

The Nobel Foundation

Annual Review 2017





NOBELSTIFTELSEN

The Nobel Foundation



The Nobel Foundation Annual Review 2017

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The Nobel Prize Medal was designed by Erik Lindberg and is manufactured in recycled gold by Svenska Medalj in Eskilstuna.

The medals are cast in 18 carat gold and plated with 24 carat gold.

Photo: Alexander Mahmoud

Subject to changes regarding exhibitions, programmes and events during 2018

For questions regarding the Annual Review, please contact: media@nobel.se

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PHOTO: KARI KOHYAKKA

Lars Heikensten, Executive Director of the Nobel Foundation since 2011.

For the Greatest Benefit to Mankind

Alfred Nobel had a vision of a better world. He believed that people were capable of helping to improve society through knowledge, science and humanism. This is why he created a prize that would contribute to the greatest benefit to mankind. Science gives us the power to change the world for the better. However, sensible decisions require more than this. The Nobel Prize encompasses not only natural science subjects, but also literature and peace. This is significant. Alfred Nobel is reminding us of the importance of feeling empathy with our fellow human beings and having the wisdom and power to act even when it requires great and difficult efforts.

An open, tolerant and democratic society produces better conditions for good research. The scientific method is universal, even though truth can change over time. The crucial thing is to see reality and to continue seeking the truth. This has never been allowed everywhere, nor is allowed everywhere today, when even obvious facts are being denied.

A majority of Nobel Laureates, especially after the Second World War, have lived and worked in more than one country. Many discoveries have been the consequence of cross-border cooperation. The 2017 Physics Prize on gravitational waves is a good example. The results were published in an article with one thousand authors – researchers from around the world.

In the following pages, we tell about the discoveries and achievements that were rewarded with the 2017 Nobel Prize and about the activities of the Nobel Foundation. We also present our various public activities, exhibitions, meetings, events and digital publications that disseminate knowledge and inspire people to want to understand and improve the world.

Highlights of the year were our major international full-day meetings, seminars and exhibitions in South Korea, Japan, India, Dubai and Colombia. The Nobel Peace Center in Oslo displayed several highly popular photo exhibitions. In Stockholm, the number of events expanded in preparation for a more extensive array

of public activities at the future Nobel Center. This was especially evident in connection with the Nobel Prize announcements in October, when a series of new activities took place around Stockholm. For example, a large audience attended an entertaining crash course at the Rival Theatre about the discoveries behind the 2017 scientific Nobel Prizes, featuring members of the respective Nobel Committees. That same week, 350 teachers gathered for the first and much-appreciated Nobel Teacher Summit. Like our full-day Nobel Week Dialogue seminar, the teachers' conference discussed issues on the theme of truth and facts.

Based on the Nobel Prize's unique combination of subject areas, we will further develop these activities with the aim of meeting large future audiences at the Nobel Center in Stockholm.

Given the challenges we face in our era, we believe that our efforts are more important now than ever.

Wishing you an enjoyable reading!

LARS HEIKENSTEN
EXECUTIVE DIRECTOR

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ICAN - the International Campaign to Abolish Nuclear Weapons - was awarded the Nobel Peace Prize in 2017. Only a few hours after the announcement, the exhibition at the Nobel Peace Center in Oslo was updated, and ICAN took place among the other Peace Laureates awarded the prize since 1901.

PHOTO: PI FRISK



The organisation ICAN was represented by Setsuko Thurlow, a survivor of the atomic bombing of Hiroshima and Executive Director Beatrice Fihn. They received the Nobel Prize Medal and diploma from Berit Reiss-Andersen at the Oslo City Hall on December 10, 2017.

The 2017 Nobel Laureates



THE NOBEL PRIZE IN PHYSICS 2017

WAS AWARDED TO

Rainer Weiss, Barry C. Barish
and Kip S. Thorne

“for decisive contributions to the LIGO detector and the observation of gravitational waves”

ACCORDING TO EINSTEIN’S GENERAL THEORY OF RELATIVITY, time and space are woven together in a four-dimensional fabric called spacetime. One consequence of this theory is the existence of gravitational waves, like ripples in spacetime that occur when objects with mass accelerate. The effects are very small, however, and the existence of the waves has long been disputed. To be able to record gravitational waves, the LIGO detector was developed beginning in the 1970s. Rainer Weiss, Barry Barish and Kip Thorne have made crucial contributions to the project. Each detector consists of two perpendicular tunnels through which laser beams are sent. Gravitational waves cause small changes in the tunnels’ lengths, thereby displacing the laser beams. For comparisons, two detectors have been placed at different locations in the United States. In 2015 gravitational waves were detected for the first time. These resulted from a collision between two black holes in a distant galaxy 1.3 billion years ago. Observations of gravitational waves pave the way toward new knowledge about the universe.



Kip Thorne visited Grimsta School during the Nobel Week and met, among many others, the student Frida Hjälmheden.



THE NOBEL PRIZE IN CHEMISTRY 2017

WAS AWARDED TO

Jacques Dubochet, Joachim Frank
and Richard Henderson

“for developing cryo-electron microscopy for the high-resolution structure determination of biomolecules in solution”

FUNDAMENTAL PROCESSES OF LIFE are governed by a number of complicated molecules. Since the 1970s, Jacques Dubochet, Joachim Frank and Richard Henderson have in various ways expanded the possibilities of using electron microscopy to image biologically important molecules and processes. The electron microscope uses electron beams instead of light and can capture objects as small as atoms. However, electron beams destroy biological structures. Henderson succeeded in finding a way to generate a detailed three-dimensional image of a biological molecule using an electron microscope. Frank developed a method for analysing and merging blurry two-dimensional images from the electron microscope into a sharp three-dimensional image. Dubochet succeeded in overcoming the fact that many biological molecules depend on water, which evaporates in the vacuum of an electron microscope. He cooled the water so rapidly that it solidified around the molecules without the formation of ice crystals that distorted the image. These methods allow us a better understanding that is crucial for the development of pharmaceuticals, among other things.



Jacques Dubochet accepting his Nobel Prize.



THE NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE 2017

WAS AWARDED TO

Jeffrey C. Hall, Michael Rosbash and Michael W. Young

“for their discoveries of molecular mechanisms controlling the circadian rhythm”

LIFE ON EARTH is adapted to the regular rhythm of the day. In our cells an internal clock helps us to adapt our biological rhythm to the different phases of day and night. Jeffrey Hall, Michael Rosbash and Michael Young studied fruit flies to figure out how this clock works. Previous research had shown that genetic changes could disrupt the fruit fly’s circadian rhythms. In 1984, Hall, Rosbash and Young managed to identify a gene that is crucial for this process. They demonstrated that the gene encodes a protein that accumulates during the night but is degraded during the day. They also identified additional proteins that form part of a self-regulating biological clockwork in the fruit fly’s cells. The same principles have been shown to apply to other animals and plants. In humans the clock controls sleep, hormone levels, body temperature, metabolism and other processes. Effects of a disrupted daily rhythm are apparent, for example when we travel between time zones and suffer from “jet lag”. Our health is affected when our daily rhythm is disturbed over extended time.



THE NOBEL PRIZE IN LITERATURE 2017

WAS AWARDED TO

Kazuo Ishiguro

“who, in novels of great emotional force, has uncovered the abyss beneath our illusory sense of connection with the world”

IS THE SENSE OF BELONGING in the world an illusion? Memory, time and lifelong deception are central themes in Kazuo Ishiguro’s works, which also include music and love as recurring motifs. Ishiguro was born in Japan, but he has lived in the UK since his early childhood. Growing up in a Japanese family has colored his thinking and perspectives. His first two novels, *A Pale View of Hills* and *An Artist of the Floating World*, are set in Japan just after World War II. His most celebrated work, *The Remains of the Day*, published in 1989, is about an English butler and his feelings for a housekeeper at the time around World War II. In later works Ishiguro approached genres such as fantasy and science fiction, as in the case of the dystopian *Never Let Me Go*, from 2005. His language is characterized by restraint, even when dramatic events are portrayed. Ishiguro is primarily a novelist, but he also has written scripts for film and TV. In his youth, Ishiguro wanted to become a musician, and he later has also written song lyrics.



As a tradition, the Nobel Laureates sign chairs at the Nobel Museum. Jeffrey Hall visited the Nobel Museum on December 6 to make his contribution to the collection of autographs.



Kazuo Ishiguro described meeting students at Rinkeby Library as one of the most memorable moments of Nobel Week.

THE NOBEL PEACE PRIZE AWARD CEREMONY. PHOTO: KEN OPPRANN.
ALL OTHER PHOTOS, INCLUDING THE PORTRAITS, PHOTO: ALEXANDER MAHMOUD



THE NOBEL PEACE PRIZE 2017

WAS AWARDED TO

International Campaign to Abolish Nuclear Weapons (ICAN)

“for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its ground-breaking efforts to achieve a treaty-based prohibition of such weapons”

EVER SINCE THE ATOMIC BOMBS dropped on the Japanese cities of Hiroshima and Nagasaki in August 1945, nuclear weapons have constituted a threat to our world. Nuclear war would entail horrible suffering and enormous losses over a long time. The International Campaign to Abolish Nuclear Weapons (ICAN) is promoting nuclear disarmament. ICAN is a coalition of non-governmental organizations in more than 100 countries and has been a leader in efforts that resulted in 122 UN member countries concurring with a draft agreement on the prohibition of nuclear weapons in 2017. Five countries that have nuclear weapons – the United States, Russia, Great Britain, France and China – have not acceded to the agreement, since 1970 they have agreed to not spread nuclear weapons to other countries. The Norwegian Nobel Committee hopes that future negotiations will lead to a gradual, balanced and carefully controlled abolition of nuclear weapons.



The ICAN Executive Director Beatrice Fihn with a paper crane, made by school children in Hiroshima.



THE SVERIGES RIKSBANK PRIZE IN ECONOMIC SCIENCES IN MEMORY OF ALFRED NOBEL 2017

WAS AWARDED TO

Richard H. Thaler

“for his contributions to behavioural economics”

HOW DO HUMAN TRAITS govern individual economic decisions and what effect do they have on markets as a whole? Since the 1980s, Richard Thaler has analyzed economic decision-making with the aid of insights from psychology. He has paid special attention to three psychological factors: the tendency to not behave completely rationally, notions of fairness and reasonableness, and lack of self-control. An example of limited rationality is provided by his theory of mental accounting: people creating separate accounts in their consciousness and basing their decisions on the effect upon individual areas rather than on the situation as a whole. He has shown how people are prepared to give up material benefits in order to maintain what they perceive to be a fair distribution. The self-control problem is about the tension between the long-term view and the short-term view, and Thaler has contributed to this discussion by developing a planner-doer model. His findings have had a profound influence on many areas of economic research and policy.



Richard Thaler takes a closer look at the medal during his visit to the Nobel Foundation.

For more information about the Laureates of 2017, please visit Nobelprize.org



"I believe we must force universities to get more involved in schools, to ensure that science reaches them."

JOHAN ROCKSTRÖM,
STOCKHOLM UNIVERSITY



Approximately 350 people participated in the Nobel Teacher Summit conference.



One of the assignments during the day was to build a duck of Lego.

Vital Learning

For the first time ever, the Nobel Center arranged the *Nobel Teacher Summit* in 2017, a teachers' conference that will be recurrent. With the catchphrase "A world with fake facts needs true teachers", the conference focused on the role of teachers in a world in which knowledge and facts are being called into question. Speakers at the conference were the Nobel Laureates Herta Müller, Ben Feringa and Shirin Ebadi as well as Ola Rosling, Gopminder, and Johan Rockström, Stockholm University.



“We want to build a network of teachers that, through the Nobel Prize and Nobel Laureates, inspires teachers across the globe and stimulates curiosity in science. This day is designed to help teachers talk to their students about science and scientific methods. It is about teaching students to understand and process science on their own so they can evaluate the information they are confronted with.”

ANNIKA HEDÅS FALK,
HEAD OF EDUCATIONAL PROGRAMMES AT THE NOBEL CENTER

“It is important to learn to differentiate between knowledge and opinion,” says Ben Feringa, who explains how he nags his students to question him – but not blindly. “I encourage them to have a critical attitude towards information,” he explains. “I tell them that science is about finding better ideas, better explanations, and that it means that I as a teacher could be wrong. But it is not enough to simply say I am wrong; they must argue their point.”

BEN FERINGA, NOBEL LAUREATE IN CHEMISTRY 2016

ANNIKA HEDÅS FALK AND BEN FERINGA, PHOTO: SAMUEL UNÉUS. ALL OTHER PHOTOS: ALEXANDER MAHMOUD



The 2017 Nobel Week Dialogue was attended by approximately 1,600 people.

The Future of Truth

The history of the Nobel Prize is an ongoing search for truth. Every insight adds to the everchanging understanding of our world. The yearly Nobel Week Dialogue invites speakers from all over the world to elaborate on a given theme. This year, the debates and discussions focused on *The Future of Truth*.

THE OUTCOME OF THIS ACTIVE December day in Gothenburg was an engaging and critical discussion on the definition and use of what we call truth. Speakers with different perspectives gave their views on this complex matter. As children we are told not to lie and it may sound like an easy thing to do. Yet, it can be hard. Is there more than one truth? If so, to which one should we stick?

Nobel Laureate in Physics, David Gross, talked about the scientific truth and how it can be revealed by using scientific methods. These truths do not rely on nor feelings or politics. They are rather depending on an

open, transparent and non-authoritarian society where Nature is the only judge. Through experimentation and observation, theories can be disproved – rather than proved. In this ongoing search, reliable theories are therefore always open for possible modification through new insights. David Gross says that the Scientific Method is the greatest invention of humankind. In this lays a great optimism. On the question on how scientific truth can compete with contradictive opinions that don't accept the rules of scientific methods, he concludes that truth still will triumph; it always has, and it will continue to do so.

WRITER AND TECHNO-SOCIOLOGIST

Zeynep Tufekci, reflected on truth in another way, pointing out today's failing trust in old style institutions. She stressed the importance of rebuilding and defending them so that they can guard truths and facts. This is specifically important in a society where social media is dominant. Social media does not necessarily even strive for truth: the goal is rather to get your attention. Zeynep Tufekci, who has done research on how social media affect social movements, concluded by saying that everyone who is concerned about truth, should step up and defend it.



Writer and techno-sociologist Zeynep Tufekci (left) and the moderator Karin Pettersson.



"Fertile grounds for terrorist recruitments are ignorance and despair in social justice. So, to fight terrorists one should build schools", Shirin Ebadi, Nobel Peace Laureate and human rights activist.



The programme of the day entailed talks with panellists, debates, and various interactive features.

NOBEL PEACE LAUREATE SHIRIN EBADI is one of those who have stood up for her conviction. As a human rights activist, she stresses the importance of revealing words that can be deliberately misused by people who want to enforce their personal agenda. Her own life is an example of the price that many people pay for criticising authorities. After she was put into jail in Iran for her work as a human rights lawyer, she now lives in exile. She stressed that the truth needs to be told of the reasons behind world poverty and global terrorism. Fertile grounds for terrorist recruitments are ignorance and despair in social justice.

So, to fight terrorists one should build schools.

ONE THING THAT BECAME CLEAR after this day: regardless of whether one was searching for truth through evidence-based scientific research or claiming something that contradicts a governments' official version of events, the search for truth is essential for humankind. The truth might be inconvenient or make theories obsolete, but within the search itself lays great hope for the future.

NOBEL WEEK DIALOGUE 2017

ATTENDING LAUREATES:

STEVEN CHU, 1997 Physics Laureate

PETER DOHERTY, 1996 Physiology or Medicine Laureate

SHIRIN EBADI, 2003 Peace Prize Laureate

DAVID J. GROSS, 2004 Physics Laureate

MICHAEL LEVITT, 2013 Chemistry Laureate

JOSEPH E. STIGLITZ, 2001 Economic Sciences Laureate

FRANK WILCZEK, 2004 Physics Laureate

OTHER SPEAKERS INCLUDED:

ALICE BAH KUHNKE, Ministry of Culture and Democracy

DANIEL BIRNBAUM, Moderna Museet

SIMON BLACKBURN, University of Cambridge

ROBERT DIJKGRAAF, Institute for Advanced Study

ORLANDO VON EINSIEDEL, Academy Award winning director

EMMA FRANS, Karolinska Institutet

MAGGIE HABERMAN, New York Times

MICHAEL HAYDEN, Chertoff Group

ANISH KAPOOR, Sculptor

KATHERINE MAHER, Wikimedia Foundation

JOANNA NATASEGARA, Film Producer

HELGA NOWOTNY, ETH Zurich

KARIN PETERSSON, Aftonbladet (Since 2018 Director of Public Policy, Schibsted)

BO ROTHSTEIN, University of Gothenburg

ZEYNEP TUFEKCI, University of North Carolina

K. VIJAYRAGHAVAN, Ministry of Science and Technology

PETER WOLODARSKI, Dagens Nyheter

1,658

THE 2017 NOBEL WEEK DIALOGUE HAD A RECORD NUMBER OF 1,658 PARTICIPANTS

1,500,000

1.5 MILLION PEOPLE WERE REACHED THROUGH THE NOBEL PRIZE'S DIGITAL CHANNELS

100,000

TWO OF THE SESSIONS WERE ALSO STREAMED LIVE ON FACEBOOK WITH OVER 100,000 PEOPLE

240

240 STUDENTS ATTENDED THE LECTURE WHICH DAVID J. GROSS (2004 PHYSICS LAUREATE) HELD AT THE UNIVERSITY OF GOTHENBURG THE DAY BEFORE NOBEL WEEK DIALOGUE.

0:-

0 KRONOR WAS THE FEE FOR PARTICIPATION OF THE NOBEL WEEK DIALOGUE



A survivor from Hiroshima shows a photo he keeps in his wallet to Liv Tørrres, CEO of the Nobel Peace Center. The exact same photo appeared in the exhibition.

Ban the Bomb

A woman comes across her own story in an exhibition at the Nobel Peace Center. A man discovers a photograph that he carries in his own wallet as a memento of the day everything changed: the day the atomic bomb was dropped over Hiroshima.

OSLO, 12 DECEMBER 2018: An old man stops in front of an image of a little boy and starts to cry. The boy in the picture is ten years old and carries his dead brother on his back. It is August 1946, and he is waiting in the queue for the crematorium in Hiroshima.

The old man opens his wallet and pulls out a picture; it's the same as the one on the wall. He carries it with him as a memento of the day the bomb was dropped over Hiroshima and changed everything.

Together with around thirty other survivors of Hiroshima and Nagasaki, the old man is visiting the Nobel Peace Center. The day before ICAN is to receive the Nobel Peace Prize at Oslo City Hall for their work to ban nuclear weapons, the group gets a preview of the Peace Prize Exhibition, *Ban the Bomb*. These are poignant moments, especially when they come to the part of the exhibition that deals with the aftermath of the atom bombs over Nagasaki and Hiroshima.

In addition to the historical images, personal belongings of the victims are being exhibited for the first time in Northern Europe. One such object is a bag that belonged to a 13-year-old boy in Hiroshima. His father searched for him in the city for a week but never found his son. The only trace of him was the bag that was found by a neighbour and delivered to the family. In the display case there is also a lunchbox that belonged to a schoolchild, and a clock, stopped at 11.02 am, the precise time the atom bomb detonated over Nagasaki on the 9 August 1945.

The story of around 40 survivors is told on an exhibition wall inlaid with Ipads. Mariko Higashino comes to a halt when she sees herself on the wall. The daughter of a survivor, it wasn't until she reached adulthood that she asked her mother about what really happened on the 6 October 1945. Her mother was 17 years old and was just leaving the house when the bomb went off. She was blown thirty metres away,

but her injuries were not severe enough to prevent her going to the hospital to look for her own mother, Mariko's grandmother, who worked as a nurse. At the hospital, people were coming in with bodies burned black where their skin had peeled off. It was six days before Mariko's grandmother was found. Her eyes had burst out of her head and her nose had all but fallen off. But she survived. Today, both Mariko and her mother are so-called "Hibakusha", survivors bearing witness to one of the darkest chapters in world history.

"I didn't know that my story was part of the exhibition. It was very moving to come here to Oslo and discover that," said Mariko. "We think it's important to tell our story to make the world realise how dangerous nuclear weapons are."

The Peace Prize Exhibition **Ban the Bomb** was opened by ICAN's executive director, Beatrice Fihn, on December 12 and will be shown at the Nobel Peace Center until November 25, 2018.



The wrist watch was found in the ruins of a house close to the epicentre of the explosion. It stopped at 11.02 am, the exact time that the atomic bomb exploded over Nagasaki on August 9, 1945.

This lunch box belonged to Yuso Ikuta, a student from Hiroshima Prefectural Industry School.



An original sign from the Hanford Site, a nuclear complex in Washington State, western United States.

Setsuko Thurlow, survivor of Hiroshima and Beatrice Fihn, Executive Director of ICAN, visited the Nobel Peace Center and the exhibition *Ban the Bomb*.





Visiting the Nobel Museum in the fall of 2017 - Herta Müller, Nobel Laureate in Literature.



The exhibition *Literary Rebellion*, by photographer Kim Manresa and journalist Xavi Ayén is on display at the Nobel Museum until September, 2018. Wole Soyinka and Toni Morrison are two Literature Laureates portrayed in the exhibition.

The Art of Portraying a Nobel Laureate

Urgent issues and a moving story lay the groundwork for a good exhibition. One example of this is *Literary Rebellion*, which tells visitors about twelve Nobel Laureates using the pen against oppression.

THE NOBEL MUSEUM in Gamla Stan, Stockholm, receives around a quarter of a million visitors per year. Aside from a small permanent exhibition on Alfred Nobel himself and a chronological exposition of the history of the Prize and the Laureates' endeavours throughout the years, the temporary exhibition *Literary Rebellion* was also on display during 2017.

The exhibition is based upon interviews and photographs of twelve Nobel Laureates in Literature, and the theme is *the pen against oppression*.

"I hope the exhibition stirs visitors' curiosity in these twelve courageous authors who have all dared to tell the rest of the world about difficult notions," says Karin Jonsson, the curator of the exhibition. She recently welcomed one of the authors included in the exhibition, Herta Müller, to the museum.

"It was fantastic to have the opportunity to show her the exhibition," Jonsson says. "She is a great example of what literary resistance looks like. Her work is based around daily life in a dictatorship, and her authorship keeps coming back to defend freedom of thought and expression. Her determined and poetic language is in stark contrast to the oppression and bureaucratic formulations of the State."

The exhibition has open bookshelves so people can take a book, sit down and read for a while in order to form their own opinion. "Hopefully it will help the visitors discover new authors and books that they will want to find out more about," Jonsson says.

THE UNIQUE ASPECT of the well-attended Nobel Museum, in Museum Director

Olov Amelin's view, is that it builds upon a particular individual's perception of what is important for the world and its development. "As we know, Alfred Nobel's interests covered a broad spectrum – from physics, chemistry and medicine to literature and peace – which means there is a rich pool for us to dip into in terms of ideas for exhibitions. There is no end to the ideas!"

Olov Amelin has worked with museums since the mid-1980s, and is inspired by the current rapid developments in presentation technology. At the same time, he points out that the same basic condition is required to produce a good exhibition.

"There always needs to be a striking story that captivates and moves people," he explains.

Unique Objects and Stories



The photo of Einstein made the visit to the Nobel Foundation an emotional one for Kip Thorne.

LIGO – A DECADES-LONG STORY OF PERSEVERANCE AND TEAMWORK

A CENTURY AGO, Nobel Laureate Albert Einstein predicted the existence of gravitational waves. But he also thought that we would never have the means to prove their existence. One hundred years later, a collaboration of more than 1,000 physicists finally observed these gravitational waves for the very first time after decades of research. This teamwork led to Rainer Weiss, Barry Barish and Kip Thorne receiving the Nobel Prize in Physics. “It was a half-century quest,” Kip Thorne said. When Thorne arrived at the Nobel Foundation to collect his medal, he was overcome with emotion while looking at the image of Einstein and his signature. It’s a story of collaboration, teamwork and dedication. “I really think of myself as more of an icon for the collaboration,” said Thorne.

The precise moment that the recipients of the 2017 Nobel Prize in Physics were announced, scientists at

the MIT LIGO Scientific Collaboration immediately broke into celebration. They had awoken early to watch the coverage live from Stockholm and were rewarded with fantastic news. Just before 6 am in Cambridge, Massachusetts, this year’s Physics Laureates were announced: Rainer Weiss, Barry Barish and Kip Thorne, all part of the LIGO-Virgo Collaboration. All three Physics Laureates have honoured the huge LIGO-Virgo collaborative



Members of MIT LIGO celebrating after the announcement of the 2017 Nobel Prize in Physics in October.

effort – involving 1,200 scientists worldwide – that led to gravitational waves finally being captured. “This is a magnificent success of international collaboration, of the ability to bring in the talents that we need – whether it’s technical, whether it’s data analysis, whether it’s theoretical – working together side-by-side,” said Barry Barish. “They’re all really the reason that we are here at all,” added Rainer Weiss.

“This is a magnificent success of international collaboration.”

THE REMAINS OF THE DAY

THIS YEAR'S NOBEL LAUREATES got together at the Nobel Museum, on December 6, together with their families, to commence the extensive programme of the Nobel Week. They also donated artefacts to the museum's collection.

Kazuo Ishiguro shares the story behind the plate he's donated to the Nobel Museum from the set of the film adaptation of *The Remains of the Day*. "It looks like a piece of silver from an English stately home, and it looks like it's quite heavy. But it's actually much lighter – it's a piece of Hollywood junk!". He adds: "I went on set one day in 1991 and had lunch in a little trailer with Anthony Hopkins and Christopher Reeve in Hopkin's trailer, and I came out and I picked it up from somewhere... I remember it as the day when I had lunch with Hannibal Lecter and Superman!". Kazuo Ishiguro wrote his



Hollywood prop from the filming of *The Remains of the Day*, donated by Kazuo Ishiguro.

most renowned novel *The Remains of the Day* in 1989. It was turned into a film with Anthony Hopkins acting as the duty-obsessed butler Stevens and Christopher Reeve as Congressman Jack Lewis.

"It's a piece of Hollywood junk!"

THE COFFEE MUG

THE 2017 LAUREATE IN ECONOMIC SCIENCES, Richard Thaler, used coffee mugs to teach us about irrational behaviour – and now he has donated one to the Nobel Museum. "This is the last one I had of the original mugs that we used in the experiment," he said. We normally want more money for selling something we own than we are prepared to pay in order to buy exactly the same item.

In 1990, Thaler, Daniel Kahneman (2002 Economic Sciences Laureate) and Jack Knetsch conducted a famous experiment where a number of coffee mugs were handed out to a group of randomly chosen students. They were then allowed to choose whether they wanted to sell the mug to someone in a second group who had not received a mug. On average the two groups should value the mugs equally high, and around half the mugs should be sold.



With the help of coffee mugs Thaler intended to prove the hypothesis that people ascribe a higher value to things merely because they own them, known as the Endowment Effect.

However, it turned out that far fewer than half the mugs changed hands. Thaler said: "We needed some object that we could give to students that they would like. It couldn't be too expensive and it couldn't be too heavy. I bought a couple hundred of these coffee mugs." He added: "The amusing thing about this is there have now been hundreds of experiments using this basic paradigm. Virtually every single one uses coffee mugs! This theory has nothing to do with coffee mugs!"

"This theory has nothing to do with coffee mugs!"



Richard Henderson donated a model of the bacteriorhodopsin protein, manufactured in 1993 to the Nobel Museum during the first official event of the 2017 Nobel Week.

REVOLUTIONARY MICROSCOPE TECHNOLOGY

A PICTURE IS A KEY TO UNDERSTANDING. Scientific breakthroughs often build upon the successful visualisation of objects invisible to the human eye. However, biochemical maps have long been filled with blank spaces because the available technology has had difficulty generating images of much of life’s molecular machinery. Cryo-electron microscopy changes all of this. Researchers can now freeze

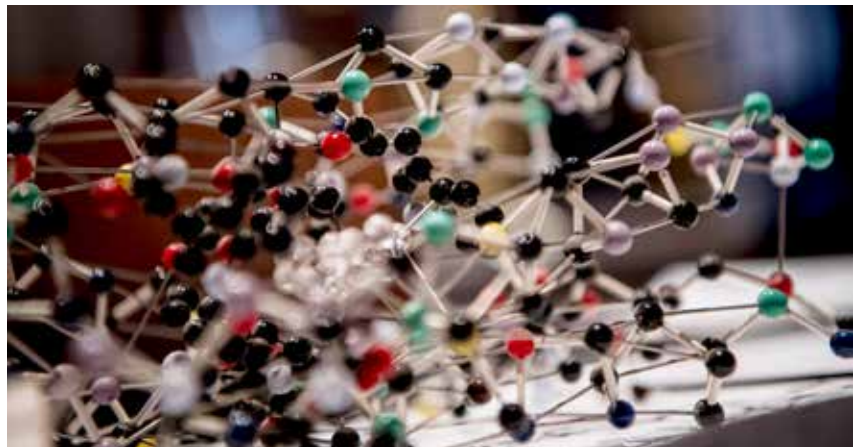
biomolecules mid-movement and visualise processes they have never previously seen, which is decisive for both the basic understanding of life’s chemistry and for the development of pharmaceuticals.

Electron microscopes were long believed to only be suitable for imaging dead matter, because the powerful electron beam destroys biological material. But in 1990,

Richard Henderson succeeded in using an electron microscope to generate a three-dimensional image of a protein at atomic resolution. This breakthrough proved the technology’s potential.

Richard Henderson donated a model of the bacteriorhodopsin protein, manufactured in 1993.

“Scientific breakthroughs often build upon the successful visualisation of objects invisible to the human eye.”





The first prototype of an instrument designed by Michael Young in the early 1980s to monitor the daily biological clock of *Drosophila* (fruit fly) was donated to the Nobel Museum.

AN INSTRUMENT TO TRACK FRUIT FLY ACTIVITY

THE FIRST PROTOTYPE of an instrument designed by Michael Young in the early 1980s to monitor the daily biological clock of *Drosophila* (fruit fly) was donated to be part of the Nobel Museum collections of artefacts.

The instrument has five different chambers to execute experiments with the same number of flies. Flies are active during day and inactive during night. The flies' movements – how many times it passes through an infrared beam – are recorded. Analysing thousands of mutant flies in this manner eventually yields some abnormal daily biological clocks. Today you can buy a device like this with up to 100 chambers.

Michael Young shared the 2017 Nobel Prize in Physiology or Medicine with Jeffrey Hall and Michael Rosbash, all of them using fruit flies as a model organism. They made discoveries that explain how plants, animals and humans adapt their biological rhythm so that it is synchronised with the Earth's revolutions.

Michael Rosbash praised the tiny fly in his Nobel Banquet Speech: “All three of us began our professional lives with a love of laboratory and experiment, and we have worked almost exclusively with the fruit fly *Drosophila*. Remarkably, this is the fifth Nobel Prize in Physiology or Medicine for

this tiny insect, beginning in 1933 with the pioneer T.H. Morgan. He was also the first American to receive this Nobel Prize. This history underscores the importance of *Drosophila*, model organisms and basic research more generally to scientific progress.



“Remarkably, this is the fifth Nobel Prize in Physiology or Medicine for this tiny insect.”

Alfred Nobel

Inventor, Entrepreneur and Businessman

Alfred Nobel was an inventor, entrepreneur and a very successful businessman who continually travelled between his factories. Nobel built up an enormous fortune that he chose in his will to dedicate to those who had contributed to the greatest benefit to mankind. A prize that would reward outstanding efforts within the different fields that he was most involved in during his lifetime.

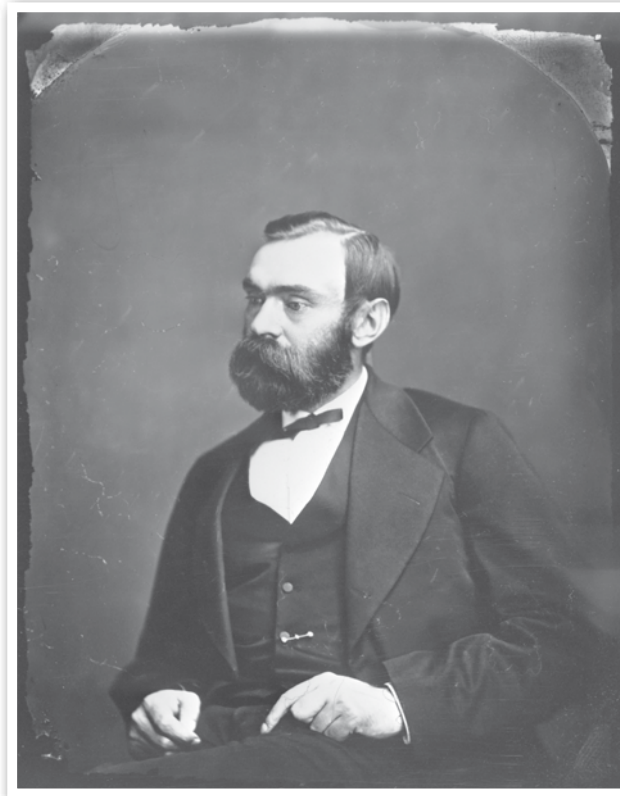
ALFRED NOBEL WAS BORN in Stockholm in 1833. His father, Immanuel, was an inventor and engineer who had varying success. His mother, Andriette, was described as energetic and intelligent, and when Immanuel went to Russia after a bankruptcy, she was forced to support the family. When Immanuel established a company in the war industry in 1842, the family could finally reunite.

THE NOBEL BROTHERS were given a first class education by private tutors, and at the age of 17 Alfred spoke five languages: Swedish, Russian, English, French and German. At the time, he was interested in poetry and even wrote his own works. But his father disliked Alfred's interest in literature and sent him abroad for studies that focused more on the natural sciences. He visited a number of countries and finally ended up in Paris, where he studied chemistry under Professor T. J. Pelouze. It was there that Alfred first came into contact with nitroglycerine, which was invented by the Italian Ascanio Sobrero. Nitroglycerine was a highly explosive liquid considered too dangerous to be useful.

Alfred Nobel returned to Sweden and soon began experimenting with nitroglycerine, both in its production and in making the substance reliable enough to use in industry. The work was dangerous and an accident killed several people, including his younger brother Emil.

ALFRED NOBEL WAS FINALLY able to solve the problem of the substance's volatility by mixing nitroglycerine with a type of sand, kieselguhr. The result was a mouldable mass that was easy to package and that could be shipped

Krümmel in Germany and Ardeer in Scotland were some of the first. He eventually built just over 90 factories in 20 countries. At his death, he had 355 patents and left behind an enormous fortune. Nobel was a man of his time, embodying many of the Enlightenment's central ideas, both in his practical work and in his philosophy. He combined his religious doubt with a belief in the natural sciences and was a true optimist about technology and an entrepreneur who actively took part in industrialisation.



ALFRED NOBEL DIED on 10 December 1896 in his home in San Remo, Italy, and his will attracted significant attention when it was published. He had allocated most of his fortune to rewarding outstanding efforts within physics, chemistry, physiology or medicine, literature and peace. The will was challenged by relatives, authorities in several countries and by Swedish King

and handled safely. It was patented in 1867 under the name dynamite. With the patenting of different forms of dynamite together with detonators, which he had invented previously, Alfred Nobel achieved his major technical and industrial breakthroughs.

ALFRED NOBEL LED the rapid exploitation of his inventions and built factories and laboratories around the world — Vinterviken in Sweden,

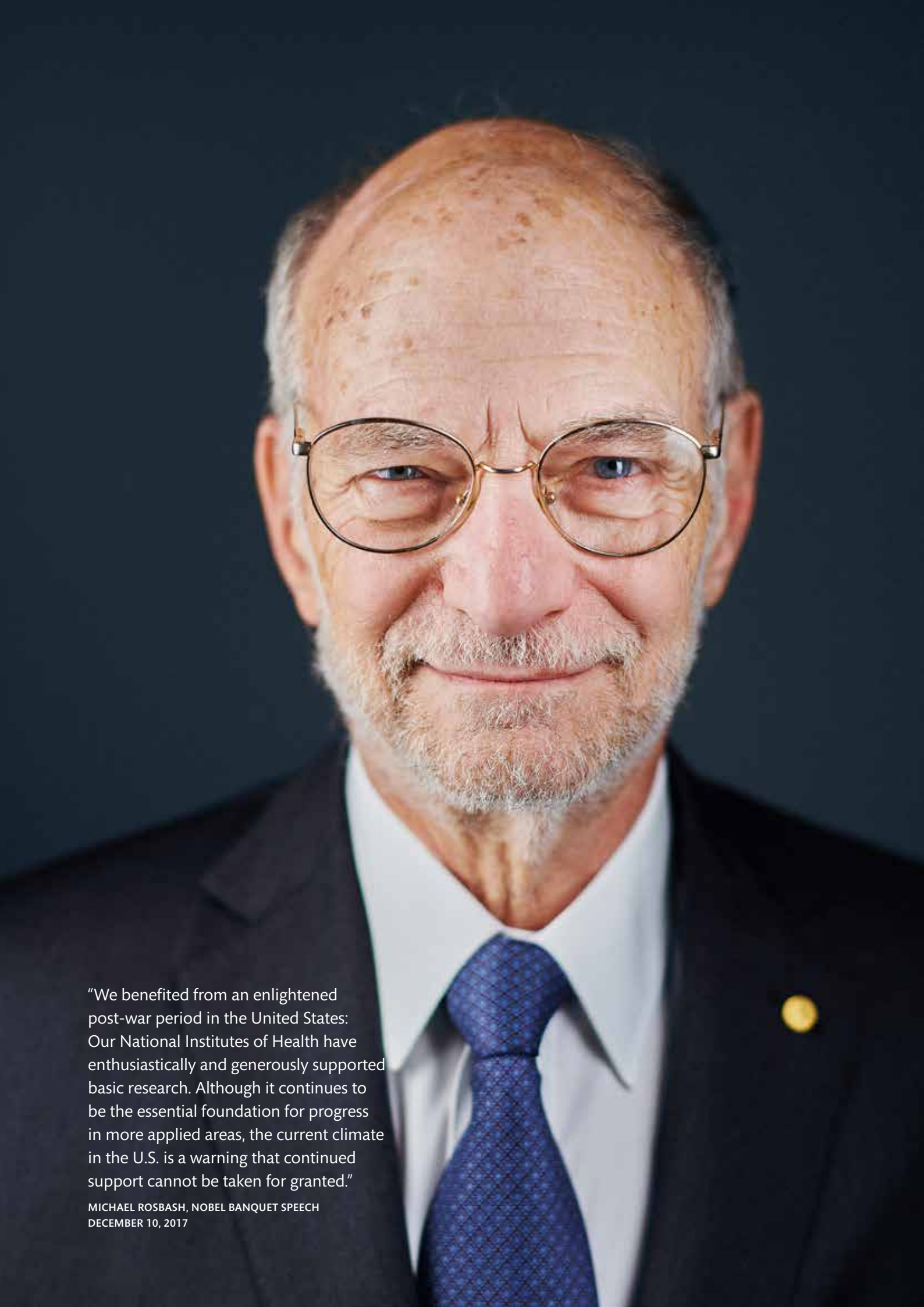
Oscar II. Thus began a long process on the road to realising Alfred Nobel's vision. After a few years of complicated legal processes led by the executors of the will, Ragnar Sohlman and Rudolf Lilljequist, the Nobel Foundation was established in 1900 and the first Nobel Prizes were awarded the following year.



“We live today in a time of growing tribal enmities, of communities fracturing into bitterly opposed groups. Like literature, my own field, the Nobel Prize is an idea that, in times like these, helps us to think beyond our dividing walls, that reminds us of what we must struggle for together as human beings.”

KAZUO ISHIGURO, NOBEL BANQUET SPEECH
DECEMBER 10, 2017

PHOTO: ALEXANDER MAHMOUD



“We benefited from an enlightened post-war period in the United States: Our National Institutes of Health have enthusiastically and generously supported basic research. Although it continues to be the essential foundation for progress in more applied areas, the current climate in the U.S. is a warning that continued support cannot be taken for granted.”

MICHAEL ROSBASH, NOBEL BANQUET SPEECH
DECEMBER 10, 2017

GROWING OPERATIONS

THE NOBEL FOUNDATION carries out its task of safeguarding the financial position of the Nobel Prize and maintaining the intangible assets that have evolved over time from a perspective of perpetuity. Ultimately, this is a matter of ensuring that the Nobel Prize can always continue to be awarded as a way of honouring significant discoveries and contributions to the greatest benefit to mankind.

During the 2010s, the Foundation has worked hard to strengthen the finances of the Nobel Prize. This has included developing a good investment process as well as cutting costs. Its work has borne fruit, and the Foundation's financial situation has improved significantly since 2011, mainly due to good returns on assets but also because of cost reductions.

The market value of the Nobel Foundation's invested capital has increased by one and a half billion kronor over the past six years, from less than SEK 3 billion in 2011 to about SEK 4.5 billion at the end of 2017 – primarily as a consequence of the Foundation's successful investment activities. This, in turn, is mainly but not entirely due to the generally good performance of financial markets, since the Foundation's earnings have been better than those of similar Nordic investors.

Operating expenses as a share of invested capital have decreased from 3.8 to 2.5 per cent between 2005 and 2017. Today, the level of operating expenses is also nearly 20 per cent lower than in

2011, see further info on page 25. Cost savings have been implemented within all of the Foundation's major expense categories: the total Prize amount, the work of the Nobel Committees and especially central administration and the Nobel Week in Stockholm.

THIS IMPROVED FINANCIAL SITUATION does not imply that the Nobel Foundation has no financial challenges. Today's Nobel Prize amount is about the same as when the Prize was established, taking into account inflation in Sweden. In retrospect, the Prize has essentially fallen by about two per cent annually over the past 100 years compared to wage and salary growth. A continuation of this trend is deemed undesirable, and the Board of Directors of the Nobel Foundation has thus declared as its ambition that the Prize must increase at the same pace as real wages.

Reinforcing the financial pressures on the Foundation is the fact that aside from the Prize, its main expenses are salaries, which in this kind of operations will hardly be matched by productivity improvements. Foundation expenditures also tend to increase as a result of new needs due to the role of the Nobel Prize as one of the world's most prestigious awards, with a highly attractive brand. Among other things, this requires more extensive communications activities and poses difficult legal issues for the Foun-

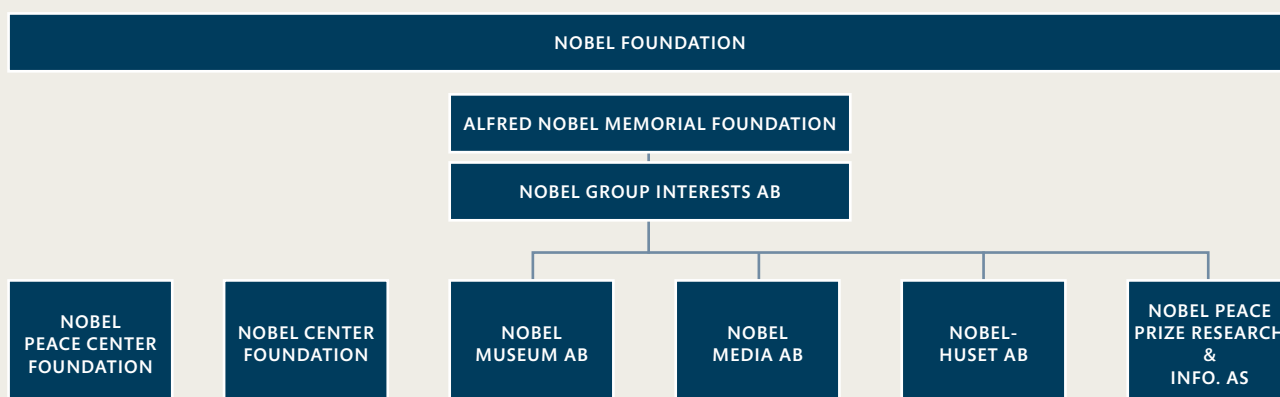
ation. Another part of the picture is that new scientific prizes are being established, often with substantially higher prize amounts.

To enable it to manage these challenges, the Foundation will require good returns on its invested capital, which may be difficult over the next few decades in light of today's high financial market valuations. In addition, continued good cost control will be needed. During 2017, the Board of Directors thus decided that the Nobel Foundation will also work proactively to obtain donations.

MAINTAINING INTANGIBLE ASSETS is complex and includes many different kinds of efforts. The most important, of course, is the work carried out by the prize-awarding institutions to select the Nobel Laureates. The strategy document for the Nobel sphere approved in 2016 also highlights the importance of the externally funded organisations that have been formed for the purpose of engaging, inspiring and disseminating knowledge to a broad general public based on the Nobel Prize and the Laureates' discoveries. The organisational structure of these entities can be seen below.

Today the activities of these organisations are successful and growing. The tables on page 25 presents, for example, that the revenues of the various entities have increased significantly. In 2006 the total number of visitors to the Nobel

ORGANISATIONAL STRUCTURE, MARCH 2018





The Nobel Museum is very well-visited, especially at the announcement of the new Nobel Prizes in October.

Museum in Stockholm and the Nobel Peace Center in Oslo was about 200,000. In 2017 they had a total of some 500,000 visitors – an increase of 150 percent during this period.

THERE IS EXTENSIVE INTEREST in the Nobel Prize worldwide. This is clear from the public activities carried out by Nobel Media. Nearly four million individuals follow the Nobel Prize via Facebook, 318,000 via Twitter and 100,000 via Instagram. The Nobel Prize has its largest number of followers in the United States and India; Sweden only accounts for a fraction. These followers are distributed evenly between the sexes, and the biggest age category is 18–35 years old. This young audience is also an important target group for the meetings on crucial issues for our future that Nobel Media organises in Sweden and abroad, with the ambition to engage people and generate dialogue between science and society.

The museums in Oslo and Stockholm have traditionally been financed largely with grants from national or

local authorities as well as from educational and philanthropic organisations. In recent years, however, their own revenues from entrance fees, business activities and other sources have become increasingly important, providing a more stable economic base. Nobel Media’s operations are funded mainly from support by corporate partners and sponsors. In recent years, it has built up a group of international partners – today including 3M, Ericsson, Scania and Volvo Cars. Other sponsors are connected to the respective public entities or specific activities.

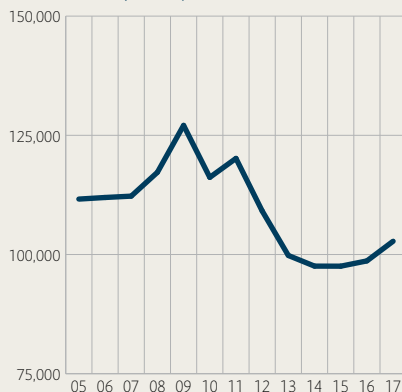
Overall, the finances of these operating entities have become stronger – which is attributable to new financing models, but mainly due to strong interest in the Nobel Prize. This interest is evident both in the numerous followers on digital channels and the growing number of visitors to the museums. All indications are that there is no conflict between the various platforms. On the contrary, interest in physical meetings and lively dialogues seems to be increasing among those who use digital media.

BASED ON POSITIVE EXPERIENCES from the existing activities, major new steps are now under way towards creating the new Nobel Center in Stockholm. It will offer a broad array of public activities with a focus on exhibitions, programme activities and education, but it will also serve as a base for growing international activities.

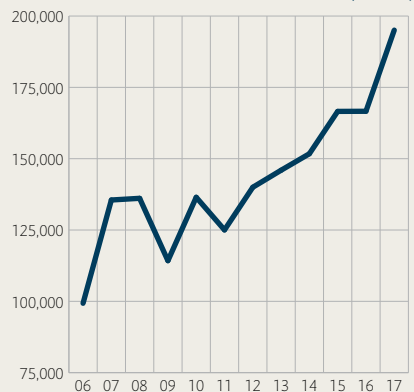
A survey conducted in 2017 by IPSOS, an international market research firm, indicated strong interest among the general public. It showed that 53 per cent of Stockholm residents were very or fairly positive towards the plans for a Nobel Center, while 24 per cent were neither positive nor negative and 18 per cent were negative. Younger people were more positive than the older generation.

THE NOBEL PRIZE can play a positive role in highlighting the value of science, humanism and peace efforts in our era. This is one of the central concepts in the will of Alfred Nobel, and it also permeates the broad outreach activities that have been developed for the purpose of engaging, inspiring and spreading knowledge in the spirit of the Nobel Prize.

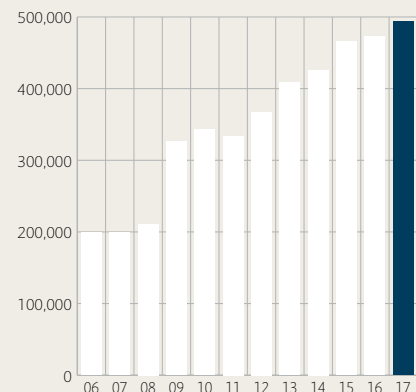
THE NOBEL FOUNDATION, OPERATING EXPENSES, NOMINAL VALUES, 2005–2017 (SEK K)*



NOBEL MUSEUM AB, NOBEL PEACE CENTER FOUNDATION AND NOBEL MEDIA AB, REVENUES 2006–2017 (SEK K)



THE NOBEL MUSEUM AB AND THE NOBEL PEACE CENTER FOUNDATION, VISITORS 2006–2017



*) The raise of the prize sum explains the increase in 2017. All other costs are continuously decreasing.



The Nobel Prize Award Ceremony does by tradition take place on December 10, the day that Alfred Nobel passed away.



In October each year the new Nobel laureates are announced and there is interest from media globally. Thomas Perlmann, secretary of the Nobel Assembly at Karoliska Institutet and the Nobel Committee for Physiology or Medicine does many interviews this time of year.



Olga Botner, member of the Physics Committee, presented the discovery which was awarded the 2017 Nobel Prize in Physics.

THE INSTITUTIONS THAT SELECT NOBEL LAUREATES

IN HIS WILL, Alfred Nobel stipulated which institutions should select Nobel Laureates in each prize category. Presumably, he chose the academic institutions that he considered to be best suited to the task. Nobel was less specific regarding the organisation that was to manage his assets. What would later become the Nobel Foundation was only mentioned in his will as a fund.

The Nobel Prize's internationally unique position is largely due to the century-long independence of the prize-awarding institutions in selecting Nobel Laureates. The fact that these organisations have engaged exceptionally knowledgeable individuals within their own organisations as well as extensive international expertise has played a vital role in achieving this standing.

THE ROYAL SWEDISH ACADEMY OF SCIENCES selects the Nobel Laureates in Physics and Chemistry. It also selects the recipients of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, established in 1968 on the occasion of the Riksbank's (Sweden's central bank) 300th anniversary. The Academy has about 450 Swedish and about 175 foreign members.

The Nobel Assembly at Karolinska Institutet selects the Nobel Laureates in Physiology or Medicine. The Assembly has 50 members.

The Swedish Academy selects the Nobel Laureates in Literature. The Academy has 18 members.

All of these institutions appoint special Nobel Committees of three to five members, a secretary and, in some cases, also deputies. Members are elected for a term of three years and may serve for a maximum of three consecutive terms. The

Nobel Committees evaluate nominations for the respective Nobel Prizes and extensively examine a selection of the nominees.

They subsequently present their proposals for Nobel Laureates to the respective prize-awarding institution. The actual decision as to who will be awarded Nobel Prizes is made not by the respective Nobel Committees, but by all members of the prize-awarding institution.

For the Peace Prize, Alfred Nobel referred to the Storting (national parliament) in Norway in his will. The Storting appoints the five members of the Norwegian Nobel Committee. The Norwegian Nobel Committee differs from the other prize-awarding institutions in the sense that it is responsible both for evaluating the nominees and selecting the recipient.

IN SEPTEMBER OF EACH YEAR the respective Nobel Committees send out individual invitations to thousands of members of academies, university professors and other scientists in numerous countries, previous Laureates, members of parliamentary assemblies and others. The invitation recipients are chosen so to ensure that as many countries and universities as possible are represented over time. A much broader group can make nominations for the Nobel Peace Prize without receiving an invitation from the Norwegian Nobel Committee compared to the other prizes. This nomination procedure for the Nobel Prize differs from many other prizes where it is the responsible committee which appoints both the nominees and the recipients.

Those who have been invited are able to nominate candidates for the coming year. Nominations, which are confidential, must be received by the Committees no later than 31 January of the year in which

the prize will be awarded.

The procedures may vary somewhat between the Nobel Committees, but the selection process is largely the same across all prize categories. The Committees first confirm that the nominations were submitted by individuals who have the right to nominate. Since a nomination is only valid for the current year, it is common for some candidates to be nominated several times. Some candidates may also be nominated by more than one nominator in the same year. Nominations are recorded and compiled in a list. This list is processed in a series of phases during the spring. Initially, it consists of a large selection of names, which is then narrowed down to a smaller number of candidates. These candidates are then evaluated in depth with the assistance of domestic and foreign experts. During the summer the Nobel Committee members produce a comprehensive report detailing the candidate or candidates proposed as the recipient(s) of the year's Nobel Prize. The proposal is presented to the members of the prize-awarding institution in September. The final selection of Nobel Laureates takes place by a vote. The decisions are announced by the respective prize-awarding institutions immediately after the vote, usually during the first half of October. According to the Nobel Foundation's statutes, prizes can be equally shared between two works, though by not more than three individuals. All documents related to the nomination process and evaluations remain confidential for 50 years.

More information about the prize-awarding institutions is available on their respective websites:

www.kva.se
www.nobelprizemedicine.org
www.svenskaakademien.se
www.nobelpeaceprize.org

SELECTING NOBEL LAUREATES



THE NOBEL PRIZE AWARD CEREMONY. PHOTO: PI FRISK.
INTERVIEW. PHOTO: ALEXANDER MAHMOUD

THE NOBEL FOUNDATION

THE NOBEL FOUNDATION, a private institution established in 1900, has ultimate responsibility for fulfilling the intentions in Alfred Nobel's will. The main mission of the Nobel Foundation is to manage Alfred Nobel's fortune in a manner that ensures a secure financial standing for the Nobel Prize over the long term and that the prize-awarding institutions are guaranteed independence in their work of selecting recipients. The Foundation is also tasked with strengthening the Nobel Prize's position by administering and developing the brands and intangible assets that have been built up during the Nobel Prize's history, which spans more than 100 years. The Nobel Foundation also strives to safeguard the prize-awarding institutions' common interests and to represent the Nobel sphere. In the past two decades a number of public operations have been developed with the aim of inspiring and disseminating knowledge about the Nobel Prize.

The Nobel Foundation has overall responsibility for the Nobel Week that takes place in Stockholm in December. This week has a busy schedule for the Nobel Laureates, culminating in the Nobel Prize Award Ceremony and the Nobel Banquet held on 10 December. Both of these events are planned and run by the Foundation.

THE NORWEGIAN NOBEL INSTITUTE was established in 1904 and acts as the Norwegian Nobel Committee's secretariat and the Nobel Foundation's branch

office in Oslo. The Institute administers the activities connected with the awarding of the Nobel Peace Prize, including press conferences, the Award Ceremony and the Banquet.

THE MARKET VALUE of the Nobel Foundation's total invested capital amounted to SEK 4,496 m (4,241) at the end of 2017.

Portfolio capital was allocated among 50 (50) per cent equity funds, 7 (7) per cent property funds, 17 (17) per cent fixed income assets, 25 (26) per cent alternative assets and 1 per cent accrued currency hedging income.

The year's return on portfolio capital was 8.7 per cent.

During 2017 the overall sum of all Nobel Prizes and operating expenses was SEK 102.6 m (97.2). This was divided among four main categories: the Prizes, SEK 45 m; compensation to the Prize Committees, SEK 27.1 m; the Nobel Week in Stockholm and Oslo, SEK 15.3 m; plus administration etc., SEK 15.1 m.

Additional information about the Nobel Foundation's financial management is available in the Foundation's 2017 Annual Report, which is available at Nobelprize.org.

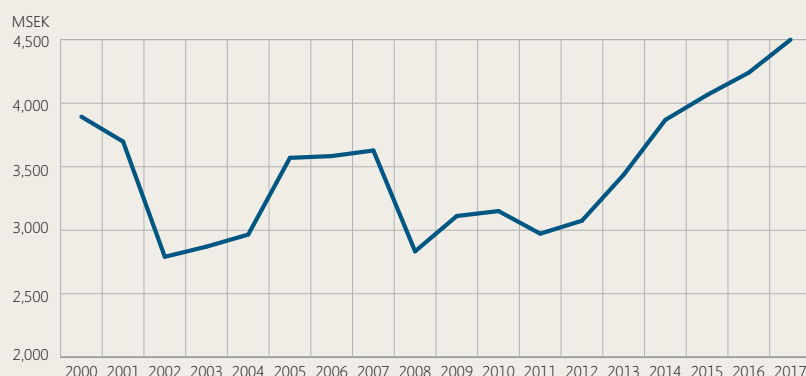
Symposium activities as well as other large interdisciplinary meetings in the Nobel sphere are prepared by the Nobel Foundation's Programme Committee, which includes representatives of the prize-awarding institutions and the Nobel Foundation. During 2017 the following Nobel Symposia took place: NS 162,

Microfluidics, organisers: Professors Johan Elf and Thomas Laurell, Sångå Säby Conference Centre, Svartsjö, Sweden, June 5–8, 2017 and NS 163 *Protein Folding from Molecular Mechanisms to Impact on Cells*, organiser: Professor Pernilla Wittung-Stafshede, Sångå Säby, June 11–14, 2017.

THE NOBEL PRIZE-AWARDING institutions; the Royal Swedish Academy of Sciences, the Nobel Assembly at Karolinska Institutet, the Swedish Academy and the Norwegian Nobel Committee, appoint 15 trustees to the Nobel Foundation, for two calendar years at a time. Six representatives are appointed by the Academy of Sciences and the other prize-awarding institutions appoint three each. The Academy of Sciences also appoints four deputies and the other institutions appoint two deputies each. The trustees elect a chairman from their own number. The most important task of the trustees is to appoint the Nobel Foundation's Board and to audit the Nobel Foundation's accounts.

THE NOBEL FOUNDATION'S BOARD, which is based in Stockholm, consists of seven members and two deputy members. Board members and deputies are appointed for a term of two years each. From among its own members, the Board chooses a Chairperson, a Vice-Chairperson and an Executive Director.

THE MARKET VALUE OF THE NOBEL FOUNDATION'S INVESTED CAPITAL, NOMINAL VALUE (2000–2017)



The market value of the Nobel Foundation's invested capital fell during the IT crash (2000–2003) and the recent financial crisis (2007–2008), which was mainly due to a high allocation to equities. In recent years, several changes have been made in the investment strategy, among other things a larger share of the capital has been invested in alternative assets. From the year 2011 the capital has grown from 3 billion to 4.5 billion SEK at the end of the year 2017.



All 2017 Nobel Laureates present in Stockholm visited the Nobel Foundation for a reception to end the Nobel Week. The Peace Prize awarded organisation ICAN was represented by their Executive Director Beatrice Fihn and Josefina Lind from the Swedish Physicians Against Nuclear Weapons organisation.

“The values expressed in Alfred Nobel’s will are still relevant today. Humanistic values, critical thinking, the search for scientific facts and true knowledge must be the basis of our actions and decisions.”

**CARL-HENRIK HELDIN,
CHAIRMAN OF THE BOARD
OF THE NOBEL FOUNDATION,
IN HIS SPEECH AT THE
NOBEL PRIZE AWARD CEREMONY**



The Nobel Foundation is located at Sturegatan 14 in Stockholm.

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Tomas Nicolin, MSc

Gunnar von Heijne, Professor, Secretary of the Nobel Committee for Chemistry, Deputy Member

Gunnar Ingelman, Professor, Secretary of the Nobel Committee for Physics, Deputy Member



NOBELSTIFTELSEN

The Nobel Foundation

Number of employees: 11

Executive Director: Lars Heikensten, Dr

Established: 1900

Corporate ID No.: 802002-4462

Address: Sturegatan 14, Stockholm, Sweden

Contact: media@nobel.se, +46 (0)8-663 09 20

Website: www.nobelprize.org/nobel_organizations/nobelfoundation/

NOBEL MEDIA AB

NOBEL MEDIA SPREADS KNOWLEDGE

about Nobel Prize-awarded achievements and stimulates interest in science, literature and peace in line with Alfred Nobel's vision. The company's operations have two main pillars. The first is digital dissemination and content publishing on the official Nobelprize.org website as well as through social media. The second is international, inspirational events such as Nobel Week Dialogue, Nobel Prize Dialogue, Nobel Prize Series and Nobel Prize Inspiration Initiative – all of them featuring Nobel Laureates. Nobel Media also produces the annual Nobel Prize Concert in Stockholm and manages a portfolio of publishing licenses.

During the year Nobel Media has put efforts to continually find new ways to convey powerful stories linked to the Nobel Prize digitally to reach a worldwide audience. The official Nobel Prize account on Facebook reached an impressive 3.8 million by the end of the year.

THE ANNUAL, PUBLIC EVENT Nobel Week Dialogue took place in Gothenburg on December 9 and presented seven Nobel Laureates, thought-leaders and delegates to discuss one of the hottest topics of our time: *The Future of Truth*. The interest was high which was shown by that the 2017 Nobel Week Dialogue had a record number of 1,658 participants. During this day alone, more than 1.5 million people were reached when selected content from the Nobel Week Dialogue was published via Nobel Prize's digital channels. The full day was also broadcasted live on the Swedish public service television broadcaster (SVT).

Nobel Prize Inspiration Initiative creates closer contacts between the Nobel Laureates and the global research community. In 2017 events were held in Germany, Brazil, Norway, Sweden and Spain. Nobel Laureates took part in lectures, roundtables and panel discussions in ten cities in total. The Nobel Prize Inspiration Initiative focuses specifically on informal interactions between Nobel Laureates and young scientists. The insightful exchanges from these events are filmed and made available online to a wider audience.

During January 9–14, Nobel Prize Series India 2017 was held, with the theme *Science Impacts Life*. The programme was Nobel Media's most ambitious so far in several aspects, including number of participating Nobel Laureates and number of activities as well as audience reached and media coverage. Nine Nobel Laureates took part in conferences, lectures, roundtables and other meetings together with students from several universities, business leaders, politicians and other guests. The programme included the Nobel Museum's exhibition *The Nobel Prize: Ideas Changing the World*.

There were two Nobel Prize Dialogues arranged internationally during 2017: one in Tokyo on February 26 and one in Seoul on October 30. The theme of the Nobel Prize Dialogue in Tokyo was *The Future of Intelligence*. Five Nobel Laureates came together with business leaders, policy makers and world-class academics for discussions. The conference gathered a combination of intellectuals discussing artificial and human intelligence, both in plenary presenta-

tions and panel discussions. For the first time ever, a Nobel Prize Dialogue was organised in Seoul. The theme was *The Age to Come*. During the dialogue, the challenges of an ageing population were addressed both from an individual and a global perspective.

SVT PRODUCED the annual live broadcasts from the Nobel Prize Award Ceremony and Banquet in Stockholm, while Norwegian Television (NRK) produced the annual Nobel Peace Prize Award Ceremony in Oslo. International distribution rights of live broadcasts are managed by Nobel Media and distributed via global news agencies – such as Reuters, APTN and the European Broadcasting Union (EBU). SVT also produced a live broadcast from the Nobel Prize Concert in Stockholm.

NOBEL MEDIA CONTINUED its long-term Nobel International Partnership with 3M, Ericsson, Scania and Volvo Cars. During the year Nobel Media has arranged several Nobel Prize Inspiration Initiative events with AstraZeneca. Furthermore, Nobel Media has collaborated with various companies and organisations for events held in Sweden and around the world, including Carl Bennet AB, the City of Gothenburg, DNB, Department of Biotechnology (Ministry of Science and Technology, Government of India), Government of Gujarat, Japan Society for the Promotion of Science, Korean Academy of Science and Technology, Microsoft, Region Västra Götaland and The Sten A Olsson Foundation for Research and Culture.



Nobel Prize Dialogue in Seoul, *The Age to Come*, focused on the challenges of an ageing population.



Gustavo Dudamel conducted the 2017 Nobel Prize Concert with the Royal Stockholm Philharmonic Orchestra.



Young participants at the Nobel Prize Dialogue in Tokyo, *The Future of Intelligence*, where artificial and human intelligence was discussed.



Nobel Prize Dialogue in Seoul was well attended and much appreciated.



One of the most successful posts on the Nobel Prize's social media channels was this clip of John Legend's performance at the Peace Prize Award Ceremony, which reached over 12 million individuals on Facebook alone.

PROGRAMME 2018

1-5 FEBRUARY

Nobel Prize Series India 2018 in Goa, Mumbai and Delhi.

11 MARCH

Nobel Prize Dialogue, Tokyo.

OCTOBER

Live broadcasts of the announcement of the 2017 Nobel Prizes on Nobelprize.org.

DECEMBER

Interviews with Nobel Laureates and live broadcasts from the Nobel Lectures on Nobelprize.org.

8 DECEMBER

Nobel Prize Concert at the Concert Hall in Stockholm.

For more information: www.nobelprize.org, facebook.com/NobelPrize, twitter.com/NobelPrize

9 DECEMBER

Nobel Week Dialogue in Stockholm.

10 DECEMBER

Live broadcasts of the Nobel Prize Award Ceremonies in Oslo and Stockholm.

11 DECEMBER

Recording of the BBC-produced Nobel Minds Debate.

As part of Nobel Prize Inspiration Initiative (NPII), Nobel Laureates will participate in international seminars held at various universities and research centres around the world.

Nobelmedia

Number of Employees: 19

Turnover: SEK 63,692 K

CEO: Mattias Fyrenius

Established: 2004

Corporate ID No.: 556667-5194

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Website: www.nobelprize.org/nobel_organizations/nobelmedia

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Karin Hedensjö Pettersson, Director of Public Policy, Schibsted

Mia Horn af Rantzien, CEO of SNS

Sara Mazur, Vice President and Head of Ericsson Research

Marie Nilsson, CEO of Mediavision

Olav Njølstad, Professor, Director of the Norwegian Nobel Institute

Juleen Zierath, Professor, associate member of the Nobel Committee for Physiology or Medicine and member of the Nobel Assembly at Karolinska Institutet

Erika Lanner, General Counsel, Nobel Foundation, Deputy Member

NOBEL MUSEUM AB

THE MISSION OF THE NOBEL MUSEUM is to carry out museum, educational, and research activities based on the Nobel Prize and the discoveries and achievements made by the Nobel Laureates. When the Nobel Museum was inaugurated, in the Old Stock Exchange Building in the Old Town of Stockholm in 2001, it was intended to be a temporary solution before moving to permanent locations.

From the very beginning travelling exhibitions met large audiences around the world, complementing the activities in Stockholm. At home the number of visitors has increased steadily and 2017 was the year when the museum welcomed more than a quarter of a million visitors for the first time. This means that the museum already has nearly half of the 600,000 visitors expected in the planned Nobel Center at Blasieholmen.

Even if the realisation of the building may take time, the Nobel Museum is intended to be transferred, from the limited liability company running it today, to the non-profit Nobel Center Foundation. Efforts intensified during the year to prepare for broad Nobel Prize related content that the planned building at Blasieholmen will offer the public.

THE YEAR'S EXHIBITIONS BEGAN with *Experiment – Ideas, Tools and Nobel Prizes*, featuring several interactive elements which allowed visitors to try their hands at pioneering experiments from the history of the Nobel Prizes. September saw the opening of the *Literary Rebellion* exhibition, with images by Spanish photographer Kim Manresa.

A number of smaller exhibitions were also produced during the year, including the annual Nobel Diploma Exhibition, a new section about how Nobel Laureates are chosen, an exhibition about Nobel Literature Laureate Ivo Andric, and the Nobel Museum Bookbinding Exhibition featuring works by Patrick Modiano and Svetlana Alexievich. Students from three arts schools (Fotoskolan STHLM, Beckmans College of Design and the Royal College of Music in Stockholm) found ways to depict the 2017 Nobel Prizes in the exhibition Nobel Creations shown at Kulturhuset and in the Skrapan building in co-operation with Nobel Center c/o.

During the year, the Education Department organised *The Bee Hunt*, with young people analysing the bee's honey stomach as part of the hunt for new antibiotics. A number of Teachers' Evenings

were also held, with a particular focus on the UN's Sustainable Development Goals – a theme that was in great demand from teachers and pupils. One new initiative during the autumn was to publish educational materials in both English and Swedish about the prize-awarded work within a day of the Nobel Prizes being announced. These materials were used by teachers all over the world.

INTERNATIONALLY, the year began with a Nobel Prize Series in Ahmedabad, India. Almost 300,000 visitors saw the exhibition *The Nobel Prize: Ideas Changing the World* over the course of six weeks. In Dubai, the exhibition *The Nobel Prize in Physics: Exploring Matter* – opened in February. The exhibition was staged at Children City, and was arranged as a touring exhibition so that it can also be exhibited at other locations around the world.

THE MUSEUM HAS during the past year undertaken the responsibility for managing the collections of the Nobel Museum in Karlskoga, Björkborn.



Under the tagline *Nobel Calling!* several events open for the general public was hosted in October and a number of them took place at the Nobel Museum.



The Education Department organised a project called The Bee Hunt during 2017.



The exhibition *Nobel Creations* was arranged in association with the Royal College of Music in Stockholm and Beckmans College of Design. This particular creation was inspired by the Literature prize and designed by Clara Nordwall and Robin Söderholm.



Barry C. Barish signed a chair during his visit to the Nobel Museum, according to a longstanding tradition.

Nobel Museum

Number of employees: 43

Turnover: SEK 74,492 K

Executive Director: Olov Amelin, Ph.D

Established: 2004. Prior to this, activities were conducted within the Nobel Foundation Rights Association

Corporate ID No.: 556667-5210

Address: Stortorget 2, Stockholm, Sweden

Contact: info@nobelmuseum.se, +46 (0)8-534 818 00

Website: www.nobelmuseum.se

PROGRAMME 2018

1 FEBRUARY

Opening of the traveling exhibition *Ideas Changing the World* in Goa, India.

4 FEBRUARY

Opening of the traveling exhibition *Connecting Elements*, Dubai, UAE.

26 FEBRUARY

Opening of the Nobel Museum's new Room for Kids in the *Bubble Chamber*.

21 APRIL

Culture Night. Theme: *Literary Rebellion*.

28 SEPTEMBER

Opening of the exhibition *The Right to Freedom – Martin Luther King, Jr.*

OCTOBER

Announcement of the 2018 Nobel Prizes.

OCTOBER

Presentation of the 2018 Nobel Prizes.

NOVEMBER

Bookbinding Exhibition.

10 DECEMBER

Celebration of the *Nobel Day* at the Nobel Museum.

This list represents a selection of events.

For a complete list, please visit www.nobelmuseum.se

BOARD OF DIRECTORS 2017

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Peje Emilsson, Founder and Chairman Kream

Marika Hedin, honorary doctor, Museum director at Museum Gustavianum (Uppsala University Museum)

Klas Kärre, Professor, Associate Member of the Nobel Committee for Physiology or Medicine and member of the Nobel Assembly at Karolinska Institutet

Nina Wormbs, Associate Professor, Royal Institute of Technology (KTH)

Sara Öhrvall, Senior Adviser and Co-Founder of MindMill Network

Erika Lanner, General Counsel, Nobel Foundation, Deputy Member

NOBEL CENTER

NEW LIFE WAS BREATHED into the long-standing Nobel Center dream in December 2011, when the City of Stockholm and the Nobel Foundation reached an agreement to work together on its construction on Blasieholmen in Stockholm. Nobel Center will be an intellectual living room at the very heart of Stockholm, where people will want to come to ask, learn, discuss and experience. Based on the Nobel Prize's unique combination of fields – natural sciences, literature and peace – Nobel Center want to invite to exhibitions, school programmes, lectures and dialogues about the great issues of our time.

In 2017, preparatory work with the programme and educational activities have intensified and Nobel Center c/o has reached new audiences on different locations around Stockholm. Seminars with Nobel Laureates and other experts were held on a number of occasions. Nobel Center began working with the Royal Dramatic Theatre on a series of Performance Lectures, combining science with the dramatic arts. The first event saw KTH Royal Institute of Technology's Professor Danica Kragic Jensfelt give lectures on robots.

NOBEL CALLING! featured many open activities in connection with the announcement of the year's Nobel Prize in October. An enthusiastic audience spent an evening at the Rival Theatre celebrating and learning about the year's scientific Nobel Prizes, and Stockholm City Library was filled to capacity when Literature Laureate Herta Müller gave a reading from her novel *The Hunger Angel*. Peace Laureate Shirin Ebadi and Chemistry Laureate Ben Feringa recounted their Nobel journeys. The Nobel Museum

hosted a packed daily programme for school pupils and passers-by, and a pub evening for international students was also arranged. The first Nobel Teacher Summit brought together 350 teachers from around the globe to discuss common challenges in a world where facts and knowledge are called into question.

During Nobel Week, three of the 2017 Nobel Laureates also visited the Swedish Parliament to talk with our elected representatives about the importance of investing in science and knowledge. This was an initial example of successful cooperation between Parliament and Nobel Center. Discussions were also held during the week on the theme of music and science, with conductor Gustavo Dudamel meeting Nobel Laureate Frank Wilczek.

MORE THAN SEK 1.1 BILLION, of the 1.2 estimated budget for the building, has now been secured. In addition, the Swedish Government has also announced that it will contribute SEK 40 million annually towards the operation of Nobel Center for the first three years after it opens its doors. Together with increased financial support from the City of Stockholm, operations will therefore receive SEK 60 million a year in funding for a three-year period. This means that, during normal operation – with the expected 600,000 visitors – half of the costs have already been covered which provides a stable base for the project. The majority of the financing for the building has been provided by the Erling-Persson Family Foundation and the Knut and Alice Wallenberg Foundation, jointly contributing SEK 800 million. Since then, a further SEK 300 million has been donated by foundations,

businesses and individuals.

A number of locations around the city were studied before the Nobel Foundation and the City of Stockholm in September 2011 jointly proposed the Blasieholmen peninsula in central Stockholm as the best location for a building to accommodate a broad range of public activities associated with science, literature and peace efforts. These are questions that deserve to be placed in the very heart of the city since they will attract not only the many foreign visitors but also thousands of school pupils and Stockholmers.

The design of the building was selected through an international architectural competition. In April 2014, it was announced that David Chipperfield and Christoph Felger had won the competition with their timeless, elegant design.

IN AUGUST 2017, Ylva Lageson became CEO of Nobelhuset AB. With 20 years of experience in the construction industry, she is now leading the work to prepare the project for the start of construction. This includes refining the internal plans for the building and preparing for a more highly developed construction programme. In February 2017, the county administrative board announced its ruling and rejected all appeals against the City of Stockholm's decision to adopt the local plan. Since then, the Land and Environment Court has been carrying out an investigation.

NOBELHUSET AB is the company that has been entrusted with planning, building, owning, administering and developing Nobel Center. Operational development will be carried out by the Nobel Center Foundation.

"It is important to understand what the Nobel Laureates have achieved, what expertise they have, what they have discovered and how their discoveries can be used today and in the future."

ANNA WEDELL, CHAIRMAN OF THE NOBEL COMMITTEE FOR PHYSIOLOGY OR MEDICINE AT THE RIVAL THEATRE DURING THE SPEED COURSE PRESENTING THE 2017 NOBEL PRIZES





Nobel Center, created by David Chipperfield and Christoph Felger, will be a public building located at Blasieholmen in Stockholm.



The audience at Rival was told about the Nobel Prize and was asked to signal if they understood or not.



Discussions were also held during the Nobel Week on the theme of music and science where conductor Gustavo Dudamel (photo) met Nobel Laureate Frank Wilczek.

PROGRAMME 2018

As the 2018 Nobel Prizes are announced in October several events will be held, for example a *Crash Course* in the 2018 science prizes, an international student pub and *Nobel Teacher Summit*.

FRIDAY 23 FEBRUARY

Curious of Behavioural Economics Micael Dahlén and Gustav Källstrand.

FRIDAY 23 MARCH

Our Diabetes with Peter and Karin Jihde as well as Viveca Gydberg.

FRIDAY 20 APRIL

Curious of our Sense of Smell Jonas Olofsson and Gustav Källstrand.

TUESDAY 1 MAY

Creating Music with a Nobel Laureate. Grammy nominated Stacey Kent and Jim Tomlinson on their cooperation with Kazuo Ishiguro.

FRIDAY 28 SEPTEMBER

About Martin Luther King, Jr.

For an updated and complete programme, please visit www.nobelcenter.se



NOBELHUSET AB

Number of employees: 2

Turnover: SEK 6,000 K

CEO: Ylva Lageson

Established: 2012

Corporate Reg. No. 556884-6421

Address: Sturegatan 14, Stockholm, Sweden

Contact: nobelcenter@nobelcenter.se

Website: www.nobelcenter.se

BOARD OF DIRECTORS, NOBEL CENTER FOUNDATION 2017

Lars Heikensten, Dr, Executive Director of the Nobel Foundation, Chairman

Helene Andersson Svahn, Professor, Royal Institute of Technology

Cecilia Gunne, Lawyer, Lindskog Malmström Advokatbyrå

Benny Fredriksson, Executive Director Kulturområdet Stadsteatern

Göran K. Hansson, Professor, Secretary General of the Royal Swedish Academy of Sciences

Gunnar von Heijne, Professor, Secretary of the Nobel Committee for Chemistry

Staffan Normark, Professor, Karolinska Institutet

Bente Erichsen, director, author

Per Wästberg, Author, Member of the Swedish Academy

BOARD OF DIRECTORS, NOBELHUSET AB 2017

Lars Heikensten, Dr, Executive Director of the Nobel Foundation, Chairman

Lars Anell, former Chairman of the Swedish Research Council

Birgitta Ed, partner, and one of the founders of Six Year Plan

Gunnar von Heijne, Professor, Secretary of the Nobel Committee for Chemistry

Eva Nygren, Architect, Director of Investment at the Swedish Transport Administration

Anders Nylander, former CEO of Atrium Ljungberg

Stefan Ränk, CEO, Einar Mattsson AB

Erika Lanner, General Counsel, Nobel Foundation, Deputy Member

NOBEL PEACE CENTER FOUNDATION

THE NOBEL PEACE CENTER is a museum dedicated to the Nobel Peace Prize, located right in the heart of Oslo – next to Oslo City Hall, where the Nobel Peace Prize is awarded every year. The Center showcases the Peace Prize Laureates and their work, the life story of Alfred Nobel, as well as relevant exhibitions with a special focus on documentary photography.

Since its opening in 2005, the Nobel Peace Center has become one of Oslo's most visited museums, with almost a quarter of a million visitors per year. A third of these are children, pupils and students. Over 600 school groups visited the Center in 2017 and they were able to choose from 16 different education programmes.

The Center also has a permanent programme of activities for families with children and, in 2017, a new Peace Club for children opened, featuring a new activity course about fleeing your country. Members are invited in October each year to be Junior Experts when a new Peace Prize Laureate has been announced. The children hand out information material and talk to visitors about the new Laureate.

The Nobel Peace Center had an extensive exhibition programme in 2017. Three major exhibitions were showcased in the largest of its exhibition spaces on the first floor: *The Dangerous Prize* about Carl von Ossietzky, Peace Prize Laureate in 1937; *Detours*, about displaced people fleeing their homes; and *Shifting Boundaries* about the changing borders in Europe. As part of the *Detours* exhibition, visitors could go to a special *Bias Bar*, where they could share and discuss

prejudices – their own and other people's. This was a very popular visitor activity that led to lots of interesting discussions between the museum's visitors and employees. Over 10,000 visitors shared their prejudices on small cards that were then shown in the exhibition.

On the second floor, the Peace Prize exhibition, *Hope over Fear*, about President Santos and the Colombian people, was shown until November 2017. Beatrice Fihn, CEO of the Peace Prize awarded organisation ICAN, opened the exhibition *Ban the Bomb* in December. The focus on nuclear weapons, and ICAN's work to ban them, extended outside the museum with alternating exhibitions on the *Peace Wall*. In 2015, the construction fence concealing the site where the new National Museum was being built was transformed into an arena for contemporary art. In the course of 2017, three different works were shown on the wall: *Unknown Numbers*, a tribute to advocates of freedom of expression from all over the world, *Our Tipping Point*, a bright pink pop artwork that was shown during the summer, and *Wall on Wall*, a documentary photography exhibition about walls and border fences.

IN SEPTEMBER 2017, the Nobel Peace Prize exhibition *Hope over Fear* opened at the National Museum of Colombia. The Peace Prize for 2016 was awarded to the Colombian president, Juan Manuel Santos, but also – according to the Norwegian Nobel Committee – to all the people of Colombia. Funding from the Norwegian Ministry of Foreign Affairs made it possible to make photographer Mads

Nissen's documentary photos accessible to the people sharing the award. President Santos attended the opening in Bogotá – just as he did in Oslo in December of the previous year. The education programme created for Norwegian schoolchildren at the Nobel Peace Center was also adopted for use with the Colombian schoolchildren of Bogotá.

IN RECENT YEARS, the Nobel Peace Center has developed into an important arena for debate and dialogue around war, peace and conflict resolution. In 2017, the Nobel Peace Center organised a total of 92 large and small-scale debates and events which attracted a total of 22,000 visitors. Many of these were specifically geared towards younger visitors. An election debate in the run-up to the Norwegian general election was arranged in which youth politicians from all parties participated, and two *Bias Nights*, during which the prejudices surrounding immigration and Islam were discussed. The events have also been made available via podcast and thus reach a wider audience than just those who are able to visit the Center. Through additional digitalisation and off-site activities, the Nobel Peace Center will continue to strive to reach new audiences in 2018.

The Nobel Peace Center is funded by grants from the Ministry of Culture and from its main sponsors: Hydro, Telenor Group and ABB, in addition to income from tickets and museum shop sales, rental income and guided tours.



Our Tipping Point, a piece of art at the Peace Wall, right outside the Nobel Peace Center.



In September 2017 the exhibition *Hope over Fear* was inaugurated at the National Museum of Colombia.



Funding from the Norwegian Ministry of Foreign Affairs made it possible to make Mads Nissen's photos accessible to the people of Colombia.



Over 600 school groups visited the Nobel Peace Center in 2017 and they could choose from 16 different education programmes.

PROGRAMME AND EXHIBITIONS 2018

JANUARY-NOVEMBER

Nobel Peace Prize Exhibition *Ban the Bomb* about nuclear weapons and ICAN's work to ban them.

FEBRUARY-AUGUST

Generation Wealth by Lauren Greenfield. A photography exhibition about the pursuit of status, beauty and wealth.

FROM 15 FEBRUARY

Topical Thursday at the Nobel Peace Center, every second Thursday at 6 pm. Free admission.

15 APRIL

Tourist in your own City. Free admission.

MAY

Opening of the *Photo Camp* exhibition on the Peace Wall outside the Center. In cooperation with National Geographic.

SEPTEMBER 2018 - FEBRUARY 2019

Noble is Mankind: A photography exhibition by Rune Eraker, focusing on human rights violations and political prisoners.

14 SEPTEMBER

Oslo Culture Night. Open until 11 pm. Free admission from 6 pm.

OCTOBER

Announcement of new *Peace Prize Laureates* and open day celebration.

11 DECEMBER

Opening of the *Nobel Peace Prize Exhibition 2018*.

This is a selection from the programme.

For the full programme visit www.nobelpeacecenter.org



The Nobel Peace Center has a special Peace Club for children, where members are invited to the Center in October each year to be Junior Experts when a new Nobel Peace Prize has been announced.



Nobel Peace Center

Number of employees: 46 (31 in full time)

Turnover: NOK 55,960 K

VD: Liv Tørres

Established: 2005

Corporate ID No.: 985226237

Address: Brynjulf Bulls Plass 1, Rådhusplassen, Oslo, Norge

Contact: post@nobelpeacecenter.org, +47 48 30 10 00

Website: www.nobelpeacecenter.org

NOBEL PEACE CENTER BOARD, 2017

Olav Njølstad, Director of the Nobel Institute, Chair

Siri Hatlen, Chair of Entra and the Norwegian Board of Technology

Kaci Kullman Five, Adviser (January-February 2017)

Olov Amelin, Director of the Nobel Museum, Stockholm

Olav Aaraas, Director of the Norwegian Museum of Cultural History

Tone Jørstad, Senior Adviser at The Falstad Centre (from May 2017)

NOBEL PEACE PRIZE – RESEARCH & INFORMATION AS

NOBEL PEACE PRIZE – RESEARCH & INFORMATION AS, is the research arm of the Norwegian Nobel Institute. It focuses on research and information about peace and conflicts and reflects the same spirit as is found in the work of the Norwegian Nobel Committee. The company primarily arranges the visiting fellows programme, lectures and seminars. The Nobel Institute's visiting fellows programme began in the early 1990s. Since then, it has hosted over 200 fellows studying international history, law, economics and politics. It is an extension of the Nobel Institute's original ambition of being an intellectual force in direct contact with the latest developments within international politics.

IN THE SPRING OF 2017, seven political scientists, historians and economists were invited for research stays in Oslo. This culminated in a wide-ranging research seminar held at the Nobel Institute on 23 May under the title *Disarmament and Armament Dynamics in the Present World*, which was also the theme of the High-level panel on Nuclear Security that took place between 8 and 10 June at the Nobel Peace Center and the Nobel

Institute. The views and insights gained from these events resulted in a series of short videos produced by Nobel Media and made available on YouTube.

The seminar topics took their starting point from one of the criteria for the Nobel Peace Prize as stated by Alfred Nobel in his will: the work towards the reduction of standing armies. The efforts towards disarmament in general and nuclear disarmament in particular has been a recurring theme the work awarded the Nobel Peace Prize. Some of the lectures were open to the public, while others attracted an academic audience and all contributed to a stimulating debate in Norwegian and international media. All the seminars were filmed and made available to a global audience. In this way, the organisation was successful in its ambition to reach out to a wider audience, an ambition developing further in 2018. The research activities were funded by grants from the Fritt Ord Foundation, the Carnegie Foundation and private donations.

IN 2017 the Nobel Peace Prize Forum Oslo was staged for its second year running on 11 December in the University

Aula in Oslo under the heading *Across Dividing Lines*. The forum was led by Fred de Sam Lazaro, PBS, with an opening lecture by Nobel Peace Prize Laureate Dr. Rigoberta Menchú Tum. It also contained a panel discussion with representatives of the Sami and Native American indigenous communities. The theme of the discussions addressed indigenous rights within the context of social justice and environmental protection.

THE NOBEL PEACE PRIZE CONCERT was organised for the 24th time, as a musical celebration of the 2017 Nobel Peace Prize Laureate ICAN. The concert was hosted by the American artist John Legend and held at the Telenor Arena outside Oslo. A range of Norwegian and international artists contributed to the celebration with music that ranged from pop and rock to the youth performance company Le PeTIT CiRqUe. The concert was seen by a live audience of 9,300 and was broadcast on Norwegian and international television and streamed to a global audience via YouTube. Warner Bros Norway and the event company Gyro were responsible for production and distribution of the concert.



Several Norwegian and international artists entered the stage to join the musical tribute, among them were Le PeTIT CiRqUe.



Nobel Peace Prize Concert is a celebration to the Nobel Peace Prize. In focus: Beatrice Fihn, Executive Director for ICAN.

PROGRAMME 2018

12-14 MARCH

Teacher's course *USA under Trump's politics*.

14-16 JUNE

Nobel Symposium (NS 163), under the heading *Nuclear Disarmament: Desirable? Attainable? Feasible?* High Level Panel on Nuclear Threats, in cooperation with the Carnegie Foundation.

11 DECEMBER

Nobel Peace Prize Forum Oslo.

11 DECEMBER

Nobel Peace Prize Concert.

OTHER

A number of lectures and scientific seminars are held over the year.

For more info, visit: www.nobelpeaceprize.org/research



Nobel Peace Prize Forum 2017, under the headline *Across Dividing Lines*, was attended by Nobel Peace Prize Laureate Rigoberta Menchú Tum.



Nobel Peace Prize Research & Information

Number of employees: 1

Turnover: NOK 3,285 K

Established: 2010

Corporate ID no: 996179397

Address: Henrik Ibsens gate 51,
Oslo, Norway

Contact: +47 22 12 93 00,

info@nppri.org

Website:

www.nobelpeaceprize.org/research

BOARD OF DIRECTORS 2017

Olav Njølstad, Director of the Norwegian Nobel Institute,
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Henrik Syse, Professor, Oslo Peace Research Institute

Jon Ola Sand, Executive Supervisor, The European Broadcasting
Union

Asle Toje, Research Director, political scientist

Bente Erichsen, film director, author

Lotta Wristel, CFO, The Nobel Foundation

Highlights in December

After two months in the limelight since the announcements in October, the year's Nobel Laureates finally arrived in Stockholm and Oslo. These intense days in December not only focus on the new Laureates and their contributions to the greatest benefit to mankind, but are also filled with inspirational interaction and unforgettable moments.



THE MUSICAL DIVERTISSEMENT was inspired by ice and the northern lights, Aurora Borealis. There was an interplay in the Blue Hall between the floral decorations, the lighting and the ice sculptures created by the Icehotel in Jukkasjärvi. Among the performers during the evening was Ane Brun. To celebrate Alfred Nobel, who spent his final years in San Remo, Italy the city (Regione Liguria, Comune di Sanremo and Chamber of Commerce Riviera di Liguria) donated flowers to embellish the Concert Hall and the City Hall each year.

ALL OF THE 2017 Nobel Laureates have written their names in the Nobel Foundation guest book. Including Beatrice Fihn, Executive Director of the Nobel Peace Prize Awarded organisation ICAN, who visited the Nobel Foundation on December 12.



ACCORDING TO TRADITION, the Nobel Laureate in Literature visited Rinkeby Library. Kazuo Ishiguro described meeting the students of Rinkeby as one of the most memorable moments during the Nobel Week. Maryan Artan and Leila Friberg White were two of the students that presented their work.



THE NOBEL PEACE PRIZE is awarded at Oslo Rådhus on December 10. A torchlight march arranged by the Norwegian Peace Council, takes place the same afternoon, to celebrate the Laureates, ending at Grand Hotel.



CHEF TOM SJÖSTEDT (pictured) and Pastry Chef Daniel Roos composed the 2017 Nobel Menu. The starter was vegetarian and consisted of pressed and dried Jerusalem artichoke, served with kohlrabi flowers flavoured with ginger and lightly roasted cabbage broth. Some 40 chefs prepared the menu for four days before the Nobel Banquet at the City Hall, which hosted 1,350 guests.



BACKSTAGE AT THE CONCERT HALL, right before the ceremony commences. 16.30 pm sharp, it is time to enter the stage.

STARTER AND CHEF, PHOTO: DAN LEPP.
ALL OTHER PHOTOS: ALEXANDER MAHMOUD



MICHAEL YOUNG
with his family
on stage after the
Nobel Prize Award
Ceremony.



IN CONJUNCTION with the Nobel Prize Concert in Stockholm, many pupils of the musical school El Sistema, from all over the world, got to meet. Some of them came from the Children's Home in Uummannaq in Greenland.



B. Wennström

Joachim Frank's Nobel Diploma. Artist Berndt Wennström, calligrapher Marie A. Györi, cover monogram (not seen on this photo)
Marianne Pettersson Soold, book binder Leonard Gustafssons Bokbinderi and photo reproduction Lovisa Engblom.



KUNGL. VETENSKAPSAKADEMIEN
HAR DEN 4 OKTOBER 2017 BESLUTAT
ATT MED DET

NOBELPRIS

SOM DETTA ÅR TILLERKÄNNES DEN
SOM GJORT DEN VIKTIGASTE KEMISKA
UPPTÄCKTEN ELLER FÖRBÄTTRINGEN
GEMENSAMT BELÖNA

Joachim Frank
Jacques Dubochet och Richard Henderson

FÖR UTVECKLING AV
KRYOELEKTRONMIKROKOPI FÖR
HÖGUPPLÖSANDE STRUKTURBESTÄMNING
AV BIOMOLEKYLER I LÖSNING.

STOCKHOLM DEN 10 DECEMBER 2017



NOBELSTIFTELSEN

The Nobel Foundation



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