yet become and allow us individually and collectively to become.
Resources

https://en.unesco.org/futuresofeducation/resources
Submit a Paper
UNESCO is inviting researchers, educators, and practitioners to contribute 1000-2000 word think-pieces that explore, from different perspectives, the governance imperatives of a new social contract for education. Submissions will be peer-reviewed, and a selection will be published in a volume to appear in English and French, in advance of the UN's Summit of the Future.
This volume will explore the question of how forging a new social contract for education will require governance models, approaches, and foundations that align with its key principles. Characterized by cooperation and solidarity, concerned with widespread participation and the establishment of trust, and committed to justice in all of its aspects, education will require new forms of leadership, prioritization, participation, and policy reform across its systems, processes, and objectives. **All submissions must be received by 31 January 2023.**
Read more details about the publication and submission information in the call for proposals.

Organize your Own Events!!

We also invite you to **organize your own events (in-person or online)** to discuss the report **and ways to build a new social contract for education.** What do the report's visions and recommendations mean for you? for education in your community? Share your reactions, ideas, and comments with your community.
There are many resources at your disposal including PowerPoint presentations and videos about the Futures of Education initiative to help you organize these discussions.
Please also download this discussion guide which is designed for a group of people to spend some time discussing the three questions mentioned above – which are the same questions that the Commission itself asked: what should **continue**, what should be **abandoned**, and what should be **reinvented** afresh? But then there is a fourth key question: **what will you do next?** Think about who you can bring on board. Who is not part of the conversation and needs the opportunity to join? How will you bring about the changes you have identified – how will you transform the future!
If you decide to organize an event, please be sure to let us know. We publish many stories about Futures of Education conversations and ideas as News items on this website. Also make sure to write up key conclusions and suggestions from your discussions. Publish your ideas on a blog, put them in an op-ed, and share those with us at futuresofeducation@unesco.org.

Annex #2 Student-Led Activities

Harvard-MIT X-Risk

https://harvardmitxrisk.org/

The Harvard MIT Project on Existential Risk is an academic collective of students and faculty working to mitigate existential risks.

The Precipice Reading Group

Harvard-MIT X-Risk runs multiple cohorts of a weekly reading group on The Precipice by Oxford University philosopher Toby Ord. The Precipice provides a comprehensive scientific overview of existential risk and makes the case that protecting and preserving humanity's future is one of the most pressing moral issues of our time.

Join the Group

"Many of the dangers we face indeed arise from science and technology—but, more fundamentally, because we have become powerful without becoming commensurately wise. The world-altering powers that technology has delivered into our hands now require a degree of consideration and foresight that has never before been asked of us." – Carl Sagan, Pale Blue Dot

HARVARD
EFFECTIVE ALTRUISM STUDENT GROUP

Harvard Effective Altruism Student Group

https://www.harvardea.org/

EFFECTIVE ALTRUISM is about answering one simple question: how can we best improve the world?
Most of us want to improve the world. We see suffering, injustice, and death and feel moved to do something about it. But figuring out what that "something" is, let alone actually doing it, can be a difficult and disheartening challenge. Effective altruism is a response to this challenge.

"Effective altruism — efforts that actually help people rather than making you feel good or helping you show off — is one of the great new ideas of the 21st century."

- Dr. Steven Pinker

"What Harvard EA does is maximally important. I wish I had a group like this when I was an undergrad."

- Dr. Joshua Greene

https://forum.effectivealtruism.org/posts/NvzeAtoynxGjDnWkp/announcing-the-harvard-ai-safety-team

https://pll.harvard.edu/course/future-humanity-system-approach?delta=0

Course description

It is irresistible to think that the human race will survive forever. Yet, major changes are happening every day, and some of them create new challenges. Challenges can be complex and wicked. They may be related to new technology, the decline of sustainability, and human conflicts. Life goes on and even when there are wars, hope prevails. But is humanity safe? Are there existential risks? Is growth limitless? Are human values protected? Are there tipping points when the future becomes at risk? Among so many possible perils, how do we fit in? What is our role? How do we sustain sociability? What are the opportunities? What tools do we need to acquire and add to our skills? In this course, the instructor creates the provocations and exercises and guides the group. This course is a combination of learning useful techniques as well as valuable content, and is structured over three parts: an overview of systems thinking and systems mapping, tools and challenges, and navigating uncertainty by thinking in futures. Students learn through reflections and discussions, and solve problems using systems analysis and design methods. Students read, write, watch movies, and search the web for data to synthesize information. Most importantly, they create new ideas and solutions with their peers. Learning takes place through creating innovative solutions to human challenges, and small groups work to create insights and prototypes. Critical thinking and collaborations are the fuels for creating these innovative proposals.

https://www.repository.cam.ac.uk/bitstream/handle/1810/280193/Working%20together%20to%20face%20humanity%E2%80%99s%20greatest%20threats%20preprint.pdf?sequence=1&isAllowed=y
Existential Risk – Nick Bostrom
https://existential-risk.org/concept

https://risk.princeton.edu/

s://en.unesco.org/futuresofeducation/resources
https://en.unesco.org/futuresofeducation/advisory-board://www.harvardea.org/ https://www.harvardea.org/

Harvard-MIT Project on Existential Risk is an academic collective of students and faculty working to mitigate existential risks.
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