

THE
SHAW
PRIZE
邵逸夫獎

Press Conference
2023.5.30

邵逸夫獎基金會
The Shaw Prize Foundation

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

We are pleased to bring to you the Shaw Prize Awards for 2023, which is conducted normally, after various special arrangements in the past three years.

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.

The Shaw 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 Prize was first awarded in 2004, making this year the twentieth cycle of the Prize.

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.

30 May 2023, Hong Kong

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 civilisation.

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.

30 May 2023, Hong Kong

Announcement of The Shaw Laureates 2023

The Shaw Prize in Astronomy

is awarded in equal shares to

Matthew Bailes

Director of the Australian Research Council (ARC) Centre of Excellence for Gravitational Wave Discovery,

Duncan Lorimer

Professor and Interim Chair of Physics and Astronomy and Associate Dean for Research at Eberly College of Arts and Sciences at West Virginia University, USA and

Maura McLaughlin

Eberly Family Distinguished Professor of Physics and Astronomy and Director of the Center for Gravitational Waves and Cosmology at West Virginia University, USA

for the discovery of fast radio bursts (FRBs).

The Shaw Prize in Life Science and Medicine

is awarded in equal shares to

Patrick Cramer

Director, Department of Molecular Biology, Max Planck Institute for Multidisciplinary Sciences and President-Elect of the Max Planck Society, Germany and

Eva Nogales

Distinguished Professor of Biochemistry, Biophysics and Structural Biology, Department of Molecular and Cell Biology, University of California, Berkeley, USA

for pioneering structural biology that enabled visualisation, at the level of individual atoms, of the protein machines responsible for gene transcription, one of life's fundamental processes. They revealed the mechanism underlying each step in gene transcription, how proper gene transcription promotes health, and how dysregulation causes disease.

Announcement of The Shaw Laureates 2023

(Cont'd)

The Shaw Prize in Mathematical Sciences

is awarded in equal shares to

Vladimir Drinfeld

Harry Pratt Judson Distinguished Service Professor of Mathematics
at the University of Chicago, USA and

Shing-Tung Yau

Chair Professor at Tsinghua University, PRC

for their contributions related to mathematical physics, to arithmetic
geometry, to differential geometry and to Kähler geometry.

Tuesday, 30 May 2023. At today's press conference in Hong Kong,
The Shaw Prize Foundation announced the Shaw Laureates for 2023.
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 twentieth year
that the Prize has been awarded and the presentation ceremony is
scheduled for Sunday, 12 November 2023 in Hong Kong.

31 May 2023, Hong Kong (Revised)

THE
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PRIZE
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Astronomy

The Shaw Prize in Astronomy 2023
is awarded in equal shares to

Matthew Bailes,
Duncan Lorimer and
Maura McLaughlin

for the discovery of fast radio bursts (FRBs).

30 May 2023, Hong Kong

Biographical Notes of Shaw Laureates in Astronomy 2023

Matthew Bailes was born in 1963 in Alice Springs, Australia and is currently Director of the Australian Research Council (ARC) Centre of Excellence for Gravitational Wave Discovery. He received his Bachelor's degree in 1984 from the University of Adelaide, Australia and obtained a PhD in 1990 from the Australian National University. He founded the Centre for Astrophysics and Supercomputing at Swinburne University of Technology in 1998 and served as its Director for the first 12 years. He is a Fellow of the Australian Academy of Science.

Duncan Lorimer was born in 1969 in Darlington, UK and is currently Professor and Interim Chair of Physics and Astronomy and Associate Dean for Research at Eberly College of Arts and Sciences at West Virginia University, USA. He received his Bachelor's degree in 1990 from the University of Wales in Cardiff, UK and obtained a PhD in 1994 from the University of Manchester, UK. He joined the University of Manchester as Lecturer (1994–1995). He was a Postdoctoral Fellow at the Max Planck Institute for Radio Astronomy, Germany (1995–1998) and Cornell University, USA (1998–2001) respectively. He had also held a position of Royal Society Research Fellow at the University of Manchester (2001–2006). He has been appointed Assistant Professor (2006–2010), Associate Professor (2010–2014) and Professor (2014–) at West Virginia University. He is a Fellow of the Royal Astronomical Society, UK and the American Physical Society.

Biographical Notes of Shaw Laureates in Astronomy 2023 (Cont'd)

Maura McLaughlin was born in 1972 in Philadelphia, Pennsylvania, USA and is currently Eberly Family Distinguished Professor of Physics and Astronomy and Director of the Center for Gravitational Waves and Cosmology at West Virginia University, USA. She received her Bachelor's degree in 1994 from Pennsylvania State University, USA and obtained a PhD in 2001 from Cornell University, USA. She was an NSF Math and Physical Sciences Distinguished Research Fellow (2001–2003) and Research Associate of Jodrell Bank Observatory at the University of Manchester, UK (2003–2006). She then worked at West Virginia University, where she was successively Assistant Professor (2006–2011), Associate Professor (2011–2014), Professor (2014–2015) and Eberly Family Distinguished Professor (2015–). She is a Fellow of the American Physical Society.

9 June 2023, Hong Kong (Revised)

The Shaw Prize in Astronomy 2023

Press Release

The Shaw Prize in Astronomy 2023 is awarded in equal shares to **Matthew Bailes**, Director of the Australian Research Council (ARC) Centre of Excellence for Gravitational Wave Discovery, **Duncan Lorimer**, Professor and Interim Chair of Physics and Astronomy and Associate Dean for Research at Eberly College of Arts and Sciences at West Virginia University, USA and **Maura McLaughlin**, Eberly Family Distinguished Professor at the Department of Physics and Astronomy and Director of the Center for Gravitational Waves and Cosmology, West Virginia University, USA for the discovery of fast radio bursts (FRBs).

FRBs are among the most extreme and mysterious phenomena in astronomy: they are intense bursts of radio emission lasting only a few thousandths of a second that contain as much energy as the Sun emits over several days. The sources of the bursts are smaller than the Earth but are as far away as distant galaxies. In a seminal research paper written in 2007, **Bailes, Lorimer, McLaughlin** (with collaborators Narkevic and Crawford) found the first FRB; deduced many of the properties of its source, in particular its extreme distance, small size, and enormous energy; estimated the cosmic rate of production of FRBs; and highlighted their potential as cosmological probes.

Despite initial scepticism about whether this unique event was a real astronomical source, the work by **Bailes, Lorimer** and **McLaughlin** inspired others to search for these elusive events. By now almost a thousand FRBs have been discovered. Telescopes based on novel technologies are being designed and built specifically to find FRBs and identify their host galaxies.

Although the nature of FRBs remains unknown, they are almost certainly associated with neutron stars, collapsed stellar remnants that contain the mass of the Sun within a diameter of only a few tens of kilometers. FRBs have the potential to provide a unique probe of physics in extreme conditions and of the distribution of matter in the universe.

The Shaw Prize in Astronomy 2023

Press Release (Cont'd)

Matthew Bailes is on the faculty of Swinburne University of Technology in Melbourne, Australia. **Duncan Lorimer** and **Maura McLaughlin** are on the faculty at West Virginia University in Morgantown, West Virginia, USA. This award is also intended to recognise the other collaborators in this research, and the investigators who collected the original data for other purposes.

Astronomy Selection Committee
The Shaw Prize

31 May 2023, Hong Kong (Revised)

THE
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Life Science &
Medicine

The Shaw Prize in Life Science and Medicine 2023
is awarded in equal shares to

Patrick Cramer and
Eva Nogales

for pioneering structural biology that enabled visualisation, at the level of individual atoms, of the protein machines responsible for gene transcription, one of life's fundamental processes. They revealed the mechanism underlying each step in gene transcription, how proper gene transcription promotes health, and how dysregulation causes disease.

30 May 2023, Hong Kong

Biographical Notes of Shaw Laureates in Life Science and Medicine 2023

Patrick Cramer was born in 1969 in Stuttgart, Germany and is currently Director, Department of Molecular Biology, Max Planck Institute for Multidisciplinary Sciences and President-Elect of the Max Planck Society, Germany. He received his Diploma in Chemistry from the University of Heidelberg, Germany in 1995 and obtained a PhD from the University of Heidelberg/EMBL Grenoble, France in 1998. He was a postdoctoral fellow (1999–2001) at Stanford University, USA. He then worked at the University of Munich, Germany, where he was successively Tenure-track Professor (2001–2003), Professor (2004–2014), Director of the Gene Center (2004–2013) and Director of Biochemistry Department (2010–2013). He was appointed Director, Department of Molecular Biology at Max Planck Institute of Biophysical Chemistry, Germany (2014–2021). He is a member of the German National Academy of Sciences Leopoldina, the Academy of Europe and the US National Academy of Sciences.

Eva Nogales was born in Colmenar Viejo, Spain and is currently Distinguished Professor of Biochemistry, Biophysics and Structural Biology, Department of Molecular and Cell Biology, University of California, Berkeley, USA. She received her Bachelor's degree from the Universidad Autonoma de Madrid, Spain in 1988 and obtained a PhD in Biophysics from the University of Keele, UK in 1993. She carried out postdoctoral training (1993–1995) and was appointed as Staff Scientist (1995–1998) at the Lawrence Berkeley National Laboratory, USA. She joined the Department of Molecular and Cell Biology, UC Berkeley in 1998 where she was successively Assistant Professor (1998–2003), Associate Professor (2003–2006), Professor (2006–2021) and Distinguished Professor (2021–). She is also an Investigator of the Howard Hughes Medical Institute, a member of the US National Academy of Sciences and the American Academy of Arts and Sciences.

30 May 2023, Hong Kong

The Shaw Prize in Life Science and Medicine 2023

Press Release

The Shaw Prize in Life Science and Medicine 2023 is awarded in equal shares to **Patrick Cramer**, Director, Department of Molecular Biology, Max Planck Institute for Multidisciplinary Sciences and President-Elect of the Max Planck Society, Germany and **Eva Nogales**, Distinguished Professor of Biochemistry, Biophysics and Structural Biology, Department of Molecular and Cell Biology, University of California, Berkeley, USA for pioneering structural biology that enabled visualisation, at the level of individual atoms, of the protein machines responsible for gene transcription, one of life's fundamental processes. They revealed the mechanism underlying each step in gene transcription, how proper gene transcription promotes health, and how dysregulation causes disease.

The Central Dogma, a theory put forward in 1958 by Francis Crick, is the fundamental concept of life. Three crucial molecules are involved: DNA houses an organism's genetic blueprint. The DNA genome contains the information required to produce all of an organism's proteins. Proteins endow cells, tissues, and organisms with their forms and capabilities. Messenger RNA (mRNA) is the intermediate molecule that links DNA to proteins. Particular DNA instructions are converted into individual mRNA molecules to produce specific proteins by a process called gene transcription. Crucially, transcription of specific genes must occur at the correct times and in the correct cellular locations so that the subsets of proteins required for function are only produced when and where they are needed. The gene transcription process has four steps: 1. Initiation; 2. Pausing/Promoter Clearance; 3. Elongation; 4. Termination. This year's Shaw Prize recipients, **Eva Nogales** and **Patrick Cramer**, pioneered structural biology approaches to enable visualisation, at the level of the individual atoms, of the protein machines responsible for gene transcription. They revealed the molecular mechanism underlying each step in gene transcription, and the importance of proper gene transcription to promote health and prevent disease.

The Shaw Prize in Life Science and Medicine 2023

Press Release (Cont'd)

Visualising biology at the atomic level requires determining the structures of the tiny but highly complicated machines that catalyse life processes. Two major approaches are used: x-ray crystallography and cryo-electron microscopy. **Eva Nogales** pioneered cryo-electron microscopy to transform our understanding of the earliest steps in gene transcription by focusing her efforts on the transcription pre-initiation complex (PIC). The core of this mini-machine is composed of 14 proteins and DNA and it is required for the launch of the gene transcription process. What is remarkable is that the PIC complex is scarce, fragile, and extremely flexible, all of which made the structures **Nogales** captured a Herculean accomplishment. **Nogales** revealed how the main player in the complex, a protein called RNA Polymerase II, engages DNA, how the DNA double helix is opened up to expose the site needed for the PIC complex to bind, how, once bound, the PIC complex is stabilised on the DNA, and how coupling occurs between PIC states to allow transcription initiation. **Patrick Cramer** used x-ray crystallography and cryo-electron microscopy to determine many breathtaking structures capturing the sequential steps of gene transcription. **Cramer's** array of structures includes the full PIC, a 46 protein machine that contains crucial players called Mediator and TFIIF. **Cramer** also solved structures of RNA polymerase II after it initiates synthesis of an mRNA messenger. These structures include the paused elongation complex, the elongation complex in action, the elongation complex together with the nucleosome (nucleosomes are proteins with DNA wrapped around them and the elongation complex must clear them to proceed), the elongation complex with the nucleosome and remodeling factors, and the elongation complex with the pre-mRNA splicing complex (the splicing complex stitches mRNAs together following elongation). Combined, **Cramer's** extraordinary structures provide the world's first "movie" of gene transcription.

The Shaw Prize in Life Science and Medicine 2023

Press Release (Cont'd)

Nogales' and **Cramer's** landmark discoveries drove a paradigm shift in our understanding of one of life's most central processes: gene transcription. They showed how transcription can initiate and proceed, and how transcription is regulated to enable cells to differentiate so that organisms can properly develop and function.

Life Science and Medicine Selection Committee
The Shaw Prize

30 May 2023, Hong Kong

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Mathematical
Sciences

The Shaw Prize in Mathematical Sciences 2023
is awarded in equal shares to

Vladimir Drinfeld and
Shing-Tung Yau

for their contributions related to mathematical physics, to arithmetic geometry, to differential geometry and to Kähler geometry.

30 May 2023, Hong Kong

Biographical Notes of Shaw Laureates in Mathematical Sciences 2023

Vladimir Drinfeld was born in 1954 in Kharkov, Ukraine, USSR (now Kharkiv, Ukraine) and is currently Harry Pratt Judson Distinguished Service Professor of Mathematics at the University of Chicago, USA. He received his Bachelor's degree and PhD from Moscow State University, USSR in 1974 and 1978 respectively. He was appointed Assistant Professor at Bashkir State University, USSR in 1978 and Lecturer at Kharkov State University in 1980 respectively. He then served as Research Fellow at B Verkin Institute for Low Temperature Physics and Engineering from 1981 to 1998. He has been Professor of Mathematics at the University of Chicago since 1998. He is a member of the American Academy of Arts and Sciences and a fellow of the Academy of Sciences, Ukraine.

Shing-Tung Yau was born in 1949 in Shantou, China and is currently Chair Professor and Director of Yau Mathematical Sciences Center at Tsinghua University, PRC. He studied Mathematics at the Chinese University of Hong Kong (CUHK) from 1966 to 1969 and received a PhD in 1971 from the University of California, Berkeley, USA. He was a member (1971–1972) of the Institute for Advanced Study (IAS) at Princeton, USA and Assistant Professor (1972–1974) at the State University of New York at Stony Brook, USA. He joined Stanford University, USA where he was successively Associate Professor and Full Professor (1974–1979). He returned to IAS in 1980, where he has been appointed Professor (1980–1984). In 1984, he moved to the University of California at San Diego, USA as Professor (1984–1987). He then joined Harvard University, USA, where he has been a Distinguished Professor (from 1987), Director of Institute of Mathematical Sciences (from 1994) and also Professor at the Department of Physics (from 2013), becoming Emeritus in 2022. He has been a Distinguished Professor-at-Large at CUHK since 2003. He is a member of the Chinese Academy of Sciences, the US National Academy of Sciences and the American Academy of Arts and Sciences.

31 May 2023, Hong Kong (Revised)

The Shaw Prize in Mathematical Sciences 2023

Press Release

The Shaw Prize in Mathematical Sciences 2023 is awarded in equal shares to **Vladimir Drinfeld**, Harry Pratt Judson Distinguished Service Professor of Mathematics at the University of Chicago, USA and **Shing-Tung Yau**, Chair Professor at Tsinghua University, PRC, for their contributions related to mathematical physics, to arithmetic geometry, to differential geometry and to Kähler geometry.

They share an interest in mathematical physics. **Drinfeld** launched with Beilinson the geometric Langlands program, which, to quote Witten, has some common features with aspects of quantum field theory, and yet stems from number theory. **Yau** worked on mathematical problems arising from general relativity and string theory.

Drinfeld invented at an early age the shtukas (coming from *Stück* in German, meaning “piece”) in resonance with the Korteweg–de Vries equation in physics. With it, he solved the arithmetic Langlands program over a function field in rank two, for which he was awarded the Fields Medal in 1990. It was then already noticed that his solution proved at the same time a conjecture of Deligne on the existence of compatible ℓ -adic systems in rank two. Remarkably, after the Langlands program over a function field was proven in any rank in 2002 by L Lafforgue, following **Drinfeld**’s method, **Drinfeld** could extend the existence of compatible ℓ -adic systems in any rank from function fields to higher-dimensional varieties. This complete solution to the Deligne conjecture has multiple consequences, even in complex geometry.

The Shaw Prize in Mathematical Sciences 2023

Press Release (Cont'd)

In today's p -adic Hodge theory, and in the dreamed Langlands program over a number field, it is expected that **Drinfeld's** shtukas should be a key concept as suggested by Scholze's general conjectures exposed in his ICM 2018 plenary address. Moreover, **Drinfeld's** view on Bhatt–Scholze prismatic cohomology and its systems of coefficients led to a new understanding of the theory and to applications.

Drinfeld's work is a pillar of arithmetic geometry which is at the core of new developments in the field.

Yau developed systematically partial differential equation methods in differential geometry. With these, he solved the Calabi conjecture, for which he was awarded the Fields medal in 1982, the existence of Hermitian Yang–Mills connections (with Uhlenbeck), and the positive mass conjecture (with Schoen) for which they used the theory of minimal surfaces. He introduced geometric methods to important problems in general relativity, which led for example to Schoen–Yau's black-hole existence theorem and to an intrinsic definition of quasi-local mass in general relativity.

Yau's work on the existence of a Kähler–Einstein metric led to the solution to the Calabi conjecture, and to the concept of Calabi–Yau manifolds, which are cornerstones both in string theory and in complex geometry. The Strominger–Yau–Zaslow construction has had a major impact on mirror symmetry.

His work (with P Li) on heat kernel estimates and differential Harnack inequalities has changed the analysis of geometric equations on manifolds. It has influenced the development of optimal transportation and Hamilton's work on Ricci flow.

The Shaw Prize in Mathematical Sciences 2023

Press Release (Cont'd)

Yau contributed to the fusion of geometry and analysis, now known as geometric analysis. His work has had a deep and lasting impact on both mathematics and theoretical physics.

Mathematical Sciences Selection Committee
The Shaw Prize

31 May 2023, Hong Kong (Revised)

The Shaw Prize 2023

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Professor Reinhard GENZEL

Director

Max Planck Institute for

Extraterrestrial Physics

GERMANY



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Professor Kenneth YOUNG

Emeritus Professor of Physics

The Chinese University of Hong Kong



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Selection Committee

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The Shaw Prize in Mathematical Sciences

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Biozentrum, University of Basel

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Professor Fiona M WATT

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Director of Centre for Stem Cells &

Regenerative Medicine

King's College London

UK

Professor Huda Y ZOGHBI

Professor of Pediatrics,

Molecular and Human Genetics, Neurology

and Neuroscience, Baylor College of Medicine

USA

Professor Gerd FALTINGS

Director and Scientific Member

Max Planck Institute for Mathematics

GERMANY

Professor Takashi KUMAGAI

Professor

Department of Mathematics

Faculty of Science and Engineering

Waseda University, Tokyo

JAPAN

Professor Ngaiming MOK

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Chair of Mathematics

Department of Mathematics

The University of Hong Kong

Professor Horng-Tzer YAU

Merton Professor of Mathematics

Department of Mathematics

Harvard University

USA

Council Members

Professor Kenneth Young (Chair)

Dr 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.

Dr 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 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.

30 May 2023, Hong Kong

The Shaw Laureates 2004–23

	Astronomy	Life Science and Medicine	Mathematical Sciences
2023	Matthew Bailes (Australia) Duncan Lorimer (USA) Maura McLaughlin (USA)	Patrick Cramer (Germany) Eva Nogales (USA)	Vladimir Drinfeld (USA) Shing-Tung Yau (PRC)
2022	Lennart Lindegren (Sweden) Michael Perryman (Ireland)	Paul A Negulescu (USA) Michael J Welsh (USA)	Noga Alon (USA) Ehud Hrushovski (UK)
2021	Victoria M Kaspi (Canada) Chryssa Kouveliotou (USA)	Scott D Emr (USA)	Jean-Michel Bismut (France) Jeff Cheeger (USA)
2020	Roger D Blandford (USA)	Gero Miesenböck (UK) Peter Hegemann (Germany) Georg Nagel (Germany)	Alexander Beilinson (USA) David Kazhdan (Israel)
2019	Edward C Stone (USA)	Maria Jasin (USA)	Michel Talagrand (France)
2018	Jean-Loup Puget (France)	Mary-Claire King (USA)	Luis A Caffarelli (USA)
2017	Simon D M White (Germany)	Ian R Gibbons (USA) Ronald D Vale (USA)	János Kollár (USA) Claire Voisin (France)
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)
2015	Willian J Borucki (USA)	Bonnie L Bassler (USA) E Peter Greenberg (USA)	Gerd Faltings (Germany) Henryk Iwaniec (USA)
2014	Daniel Eisenstein (USA) Shaun Cole (UK) John A Peacock (UK)	Kazutoshi Mori (Japan) Peter Walter (USA)	George Lusztig (USA)
2013	Steven A Balbus (UK) John F Hawley (USA)	Jeffrey C Hall (USA) Michael Rosbash (USA) Michael W Young (USA)	David L Donoho (USA)
2012	David C Jewitt (USA) Jane Luu (USA)	Franz-Ulrich Hartl (Germany) Arthur L Horwich (USA)	Maxim Kontsevich (France)

The Shaw Laureates 2004–23 (Cont'd)

	Astronomy	Life Science and Medicine	Mathematical Sciences
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)
2010	Charles L Bennett (USA) Lyman A Page Jr (USA) David N Spergel (USA)	David Julius (USA)	Jean Bourgain (USA)
2009	Frank H Shu (USA)	Douglas L Coleman (USA) Jeffrey M Friedman (USA)	Simon K Donaldson (UK) Clifford H Taubes (USA)
2008	Reinhard Genzel (Germany)	Ian Wilmut (UK) Keith H S Campbell (UK) Shinya Yamanaka (Japan)	Vladimir Arnold (Russia) Ludwig Faddeev (Russia)
2007	Peter Goldreich (USA)	Robert Lefkowitz (USA)	Robert Langlands (USA) Richard Taylor (UK)
2006	Saul Perlmutter (USA) Adam Riess (USA) Brian Schmidt (Australia)	Xiaodong Wang (USA)	David Mumford (USA) Wentsun Wu (PRC)
2005	Geoffrey Marcy (USA) Michel Mayor (Switzerland)	Michael Berridge (UK)	Andrew John Wiles (UK)
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 (PRC)

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.