The Shaw Prize 2022

Prize Announcement Press Conference

Contents

THE SHAW PRIZE 邵逸夫獎

Welcome Address by Professor Kenneth Young, Chairman of The Shaw Prize Council

We are pleased to bring to you the Shaw Prize Awards for 2022.

The Shaw Prize was established in the year 2002 by Mr Run Run Shaw with the support and help of Mrs Mona Shaw, and is now managed under the Shaw Prize Foundation.

Since 2004 the Prize has been awarded annually for distinguished and significant achievements in the three scientific disciplines, namely, Astronomy, Life Science and Medicine, and Mathematical Sciences. Each Prize consists of a medal, a certificate and a monetary award of US$1.2 million.

The Shaw Prize is an international award, dedicated to honouring individuals, regardless of race, nationality, gender and religious belief, who have achieved significant breakthroughs in academic and scientific research or applications, and whose work has resulted in a positive and profound impact on mankind.

Recipients of the Prize are all internationally acclaimed scholars and scientists. Thanks to the effort of members of the Selection Committees and colleagues of the Foundation, the Prize has built up its prestige worldwide within a short period of time.

We look forward to greater success of the Prize in the years to come.

24 May 2022 Hong Kong

THE SHAW PRIZE 邵逸夫獎

The Shaw Prize

The Shaw Prize is an international award to honour individuals who are currently active in their respective fields and who have recently achieved distinguished and significant advances, who have made outstanding contributions in academic and scientific research or applications, or who in other domains have achieved excellence. The award is dedicated to furthering societal progress, enhancing quality of life, and enriching humanity's spiritual civilization.

Preference is to be given to individuals whose significant works were recently achieved and who are currently active in their respective fields.

Background

Established in November 2002 under the auspices of **Mr Run Run Shaw**, the Prize honours individuals, regardless of race, nationality, gender and religious belief, who have achieved significant breakthroughs in academic and scientific research or applications and whose works have resulted in positive and profound impacts on mankind.

The Shaw Prize is an international award managed and administered by The Shaw Prize Foundation based in Hong Kong. **Mr Shaw** also founded two charities, The Shaw Foundation Hong Kong and The Sir Run Run Shaw Charitable Trust, both dedicated to the promotion of education, scientific and technological research, medical and welfare services, and culture and the arts.

24 May 2022 Hong Kong

THE SHAW PRIZE 邵逸夫獎

Press Release

Announcement of The Shaw Laureates 2022

The Shaw Prize in Astronomy is awarded in equal shares to

Lennart Lindegren

Professor Emeritus of Lund Observatory, Department of Astronomy and Theoretical Physics at Lund University, Sweden and

Michael Perryman

Adjunct Professor, School of Physics at University College Dublin, Ireland

for their lifetime contributions to space astrometry, and in particular for their role in the conception and design of the European Space Agency's Hipparcos and Gaia missions.

The Shaw Prize in Life Science and Medicine is awarded in equal shares to

Paul A Negulescu

Senior Vice President and Site Head, San Diego Research, Vertex Pharmaceuticals Incorporated, USA and

Michael J Welsh

Professor of Internal Medicine – Pulmonary, Critical Care and Occupational Medicine, Professor of Neurosurgery, Neurology, Molecular Physiology and Biophysics and Director of Pappajohn Biomedical Institute, University of Iowa, USA

for landmark discoveries of the molecular, biochemical, and functional defects underlying cystic fibrosis and the identification and development of medicines that reverse those defects and can treat most people affected by this disorder. Together, these discoveries and medicines are alleviating human suffering and saving lives.

The Shaw Prize in Mathematical Sciences is awarded in equal shares to

Noga Alon

Professor of Mathematics at Princeton University, USA and Baumritter Professor Emeritus of Mathematics and Computer Science at Tel Aviv University, Israel and

Ehud Hrushovski

Merton Professor of Mathematical Logic, University of Oxford, UK

for their remarkable contributions to discrete mathematics and model theory with interaction notably with algebraic geometry, topology and computer sciences.

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Tuesday, 24 May 2022. At today's press conference in Hong Kong, The Shaw Prize Foundation announced the Shaw Laureates for 2022. Information was posted on the website **www.shawprize.org** at Hong Kong time 15:30 (GMT 07:30).

The Shaw Prize consists of three annual prizes: Astronomy, Life Science and Medicine, and Mathematical Sciences, each bearing a monetary award of US$1.2 million. This will be the nineteenth year of the awards.

24 May 2022 Hong Kong

THE SHAW PRIZE
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Announcement

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24 May 2022 Hong Kong

Biographical Notes of Shaw Laureates in Astronomy 2022

Lennart Lindegren was born in 1950 in Sweden and is currently Professor Emeritus of Lund Observatory, Department of Astronomy and Theoretical Physics at Lund University, Sweden. He received his PhD in 1980 from Lund University. He joined as a member of the teaching staff at Lund University and became Full Professor of Astronomy in 2000, serving until his retirement in 2017. During his time at Lund Observatory, he had served as the Director for six years. He was a member of the European Space Agency's Hipparcos Science Team (1976–1997) and Gaia Science Advisory Group (1997–2000). He leads the scientific implementation of the Astrometric Global Iterative Solution in the Gaia Data Processing and Analysis Consortium and is also a member of the Gaia Science Team (2001–). He also served as Project Coordinator for the Marie Curie Research Training Network ELSA (2006–2010). He is a member of the Royal Swedish Academy of Sciences.

Michael Perryman was born in 1954 in Luton, UK and is currently Adjunct Professor, School of Physics at University College Dublin, Ireland. He received his Bachelor's degree in Mathematics and Theoretical Physics in 1976 and obtained a PhD in 1980 from the University of Cambridge, UK. He joined the European Space Agency (ESA) in 1980 and was nominated as Project Scientist (1981–1997) for the Hipparcos mission, and subsequently Study Scientist (1995–2000) and Project Scientist (1995–2008) for the Gaia mission. During his service in ESA, he had been Professor of Astronomy (1993–2009) at Leiden University, The Netherlands. He held a joint position at the University of Heidelberg and the Max Planck Institute for Astronomy, Germany in 2010. A year later, he joined the University of Bristol, UK as visiting Professor of Physics (2011–2012). He has been Adjunct Professor at the University College Dublin since 2012.

24 May 2022 Hong Kong

The Shaw Prize in Astronomy 2022

Press Release

The Shaw Prize in Astronomy 2022 is awarded in equal shares to **Lennart Lindegren**, Professor Emeritus, Department of Astronomy and Theoretical Physics, Lund Observatory, Lund University, Sweden and **Michael Perryman**, Adjunct Professor, School of Physics, University College Dublin, Ireland for their lifetime contributions to space astrometry, and in particular for their role in the conception and design of the European Space Agency's Hipparcos and Gaia missions.

Hipparcos, launched in 1989, measured the positions and motions of over 100,000 stars with accuracies two orders of magnitude better than ground-based observatories. Gaia, launched in 2013 and still operating, has measured the positions and motions of billions of stars, quasars and Solar System objects with far higher accuracy. The results from these missions offer an exquisitely detailed portrait of the distribution and properties of the stars in our Galaxy as well as unique insights into its formation and history, and impact almost every branch of astronomy and astrophysics. This award is also intended to honour the much larger community of astronomers and engineers who made Hipparcos and Gaia possible.

The measurement of the positions, distances, and motions of planets and stars has been central to astronomy since prehistoric times. The early naked-eye star catalogues of Ptolemy (ca. 100–170 CE), Ulugh Beg (1394–1449), and Tycho Brahe (1546–1601) were supplanted in the last two centuries by telescopic catalogues of ever-increasing size and accuracy. However, by the late twentieth century, astrometry from ground-based optical telescopes encountered insurmountable barriers to further improvements, arising from atmospheric distortions, thermal and gravitational forces on the telescopes, and the difficulties of stitching together data from different telescopes.

The era of precision space astrometry began with the European Space Agency's Hipparcos mission (1989–1993). Hipparcos catalogued over 100,000 bright stars. It measured annual changes in the apparent position of these stars on the sky as small as the width of a human thumb in Beijing as viewed from Hong Kong. By measuring small variations in stellar positions as the Earth travelled around its orbit (parallax), Hipparcos determined distances to over 20,000 stars with uncertainties of less than 10%.

ESA's Gaia mission, launched in December 2013, is based on the same design principles as Hipparcos but has vastly greater capabilities. Gaia has measured the positions of 10,000 times as many stars as Hipparcos with accuracies 100 times higher. Gaia has catalogued almost one per cent of all the stars in the Milky Way, and so far has measured parallax-based distances to over 50 million stars with uncertainties of less than 10%. Such parallaxes are the foundation of all distances in astronomy and thus are the firmest foundation we have for measuring the scale of the Universe.

The study of the preliminary catalogues released by the Gaia project, all of which are in the public domain, has already transformed many areas of astronomical understanding, and even richer, larger and more accurate catalogues will be produced before the mission is completed in 2025 or later. Gaia is providing a survey of our Galaxy that will not be surpassed in quantity or quality for decades to come.

Gaia can measure changes in the position of stars on the sky as small as the width of a human hair in Beijing as viewed from Hong Kong, and motions on the sky smaller than the apparent rate of growth of a hair belonging to an astronaut on the Moon, as seen from Earth. This remarkable performance is achieved by a unique architecture consisting of two telescopes pointing in very different directions, whose images are combined on a single detector. The telescope spins once every

six hours, and sends back to Earth precise measurements of the times at which the stars cross a fixed point on the detector.

Why is accurate astrometry so important? The answer is that it provides fundamental data — positions, velocities, and distances — that underpin almost every aspect of modern astronomy and astrophysics. Accurate distances to stars allow us to measure their intrinsic luminosity, and this in turn is a sensitive measure of their internal physical processes, such as crystallization in the interior of degenerate stars. Small-scale inhomogeneities in the spatial distribution of stars provide a glimpse of disrupted clusters of stars, perhaps similar to the one in which the Sun was born. Measurements of the velocities of stars allow us to infer their Galactic orbits, which in turn provide clues to the formation history of the Milky Way and the distribution of the mysterious dark matter within it. Gaia is detecting debris from small satellite galaxies that were disrupted long ago by the Milky Way, and irregularities in the distribution of stars in the Galactic disk that may reflect recent disturbances from surviving satellite galaxies or unseen clumps of dark matter. Gaia measurements have for the first time allowed us to determine the orbits of distant star clusters and dwarf galaxies. Gaia will provide a rich harvest of ancillary astronomical results, including an all-sky multi-colour photometric survey of a billion stars; radial velocities of many millions of stars; light curves for hundreds of thousands of variable stars; the discovery and measurement of thousands of extrasolar planets; a survey of asteroids and other small Solar System bodies with unprecedented detail; a uniform catalogue of hundreds of thousands of distant quasars; and stringent new tests of Einstein's theory of gravity.

Hipparcos and Gaia succeeded because of the collective effort of many people lasting over half a century. The Shaw Prize recognise two of these individuals who have made sustained key scientific contributions to the two missions. **Lennart Lindegren** originated many of the concepts of the Hipparcos mission

design and was leader of one of the two independent teams that carried out the data analysis for Hipparcos. He was a member of the Hipparcos science team for two decades and the Gaia science team for two decades after that. **Michael Perryman** was Project Scientist for Hipparcos from 1981 to 1997, Chair of the Hipparcos Science Team for the same period, and lead author on the 1997 paper describing the Hipparcos catalogue. **Perryman** was also Project Scientist for the Gaia mission from 1995 to 2008, Chair of the Gaia Science Advisory Group from 1995 to 2000, and Chair of the Gaia Science Team from 2001 to 2008. **Lindegren** and **Perryman** proposed the concept for Gaia in the 1990s and were instrumental in its scientific and technical design.

Astronomy Selection Committee
The Shaw Prize

24 May 2022 Hong Kong

THE SHAW PRIZE
邵逸夫獎

Announcement

The Shaw Prize in Life Science and Medicine 2022

is awarded in equal shares to

Paul A Negulescu

and

Michael J Welsh

for landmark discoveries of the molecular, biochemical, and functional defects underlying cystic fibrosis and the identification and development of medicines that reverse those defects and can treat most people affected by this disorder. Together, these discoveries and medicines are alleviating human suffering and saving lives.

24 May 2022 Hong Kong

Biographical Notes of Shaw Laureates in Life Science and Medicine 2022

Paul A Negulescu is currently Senior Vice President and Site Head, San Diego Research, Vertex Pharmaceuticals Incorporated, USA. He received his BS and PhD in Physiology from the University of California, Berkeley, USA in 1986 and 1990 respectively. He carried out postdoctoral works at the University of California, Berkeley and the University of California, Irvine. He joined Aurora Biosciences, San Diego, USA in 1996 as one of the first employees and grew with the company to become a Senior Vice President of Discovery Biology (1999–2001). He has been appointed Senior Vice President of Research (2001–) after Vertex acquired Aurora in 2001.

Michael J Welsh is currently Professor of Internal Medicine – Pulmonary, Critical Care and Occupational Medicine, Professor of Neurosurgery, Neurology, Molecular Physiology and Biophysics and Director of Pappajohn Biomedical Institute, University of Iowa, USA. He received his MD from the University of Iowa, USA in 1974. He was a Research Fellow at the University of California, San Francisco, USA and the University of Texas, USA. He then worked at the University of Iowa, where he was successively Assistant Professor (1981–1984), Associate Professor (1984–1987), Professor of Internal Medicine (1987–), Director of Cystic Fibrosis Research Center (1988–) and Professor of Molecular Physiology (1989–). He is also an Investigator of the Howard Hughes Medical Institute (1989–), a member of the US National Academy of Sciences, the US National Academy of Medicine and the American Academy of Arts and Sciences.

24 May 2022 Hong Kong

THE SHAW PRIZE 邵逸夫獎

The Shaw Prize in Life Science and Medicine 2022

Press Release

The Shaw Prize in Life Science and Medicine 2022 is awarded in equal shares to **Paul A Negulescu**, Senior Vice President and Site Head, San Diego Research, Vertex Pharmaceuticals Incorporated, USA and **Michael J Welsh**, Professor of Internal Medicine – Pulmonary, Critical Care and Occupational Medicine, Professor of Neurosurgery, Neurology, Molecular Physiology and Biophysics and Director of Pappajohn Biomedical Institute, University of Iowa, USA for landmark discoveries of the molecular, biochemical, and functional defects underlying cystic fibrosis and the identification and development of medicines that reverse those defects and can treat most people affected by this disorder. Together, these discoveries and medicines are alleviating human suffering and saving lives.

Cystic fibrosis (CF) is one of the most common, severe single-gene disorders, affecting more than 80,000 people globally. The single gene in which the disease-causing mutations fall is called *CFTR* (cystic fibrosis transmembrane regulator). The CFTR protein ensures the proper flow of chloride, a component of salt, that is present in secreted body fluids such as sweat, saliva and mucus. These fluids keep cells lubricated and are thus vital for the proper function of organs. In CF patients, these secretions become thick and sticky and, rather than acting as lubricants, clog passageways, especially in the lungs. The disease is fatal. There are many different mutations in *CFTR* that cause the disease, but a mutation called F508del is particularly important, and is present in about 90% of patients.

Michael Welsh from the University of Iowa discovered in 1990/1991 that the CFTR protein is a chloride channel and he revealed how its activity can be regulated. He corrected the CF defect in cultured cells by providing a normal *CFTR* gene, thereby showing that correcting the defect was a feasible therapeutic strategy. In extraordinary studies (1992–1993), **Welsh** then demonstrated how different CF disease-causing mutations affect the CFTR protein—some

eliminated its production, some interfered with its trafficking to the cell membrane, and some prevented the opening or function of its chloride-transporting channel. **Welsh** categorized the different human CF mutations according to mechanism and laid out a scheme to correct each type of underlying defect. Importantly, **Welsh** showed that the CFTR protein with the common F508del mutation has multiple defects, the protein did not reach the cell membrane and was also defective for chloride transport. Very crucially, **Welsh** discovered an experimental condition that enabled the CFTR-F508del protein to make it to the membrane, and he showed that when the protein did reach the membrane, it functioned. That landmark discovery meant that if a therapeutic strategy could be developed to get CFTR-F508del to the cell membrane, it would be beneficial in combating the disease.

Paul Negulescu from Vertex Pharmaceuticals made the leap from mechanism to therapy. He and the Vertex team discovered small molecules to treat CF by embarking on an enormously risky strategy of screening for compounds that could "fix" a defective protein. Moreover, because there are many different CF-causing mutations, it was not clear that one medicine capable of treating the majority of CF patients could be developed. **Negulescu** first discovered a CFTR "potentiator" that stimulated CFTR channel function. This medicine, called Kalydeco, received breakthrough designation. However, Kalydeco was useful only for the subset of CF patients with certain rare mutations, not for the vast majority of CF patients with the *CFTR*-F508del mutation. In an even more bold effort, **Negulescu** then screened for molecules that could correct the trafficking defect of the CFTR-F508del protein. Remarkably, he discovered such a molecule, a "protein-corrector". He combined the new molecule with Kalydeco, now named Orkambi. He improved on Orkambi twice more, combining two "protein correctors" with a "potentiator" to make Trikafta, approved in 2019. Trikafta helps patients with the *CFTR*-F508del mutation and patients with 177 rare *CFTR* mutations. Currently, 50% of all CF patients take Vertex CF medicines.

The combined contributions of **Welsh** and **Negulescu** represent the complete biomedical arc from basic discovery to application to the saving of lives. They are especially worthy of the Shaw Prize in Life Science and Medicine.

Life Science and Medicine Selection Committee
The Shaw Prize

24 May 2022 Hong Kong

THE SHAW PRIZE
邵逸夫獎

MATHEMATICAL SCIENCES

Announcement

The Shaw Prize in Mathematical Sciences 2022

is awarded in equal shares to

Noga Alon

and

Ehud Hrushovski

for their remarkable contributions to discrete mathematics and model theory with interaction notably with algebraic geometry, topology and computer sciences.

24 May 2022 Hong Kong

Biographical Notes of Shaw Laureates in Mathematical Sciences 2022

Noga Alon was born in 1956 in Israel and is currently Professor of Mathematics at Princeton University, USA and Baumritter Professor Emeritus of Mathematics and Computer Science at Tel Aviv University, Israel. He received his Bachelor's and Master's degree from Technion–Israel Institute of Technology and Tel Aviv University respectively. He later earned his PhD in Mathematics in 1983 from the Hebrew University of Jerusalem, Israel. He joined Tel Aviv University in 1985 and was successively Senior Lecturer (1985–1986), Associate Professor (1986–1988) and was appointed Full Professor from 1988 until retirement. He had also served as the Head of the School of Mathematical Sciences (1999–2000). He moved to Princeton University in 2018, where he has since held the position of Professor. He is a member of the Israel Academy of Sciences and Humanities and the Academy of Europe. He is also an honorary member of the Hungarian Academy of Sciences.

Ehud Hrushovski was born in 1959 in Israel and is currently Merton Professor of Mathematical Logic, University of Oxford, UK and a Fellow of Merton College, Oxford University, UK. He obtained his Bachelor's degree and PhD in Mathematics from the University of California, Berkeley, USA in 1982 and 1986 respectively. He was an Instructor (1987–1988) and Visiting Assistant Professor (1988–1989) at Princeton University, USA. He joined the Massachusetts Institute of Technology (MIT), USA where he was successively Assistant Professor (1988–1991), Associate Professor (1992–1994) and Full Professor (1994). While working at MIT, he also served as an Assistant Professor (1991–1992) and became a Full Professor (1994–2017) at the Hebrew University of Jerusalem, Israel. He moved to the University of Oxford in 2016, where he has been appointed Merton Professor of Mathematical Logic (2016–). He is a member of the Israel Academy of Sciences and Humanities and the American Academy of Arts and Sciences.

24 May 2022 Hong Kong

The Shaw Prize in Mathematical Sciences 2022

Press Release

The Shaw Prize in Mathematical Sciences 2022 is awarded in equal shares to **Noga Alon**, Professor of Mathematics at the University of Princeton, USA and **Ehud Hrushovski**, Merton Professor of Mathematical Logic, University of Oxford, UK for their remarkable contributions to discrete mathematics and model theory with interaction notably with algebraic geometry, topology and computer sciences.

Noga Alon works in the broad area of discrete mathematics. He introduced new methods and achieved fundamental results which entirely shaped the field. Among a long list of visible results with applications, one can extract the following contributions. With Matias and Szegedy he pioneered the area of data stream analysis. With Milman he connected the combinatorial and algebraic properties of expander graphs. With Kleitman he solved the Hadwiger–Debrunner conjecture (1957). In his "combinatorial Nullstellensatz" he formulated in a special case an explicit version of Hilbert's Nullstellensatz from algebraic geometry which is widely applicable for discrete problems. This led to a proof (1995) of the Dinitz conjecture on Latin squares by Galvin and further generalizations. With Tarsi he bounded the chromatic number of a graph. With Nathanson and Ruzsa he developed an algebraic technique yielding a solution to the Cauchy–Davenport problem in additive number theory. His book with Spencer on probablistic methods became the essential basic manual on probability, combinatorics and beyond.

Ehud Hrushovski works in the broad area of model theory with applications to algebraic-arithmetic geometry and number theory. Among a long list of visible results with applications, one can extract the following contributions. He introduced the group configuration theorem as a vast generalization of Zilber's and Malcev's theorems, which became a powerful tool in geometric stability theory and eventually enabled him to solve the Kueker's conjecture for stable

theories. With Pillay he proved a structure theorem on groups which led him to then prove the Mordell–Lang conjecture in algebraic geometry in positive characteristic. This came as a big surprise. He disproved a conjecture by Zilber on strongly minimal sets, introducing a method which became an essential technique for estimating complexity. He wrote with Chatzidakis a theory of difference fields which, he showed later, has striking applications to dynamics in geometry over finite fields, and was for example a key tool to solve the Gieseker conjecture on the structure of D-modules over finite fields. He found a proof of the Manin–Mumford conjecture (Raynaud's theorem) using his tools ultimately stemming from logic. He gave algorithms to compute Galois groups of linear differential equations. Finally, he developed a theory of integration in valued fields and non-archimedean tame geometry, starting from his work with Kazhdan (2006) and finishing with his work with Loeser (2016).

Mathematical Sciences Selection Committee
The Shaw Prize

24 May 2022 Hong Kong

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The Shaw Prize 2022

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The University of Texas at Austin
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THE SHAW PRIZE 邵逸夫獎

The Shaw Prize

Council Members

Professor Kenneth Young (Chairman)

Mr Raymond Chan

Professor Wai-Yee Chan

Professor Pak-Chung Ching

Professor Reinhard Genzel

Professor Yuet-Wai Kan

Members' Biographical Notes

Professor Kenneth Young is Chair of the Council and Vice Chair of the Board of Adjudicators of The Shaw Prize, and Emeritus Professor of Physics at The Chinese University of Hong Kong.

Mr Raymond Chan is Member of Board of Advisor of The Sir Run Run Shaw Charitable Trust, Chair of The Shaw Foundation and The Shaw Prize Foundation and Managing Director of Shaw Group of Companies.

Professor Wai-Yee Chan is Pro-Vice-Chancellor / Vice-President, Li Ka Shing Professor of Biomedical Sciences and Director of the Institute for Tissue Engineering and Regenerative Medicine, The Chinese University of Hong Kong.

Professor Pak-Chung Ching is Director of Shun Hing Institute of Advanced Engineering and Choh-Ming Li Research Professor of Electronic Engineering at The Chinese University of Hong Kong.

Professor Reinhard Genzel is Director, Max Planck Institute for Extraterrestrial Physics, Germany.

Professor Yuet-Wai Kan is Professor Emeritus of Medicine at the University of California, San Francisco, USA.

24 May 2022 Hong Kong

The Shaw Laureates (2004 – 2022)

YEAR	Astronomy	Life Science and Medicine	Mathematical Sciences
2004	P James E Peebles (*USA*)	*Two prizes awarded:* (1) Stanley N Cohen (*USA*) Herbert W Boyer (*USA*) Yuet-Wai Kan (*USA*) (2) Richard Doll (*UK*)	Shiing-Shen Chern (*China*)
2005	Geoffrey Marcy (*USA*) Michel Mayor (*Switzerland*)	Michael Berridge (*UK*)	Andrew John Wiles (*UK*)
2006	Saul Perlmutter (*USA*) Adam Riess (*USA*) Brian Schmidt (*Australia*)	Xiaodong Wang (*USA*)	David Mumford (*USA*) Wentsun Wu (*China*)
2007	Peter Goldreich (*USA*)	Robert Lefkowitz (*USA*)	Robert Langlands (*USA*) Richard Taylor (*UK*)
2008	Reinhard Genzel (*Germany*)	Ian Wilmut (*UK*) Keith H S Campbell (*UK*) Shinya Yamanaka (*Japan*)	Vladimir Arnold (*Russia*) Ludwig Faddeev (*Russia*)
2009	Frank H Shu (*USA*)	Douglas L Coleman (*USA*) Jeffrey M Friedman (*USA*)	Simon K Donaldson (*UK*) Clifford H Taubes (*USA*)
2010	Charles L Bennett (*USA*) Lyman A Page Jr (*USA*) David N Spergel (*USA*)	David Julius (*USA*)	Jean Bourgain (*USA*)
2011	Enrico Costa (*Italy*) Gerald J Fishman (*USA*)	Jules A Hoffmann (*France*) Ruslan M Medzhitov (*USA*) Bruce A Beutler (*USA*)	Demetrios Christodoulou (*Switzerland*) Richard S Hamilton (*USA*)
2012	David C Jewitt (*USA*) Jane Luu (*USA*)	Franz-Ulrich Hartl (*Germany*) Arthur L Horwich (*USA*)	Maxim Kontsevich (*France*)
2013	Steven A Balbus (*UK*) John F Hawley (*USA*)	Jeffrey C Hall (*USA*) Michael Rosbash (*USA*) Michael W Young (*USA*)	David L Donoho (*USA*)
2014	Daniel Eisenstein (*USA*) Shaun Cole (*UK*) John A Peacock (*UK*)	Kazutoshi Mori (*Japan*) Peter Walter (*USA*)	George Lusztig (*USA*)
2015	William J Borucki (*USA*)	Bonnie L Bassler (*USA*) E Peter Greenberg (*USA*)	Gerd Faltings (*Germany*) Henryk Iwaniec (*USA*)
2016	Ronald W P Drever (*UK*) Kip S Thorne (*USA*) Rainer Weiss (*USA*)	Adrian P Bird (*UK*) Huda Y Zoghbi (*USA*)	Nigel J Hitchin (*UK*)
2017	Simon D M White (*Germany*)	Ian R Gibbons (*USA*) Ronald D Vale (*USA*)	János Kollár (*USA*) Claire Voisin (*France*)
2018	Jean-Loup Puget (*France*)	Mary-Claire King (*USA*)	Luis A Caffarelli (*USA*)
2019	Edward C Stone (*USA*)	Maria Jasin (*USA*)	Michel Talagrand (*France*)
2020	Roger D Blandford (*USA*)	Gero Miesenböck (*UK*) Peter Hegemann (*Germany*) Georg Nagel (*Germany*)	Alexander Beilinson (*USA*) David Kazhdan (*Israel*)
2021	Victoria M Kaspi (*Canada*) Chryssa Kouveliotou (*USA*)	Scott D Emr (*USA*)	Jean-Michel Bismut (*France*) Jeff Cheeger (*USA*)
2022	**Lennart Lindegren** (*Sweden*) **Michael Perryman** (*Ireland*)	**Paul A Negulescu** (*USA*) **Michael J Welsh** (*USA*)	**Noga Alon** (*USA*) **Ehud Hrushovski** (*UK*)

Note: Award may not be shared equally. For details, please refer to Announcement and Citation on the Shaw Prize website (www.shawprize.org)

Countries mentioned above refer to the sites of the work places of the Laureates at the time of the award.