

Science, Technology and Innovation for Society

Work Programme 2023-2024



Preface

In early 2022, a genetically modified pig's heart was transplanted into a male heart patient in the United States. The operation caused quite a stir: was it the medical technology answer to organ transplant waiting lists? Or was it a retrograde step for animal welfare?

Science, technology, and innovation have a great deal to contribute to society, such as future-proof healthcare. But that demands an understanding of the social and ethical aspects of science, technology, and innovation. Only then can one debate what is desirable, and only then can political decision-making take place on that basis.

Since 1986, the Rathenau Instituut has been conducting research and organising public dialogue on the impact of science, technology, and innovation on society. In 2021 and 2022, for example, we co-organised a broad public dialogue on the use of animals as organ donors. We also concern ourselves with developments in science, technology, and innovation in such areas as the sustainable supply of energy, the agricultural transition, and socially responsible digitalisation.

With its work programme for 2023-2024, the Rathenau Instituut expresses its aim of clarifying how science, technology, and innovation can contribute to tackling the challenges facing society, while bearing in mind public values. The Rathenau Instituut draws up a work programme every two years. Over the next two years, we intend focusing on digitalisation, climate, and health. We will build on the expertise we have accumulated in recent years regarding knowledge for transitions. And with facts and figures we will continue to clarify how the science system works.

In drawing up this work programme, we engaged with our Programme Council and with contacts that utilise our work or with whom we collaborate, for example researchers, politicians, parliamentary officials, and journalists. A list of those concerned can be found in an appendix. We are confident that our work will make it possible over the next two years to strengthen and enhance public dialogue and shape political opinion on science, technology, and innovation. We hope to work with a wide range of parties and initiatives in the coming years to achieve the aims of this work programme, ranging from the European Union and our European counterparts united in the EPTA network, to research organisations and public authorities at national, provincial, and local level.



Prof. dr. ir. Eefje Cuppen
Director of the Rathenau Instituut
Photo: Dirk Hol



Drs. Maria Henneman
Chair of the Board of the Rathenau Instituut
Photo: Valerie Kuypers

Introduction

Society is facing major challenges. The effects of climate change are becoming more perceptible: from droughts to floods, and from heat waves to degradation of biodiversity. We are living longer, but for many of us that means living longer in poorer health. There are staff shortages in the health and education sectors, putting essential services under strain. And with the war in Ukraine, Europe is also under geopolitical strain. Adding up all these challenges, one sees a society confronted by a number of key choices. With its work programme for 2023-2024, the Rathenau Instituut aims over the next two years to clarify how science, technology, and innovation (STI) can contribute to finding solutions to these challenges that society is facing.

Confronting those challenges requires fundamental changes (transitions) within society. A sustainable economy and food chain are needed, and our public services and government institutions call for carefully thought-out innovation. Science, technology, and innovation play a key role in all this. To reduce the Netherlands' ecological footprint, for example, investment is taking place in new energy technologies based on sunlight, wind, and hydrogen. During discussion of agricultural reforms, policy-makers utilise scientific models to develop government policy. And in addressing staff shortages, for example in healthcare and education, ministers are pinning their hopes on digital applications such as electronic coaches and systems that utilise artificial intelligence (AI).

The role of science, technology, and innovation is complex, however. For example, technology can contribute to finding solutions to the challenges facing society, but may also impede the work of meeting those challenges. Take, for instance, educational digital applications that improve the quality of education but that can also increase inequality of opportunity. Similarly, a sustainable society requires that we adopt clean technology and phase out polluting technology. Moreover, research by the Rathenau Instituut shows that technological innovation is particularly effective when it goes hand in hand with innovation in social relations, organisational structures, and regulations. Indeed, a problem may sometimes call above all for social innovation, with technology playing only a modest role.

It is therefore important to view the role of science, technology, and innovation from a broad societal perspective. STI is part of an ecosystem in which many people and organisations work together and depend on one another.

Clearly, STI has the potential for taking society forward. It is far from clear, however, how that should be done. It is important, for example, to determine what decision-making process is best suited to guiding and funding STI, and how private individuals and other parties affected can be included in this in a meaningful way. How important that is became apparent during the Covid-19 crisis, with some groups – partly on the basis of disinformation – distrusting scientific findings and rejecting government policy. How can various groups be kept informed, have their say, participate, and feel listened to in a society in which there are concerns about polarisation? Research and dialogue are needed to determine how science and innovation systems can be organised in such a way as to maximise their contribution to society.

Mission of the Rathenau Instituut

The Rathenau Instituut was established to contribute to public dialogue and shape political opinion on the development of science, technology, and innovation, and to increase understanding of how the science system works.

In pursuing that mission, we conduct research and organise dialogue, focusing on three goals:

We place social aspects of science, technology, and innovation *on the agenda* and show where public values, human rights, and societal interests are affected.

We *promote* public debate and the shaping of political opinion on science, technology, and innovation.

We *support* political policy-making regarding the integration of technological developments into society, and the organisation and governance of science, technology, and innovation.

Our overall aim for 2023-2024

In the coming years, the Rathenau Instituut aims to play a major role in public and political dialogue regarding the challenges that we have referred to above. In this work programme, we will focus our activities on the following overall aim:

We clarify how science, technology, and innovation can contribute to tackling the urgent challenges facing society, while bearing in mind public values.

Research themes

In the coming years, we will pursue that aim by addressing four themes:

- Digitalisation
- Climate
- Health
- Knowledge for transitions

Figure 1 presents these themes schematically. The four themes build on previous work programmes, while at the same time accentuating different aspects. The diagram on page 16 shows how the current themes relate to the previous ones.

The first three themes concern important societal transitions. We will explore *Digitalisation* because digital technology is an essential tool that enables – or, on the contrary, frustrates – transitions, whether these concern alleviating the effects of labour shortages, protecting against new security threats, or promoting social cohesion.

We will also focus on the theme of Climate because climate change necessitates a number of major transitions: how can we shape our food system, our energy network, and our industry within the limits of the planet?

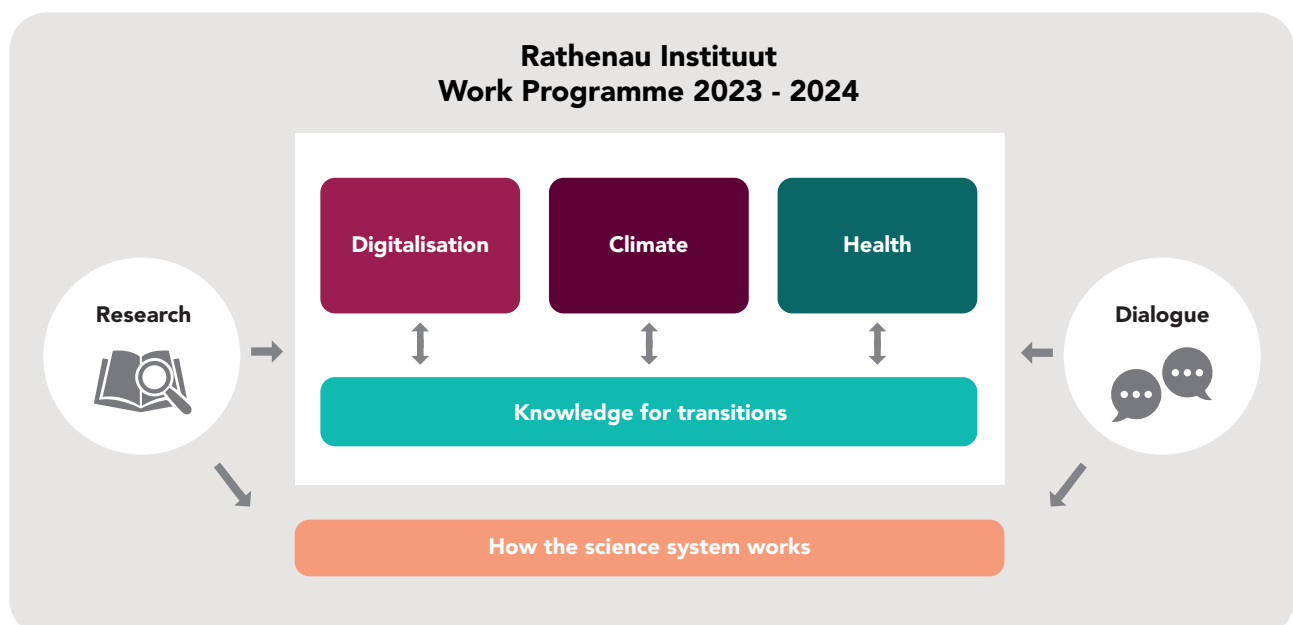


Figure 1: Schematic overview of the work programme

Healthcare is facing fundamental changes, which is why we have chosen *Health* as our third theme. How do we keep facilities up to scratch in an ageing society? What role does technology play in this, and what impact do transitions in sustainability and digitalisation have on people's health?

The fourth theme, *Knowledge for transitions*, concerns the role of knowledge in enabling changes within society. This theme has its own line of research, while simultaneously feeding the first three themes. Within it, for example, we investigate how innovation and knowledge generation should be organised so as to ensure a sustainable economy, future-proof healthcare, and a responsible digital society.

In addition to the four themes of this work programme, the Rathenau Instituut is also tasked with increasing understanding of how the science system works. We do this by making facts and figures available and by providing government and stakeholders with information, both solicited and unsolicited. To an important extent, this involves ongoing research, for example on financial expenditure within the science system and public trust in science. Another part of the work we do focuses specifically on current policy issues or requests from the Dutch Ministry of Education, Culture and Science.

Monitoring and analysing how the science system works take place largely independently of the work programme. At the same time, they provide a key knowledge base for achieving the aims of the four themes within the work programme. The various themes are explained in greater detail below.

About the work programme

The Rathenau Instituut draws up a work programme every two years, setting out its overall aim for the coming period. Our work programmes are drawn up after an extensive process of internal and external consultation. In drawing up the present work programme, we consulted, inter alia, the Scientific Council for Government Policy (WRR), the Royal Netherlands Academy of Arts and Sciences (KNAW), a knowledge coordinator at the Dutch House of Representatives, and our own Programme Council. We also consulted civil-society organisations (such as the Digisterker Foundation and the Health Council of the Netherlands), researchers, and journalists (see the appendix on page 20).

We asked all these parties about the challenges in science, technology, and innovation in the coming years, and made grateful use of their inspiring input. We intend also discussing the progress of this work programme with these parties in the coming years. Finally, it is worth mentioning that in addition to the projects within the work programme, the Rathenau Instituut also reserves capacity to respond quickly to current developments within politics and society.



Tablet education at De Nieuwe Wiel primary school in Lopik.
Photo: Werry Crone / ANP

Theme 1: Digitalisation

Digital technology is all around us and has a great deal to offer society. Examples include remote working, identifying early signs of skin cancer, or rapidly detecting cyber attacks. At the same time, however, digitalisation is increasingly cited as part of societal problems. Deepfakes, disinformation, and online hatred affect democratic debate and political decision-making, and place the rule of law under strain. Four to five million people in the Netherlands are unable to participate effectively in the digital society. Moreover, do the authorities actually have control of the many digital systems and algorithms that they themselves utilise? The key, in short, is to make use of digital technology in a well-considered manner.

In the coming years, the Rathenau Instituut aims to contribute to shaping a society that utilises digitalisation democratically, and in which everyone can participate.

Focus areas

Public values and human rights in insecure times

We will analyse how – in the face of rising geopolitical tensions with Russia, China, and other autocratic countries – the digital society can most effectively safeguard various public values and human rights, such as privacy and non-discrimination. Especially in these times of increasing insecurity, values can clash and need to be considered very carefully. For instance, we will explore how the police, the intelligence services, and the military can ensure a balance between new technological possibilities on the one hand – for instance for surveillance and detection purposes – and the ethical risks on the other. We will also explore how the Netherlands and Europe can gain greater control of their existing and emerging technology infrastructure, including platforms, cloud services, satellites, and quantum technology.

Trusted digital administration

We will explore how the responsible application of digital technology can contribute to reliable public administration and well-informed democratic decision-making. In that regard, it is important that the public authorities themselves utilise algorithmic applications in a transparent manner, and have clear frameworks for promptly detecting and eliminating risks. It is not possible, however, to eliminate every risk, and it is therefore also important for the authorities to disclose the considerations involved and engage in public discussion of them. Finally, there are concerns about the impact that disinformation, social media, and online hatred have on democratic decision-making. We will examine the extent to which these concerns are justified and how democratic decision-making can be strengthened.

Living, working, and growing up in the digital society

Together with the public and professionals, for example healthcare and education workers, we will research and design a vision for growing up, working, and living together in the digital environment of today and tomorrow. We will explore how digital technology can help tackle the tight labour market and contribute to the quality of work. We will investigate how young people can grow up enjoyably and safely within a digitalised environment, and we will explore what tomorrow's public digital space (a "metaverse") might look like. By engaging with politicians, policy-makers, and the business community on the basis on our insights, we will assist them in shaping a digital society in which everyone can participate.

The dominance of technology companies

We will investigate the impact that the dominance of technology companies has on society. Europe is becoming increasingly dependent on non-European companies for key digital infrastructure, such as social media platforms, cloud services, and satellites. Moreover a small number of tech companies, acting as "gatekeepers", dominate the markets in which they operate. In so doing, these companies are increasingly gaining a foothold in other sectors, such as healthcare, education, and finance. Society may suffer because of this, given that multinationals may not automatically respect the norms and values of our democracy.



Climate march in Amsterdam.
Photo: Sabine Joosten / ANP

Theme 2: Climate

The Dutch government has set ambitious sustainability targets: greenhouse gas emissions must be reduced by at least 55% by 2030, in line with the EU's *Fit for 55* package of legislation. The Netherlands must be climate-neutral by 2050. Among other things, these aims require sweeping changes in the way we live, travel, generate and consume energy, and practice farming. With such big changes, there are always winners and losers. Ways are therefore being sought, within both Dutch and European policy-making, for shaping these transitions in an equitable manner.

The Rathenau Instituut aims – through research and dialogue – to clarify how science, technology, and innovation can contribute to ensuring that there is a fair climate-neutral society by 2050.

Focus areas

Socially responsible climate innovation

The Rathenau Instituut intends investigating socially responsible climate innovation that takes account, *inter alia*, of the consequences for society, the environment, and the landscape. The construction of onshore wind power can, for example, provoke resistance within the local community, and nuclear power requires final disposal of radioactive waste in the deep underground. Difficult trade-offs also come into play with innovations such as CO₂ sequestration, low-emission housing for livestock, offshore wind power, hydrogen factories, and electric cars, for example as regards the funding of innovations and the design of our infrastructure. The Rathenau Instituut intends exploring how legitimate concerns can be addressed during development of and decision-making on climate innovation without compromising sustainability goals. Some of the issues relate to “exnovation”, i.e. the phasing out of unsustainable technology, for example the goal of phasing out the use of natural gas in the Netherlands. How can the costs involved be apportioned equitably? We will also focus on how digital technology can be made more sustainable in order to reduce its share of energy, water and space consumption.

Innovation policy for climate neutrality

Making society climate-neutral by 2050 requires a revamped innovation policy that can spur on and drive the process of making our economy and industry sustainable. The Rathenau Instituut intends investigating what form that innovation policy should take. What does

the climate challenge entail, for example, for how research is funded, and for collaboration between science and industry? We will also initiate dialogue on the issue of what kind of economic thinking is appropriate for such a change – is it time to say goodbye to the idea of growth, or is it better to interpret it differently? Finally, we will seek out shared views regarding climate-neutral industry, engaging in particular with parties in the energy, chemicals, and food sectors.

Dealing fairly with climate conflicts

Addressing climate change challenges our democratic society and the authorities in a whole range of different ways, as is clear from local opposition to wind farms and farmers’ protests against nitrogen reduction measures. We aim to contribute to effective, fair, and inclusive public management of climate conflicts, with knowledge and technology playing a central role. Which parties need to sit down and negotiate with one another, and how do we bring them together? This means not only the business community and environmental organisations but also young people and perhaps groups representing the interests of yet-to-be-born generations. In this regard, we will draw, for example, on the findings of our ongoing project on the decision-making process for long-term management of radioactive waste. We will also consider the extent to which “digital twins” – i.e. digital replicas of physical objects or processes – can contribute to effective democratic decision-making regarding the climate challenges, for example when designating locations for onshore wind turbines.



Newborn baby in an MRI scan at UMC Utrecht.
Photo: Marcel van den Bergh / ANP

Theme 3: Health

The healthcare sector faces major challenges in the coming years. The ageing population means a growing proportion of people need care, whereas job vacancies in the healthcare sector remain unfilled. Healthcare costs continue to rise due to population ageing and expensive personalised medicine, such as gene therapy and other forms of biotechnology. Action to safeguard public health also increasingly needs to consider the impact of digitalisation, which can affect health in all kinds of domains, from education to work, and both positively and negatively. It is important to give a voice to citizens and stakeholders as regards the use of both biotechnology and digitalisation for health and healthcare purposes.

Through research and dialogue, the Rathenau Instituut aims to contribute to timely democratic decision- and policy-making regarding the deployment of science, technology, and innovation in healthcare.

Focus areas

System transition in healthcare

Together with citizens and stakeholders from science, business and medicine, we will explore what innovation, knowledge, and collaborations are needed to cope with population ageing and with the labour shortages and high costs in the healthcare sector. Options for action will thus emerge for organising social and technological innovation in healthcare, while being mindful of differences. We will take account, for example, of gender, socio-economic conditions, and social inequality; in other words, we will adopt an intersectional perspective.

Health in the digital society

In conjunction with the theme of Digitalisation, we will examine the impact that digitalisation has on health and well-being in such domains as work, education, mobility, and leisure. This will include addiction to gaming, for example, but also the stress and loss of attention that may be associated with living in the digital society. In addition, we will carry out scenario studies to explore

the form and direction in which this broad digitalisation of our lives might develop, and what its integral impact on the health and well-being of the Dutch population will be.

Public engagement and biotechnology

We will organise public dialogues on the development of biotechnology so as to give citizens and patients a voice, for example regarding technologies such as artificial gametes ("sex cells") and DNA modification. We will also ensure that the insights emerging from these dialogues find their way into political decision- and policy-making, and into the governance of this technology in actual practice. Additionally, we will equip researchers, technology developers, businesses, and government with tools for incorporating important values such as safety, justice, and autonomy into their research and policies. Finally, we intend exploring – together with citizens and other stakeholders – how biotech innovations reinforce climate-related policies, or, on the contrary, place them under strain (theme 2).



Cyclists by the IJsselmeer.
Photo: T.w. van Urk / Shutterstock

Theme 4: Knowledge for transitions

Tackling major societal challenges, such as climate change and health, requires an approach in which knowledge and innovation are viewed as the outcome of a complex interplay of organisations and people, working together within an ecosystem towards a common goal. Transitions can only be achieved in a socially responsible way if all kinds of knowledge, experience, and expertise are combined. It is precisely the interaction between scientists, practitioners, civil servants, entrepreneurs, and citizens – and between different sectors and technology areas – that is needed in order to tackle societal challenges in an effective and coherent way.

In this theme, the Rathenau Instituut will investigate how challenge-oriented ecosystems for research and innovation can be organised in such a way that knowledge contributes to achieving the necessary transitions.

Focus areas

Impact pathways

Despite a decades-long debate on knowledge valorisation (society's use of scientific research), there is still insufficient understanding of the diverse ways in which knowledge and research can contribute to transitions. An ecosystem perspective that takes account of the diversity of actors, including citizens, businesses, and civil-society organisations, and their mutual interactions, helps to gain a better understanding of this. Such understanding is needed so as to better comprehend the different types of contributions that knowledge and research can make to transitions. Over the next few years, we will investigate this issue so that targeted policies can be developed to underpin the various pathways for knowledge to achieve impact.

Public engagement


In order to shape societal transitions in a responsible manner, citizens are increasingly involved in scientific science and knowledge production for policy. Recently, there has been a growing interest in citizen panels, citizen science, and other forms of public engagement in designing, implementing, and setting the agenda for research and innovation. Citizens are increasingly relevant players in challenge-oriented ecosystems of research and innovation. The best way of organising such public engagement is often unclear, however, and there is therefore a risk of getting bogged down in cooperation that makes only a limited or ineffective contribution. With research and dialogue, the Rathenau Instituut aims to contribute to a more meaningful involvement of citizens in the development of knowledge and innovations for transitions.

Funding research and innovation

The way research and innovation are funded influences which researchers and consortia investigate particular issues, and which issues they investigate. In practice, there are many ways in which government can fund scientific research, ranging from base funding of knowledge institutions to grants for individual researchers and multi-year programme-based funding for public-private consortia. The question is which funding arrangements help researchers, businesses, and civil-society organisations to work together on challenge-oriented knowledge and innovation agendas for a lengthy period. Over the next few years, the Rathenau Instituut will examine the funding of research and innovation from this perspective, considering, for example, the linking of research funding to education funding in the lump sum base funding of universities (the “first flow of funds”), and the requirements for co-funding in competitive project funding (the “second and third flows of funds”).

Geopolitical dimensions of knowledge for transitions

Given the cross-border nature of the societal challenges, transitions call for an international approach. Knowledge and innovations for transitions will also need to be produced largely in international collaboration. However, today's rapidly changing world order is putting pressure on international cooperation. The European Union (EU) and its Member States are therefore seeking new forms and strategies for international cooperation in research and innovation. For example, the EU is pushing for greater “strategic autonomy” of Europe vis-à-vis China and the United States. Recent actions and measures regarding knowledge security at both national level and at knowledge institutions have repercussions for international cooperation. The Rathenau Instituut will investigate the implications of the changing geopolitical context for international cooperation in knowledge and innovation for transitions.



PhD student prepares for her PhD at the University of Groningen.
Photo: Corné Sparidaens / ANP

How the science system works

Part of the Rathenau Instituut's remit is to clarify how the science system works. This is an ongoing activity in addition to our research within the themes set out in this work programme. Developments in science and policy will give rise to new emphases in performing this task in the coming years. Policy goals change, for example the launch of the Recognition & Rewards programme, and major new investments in science. These initiatives require monitoring and analysis.

We foresee new demands for information from the Rathenau Instituut about the science system, and analyses of it, as well as for further development of this expertise. We will continue to issue our periodic publications, such as Balance of Science, and supplement them with qualitative studies and topical analyses. For certain topics, we will conduct surveys, for example of private individuals or scientists, which we will combine with in-depth research. One example is our triennial survey on trust in science.

We refer below to two topics to which we will pay specific attention in the next two years. In addition, we will make information available or perform analysis based on current developments in science, policy issues, or requests.

Additional investment for science

In the coming period, we will monitor how additional investment in the science system is used. A great deal of additional funding is currently becoming available based on the Dutch government's Coalition Agreement, for example through the Fund for Research and Science and the National Growth Fund. Funding is being made available for start-up and incentive grants, as well as sector plans and investment for the further development of applied research and large-scale scientific infrastructure.

We will deal with implementation of these new investments in our forthcoming reports on Total Investment in Science and Innovation (TWIN). In the next edition of Balance of Science, we will also devote specific attention to the government's aims with the newly deployed policy instruments.

Broad, diverse scientific talent

In 2019, knowledge institutions and research funding bodies launched the Recognition & Rewards programme, and in 2020 the Ministry of Education, Culture and Science published the National Action Plan for greater diversity and inclusion. These reflect the way scientific talent is now viewed more broadly. Scientists should be recognised and rewarded not only for their research but also, for example, for teaching, supervising students and PhD candidates, transferring knowledge to society, academic leadership, and collaboration. The Open Science movement, which involves opening up scientific research to society, also requires new skills on the part of researchers. Our periodic survey of what drives researchers and teachers provides an insight into what motivates scientists and where they experience obstacles. In the coming years, we plan to further investigate the effects of the aforementioned policy initiatives on the make-up of the university workforce.

Relationship to previous work programme

2021-2022

2023-2024

Digital society

Digitalisation

Making perfect lives

Climate

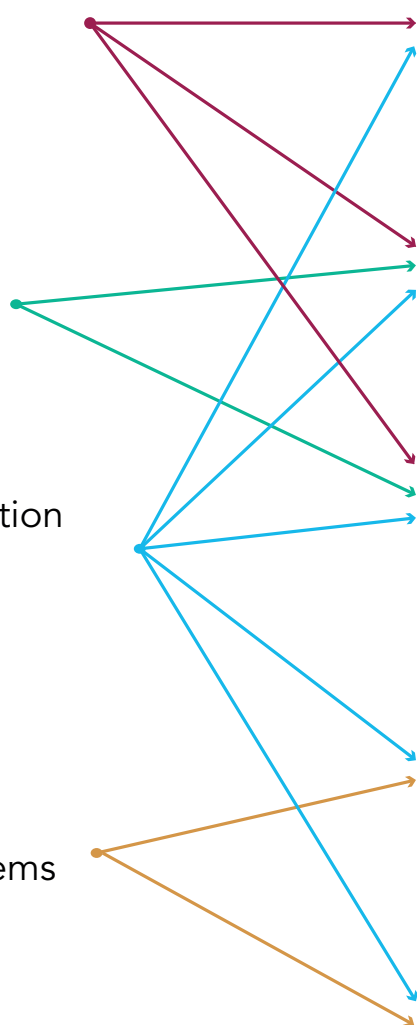
Democratic information society

Health

Robust science and knowledge ecosystems

Knowledge for transitions

How the science system works



Board

The Board of the Rathenau Instituut consists of the following members:

Drs. Maria Henneman (chair) - Maria Henneman is director/owner of Henneman Strategies BV, an agency for strategy and (crisis) communication and director/owner of Hof van Amstel BV.

Prof. dr. Noelle Aarts - Noelle Aarts is professor of Socio-Ecological Interactions and director of the Institute for Science in Society (ISIS) at Radboud University Nijmegen.

Drs. Felix Cohen - Felix Cohen is chair of the supervisory board of the Regina Coeli languages institute, a member of the Insurance Disciplinary Board, and chair of Varen doe je Samen (Sailing Together).

Dr. Laurence Guérin - Laurence Guérin is a lecturer on World Citizenship at The Hague University of Applied Sciences.

Dr. Janneke Hoekstra MSc - Janneke Hoekstra is a board member of Land van Ons and also operates a consultancy.

Prof. mr. dr. Erwin Muller - Erwin Muller is Dean of the Faculty of Governance and Global Affairs (FGGA) and Director of Leiden University's campus in The Hague, and Professor of Security and Law at the same university.

Drs. Rajash Rawal - Rajash Rawal is an independent education, leadership and strategy consultant.

Secretary to the Board:

Prof. dr. ir. Eefje Cuppen - Eefje Cuppen is Director of the Rathenau Instituut.

Programme Council

The Programme Council consists of representatives from various sections of society. It advises the Board in drawing up the work programme. Maria Henneman, chair of the Board, also chairs the Programme Council. Director Eefje Cuppen is the Secretary to the Programme Council. The members are (in alphabetical order):

Ir. Annet Aris MBA - Annet Aris teaches digital strategy at the INSEAD Business School in France and is on the supervisory board of a number of companies.

Marien Baerveldt - Marien Baerveldt is a strategic advisor in the field of learning, development and change and provides leadership training for civil-society organisations.

Dr. Rob Bijl - Rob Bijl was deputy director of the Netherlands Institute for Social Research (SCP).

Drs. Kris Douma - Kris Douma is chair of the board of the Netherlands Institute of Chartered Accountants (NBA) and a supervisory director at the NV Schade insurance company, the Stichting Register Arbeidsdeskundigen (SRA), and Oxfam Novib.

Dr. Linda Duits - Linda Duits is a researcher, publicist, and lecturer in Media Studies and Gender Studies at Utrecht University.

Drs. Bas Eickhout - Bas Eickhout is a member of the European Parliament on behalf of the Greens/EFA Group and leader of the GroenLinks Europa delegation.

Bert Fokkema - Bert Fokkema is part of an international team at Shell that develops policy and internal standards for the decommissioning of oil and gas production installations.

Yuri van Geest - Yuri van Geest is co-author of the bestseller Exponential Organizations and co-founder of De Buitenboordmotor.

Peter Giesen - Peter Giesen is foreign editor and commentator for the national newspaper De Volkskrant.

Prof. dr. Rob J. Hamer - Rob Hamer is director/owner of Hademar Holding BV, a company specialising in sustainable innovation.

Rob van Hattum - Rob van Hattum was a programme maker at Tegenlicht, science editor-in-chief for the public broadcaster VPRO, and Chief Technology Officer at NEMO. He now advises on science and television, including as chair of the programme council of the Evoluon.

Drs. Jos de Jonge - Jos de Jonge coordinated the "Facts and Figures" group at the Rathenau Instituut.

Yori Kamphuis - Yori Kamphuis is Senior Consultant AI and Cybersecurity at TNO and a speaker on artificial intelligence.

Dr. Annette Klinkert - Annette Klinkert is the founder of the city2science company.

Carrie van der Kroon - Carrie van der Kroon is a lawyer specialising in international children's rights. She works as the Communication & Public Affairs Manager at Defence for Children - ECPAT Netherlands and is also on the supervisory boards of a number of national and international organisations.

Drs. Chris Kuijpers - Chris Kuijpers is Director-General of Governance and Housing at the Ministry of the Interior and Kingdom Relations.

Willem Lageweg - Willem Lageweg is director and initiator of the Food Transition Coalition and holds a number of board and supervisory positions, for example at Fairtrade Netherlands, Louis Bolk, and Friends of the Maasai.

Dr. Dr.phil René von Schomberg - René von Schomberg is a philosopher and a specialist in science and technology studies. He is a Senior Research Fellow at the Cultures of Research Institute at RWTH Aachen University and a guest professor at the Technical University of Darmstadt.

David Winickoff - David Winickoff is a senior policy analyst at the Organisation for Economic Co-operation and Development (OECD) and Professor of Law at Sciences Po Law School.

Lynn Zebeda - Linda Zebeda is a social entrepreneur, a supervisor at Fair Trade and MVO Nederland, a board member of the Solar Biennial, and a faculty member at the THINK School of Creative Leadership.

Persons consulted for the Work Programme 2023-2024

Jesse Beentjes - Financieel Dagblad
Sanne Blauw - De Correspondent
Piet Boekhoudt - Stichting Digisterker
Geert-Jan Bogaerts - VPRO and Public Spaces
Eppo Bruins - Advisory Council for Science, Technology and Innovation (AWTI)
Coen Damen - Ministry of Economic Affairs and Climate Policy
Jos de Haan - Netherlands Institute for Social Research (SCP)
Wilma de Koning - Royal Netherlands Academy of Arts and Sciences
Gijs Diercks - Dutch Research Institute for Transitions (DRIFT)
Patrick Essers - Advisory Council for Science, Technology and Innovation (AWTI)
Koen Frenken - Utrecht University
Ivo Giesen - Royal Netherlands Academy of Arts and Sciences
Marlies Hanifer - Council of Public Health & Society (RVS)
Richard Heijink - Council of Public Health & Society (RVS)
Marissa Herder - Ministry of Education, Culture and Science
Leon Heuts - NEMO Kennislink
Noor Huijboom - Ministry of the Interior and Kingdom Relations
Jacob Jolij - Universities of the Netherlands
Shona Kalkman - Health Council of the Netherlands
Kristel Lammers - National Programme for Regional Energy Strategy
Dorien Lanting - Ministry of Education, Culture and Science
Marjolein Lauwen - Ministry of Education, Culture and Science
Myrthe Lenselink - Centre for Ethics and Health
Marcel Levi - Dutch Research Council (NWO)
Maartje Mol - Ministry of Education, Culture and Science,
Rudy Rabbinge - Wageningen University & Research
Marc Rijnveld - Public Mediation
Erik Schrijvers - Scientific Council for Government Policy
Tamar Sharon - Radboud University Nijmegen
Andrew Strait - Ada Lovelace Institute
Véronique Timmerhuis - Netherlands Organisation for Health Research and Development (ZonMw)
Babs van den Bergh - Universities of the Netherlands
David van der Plas - Ministry of Economic Affairs and Climate Policy
Ira van Keulen - National Ombudsman
Laura van den Heuvel - Netherlands' Ombudsman for Children
Rachèl van Hellemond - Health Council of the Netherlands
Amarens Veeneman - Analysis and Research Department, Netherlands House of Representatives
Paul Wouters - Leiden University

The **Rathenau Instituut** supports the formation of public and political opinion on the socially relevant aspects of science and technology. It conducts research and organises dialogue of science, innovation, and new technologies.

Rathenau Instituut