

Programme

Welcoming address

Professor Freedom Yiu-Kin LEUNG

Head of Shaw College, The Chinese University of Hong Kong

Introduction of speakers

Professor Kwok-Wai CHAN

Professor, Department of Mathematics, Faculty of Science
The Chinese University of Hong Kong

Lecture on “**Toward Shimurian Analogs of Barsotti-Tate Groups**”

Professor Vladimir DRINFELD

Harry Pratt Judson Distinguished Service Professor
Department of Mathematics, University of Chicago, USA

Lecture on “**The Gravity of Math.**”

Professor Shing-Tung YAU

Chair Professor and Director, Yau Mathematical Sciences Center
Tsinghua University, PRC
Distinguished Visiting Professor-at-Large and Director of the Institute
of Mathematical Sciences, The Chinese University of Hong Kong

Questions and answers

Moderated by Professor Kwok-Wai CHAN

Souvenir presentation and photo-taking



20th
Anniversary

The Shaw Prize

The Shaw Prize is an international award to honour individuals, regardless of race, nationality, gender and religious belief, 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.

The Shaw Prize, established under the auspices of Sir Run Run Shaw in November 2002, is managed and administered by The Shaw Prize Foundation based in Hong Kong. The Shaw Prize consists of three annual awards: the Prize in Astronomy, the Prize in Life Science and Medicine, and the Prize in Mathematical Sciences. The prizes were first awarded in 2004.

The Shaw Laureates 2023

The Shaw Prize in Astronomy

Professor Matthew BAILES

Professor Duncan LORIMER

Professor Maura MCLAUGHLIN

The Shaw Prize in Life Science and Medicine

Professor Patrick CRAMER

Professor Eva NOGALES

The Shaw Prize in Mathematical Sciences

Professor Vladimir DRINFELD

Professor Shing-Tung YAU



Shaw College

Named after the Founding Patron, Shaw College was made possible by the generosity of Sir Run Run Shaw, who donated HK\$110 million to The Chinese University of Hong Kong for the founding of the fourth constituent college.

The ordinance that gives legal effect to this important development of the University was passed by the Legislative Council in July 1986 and became law on 1 August of the same year. The foundation stone of the College campus was laid by Sir Run Run Shaw, the Founding Patron and Sir David Akers-Jones, the then Acting Governor, on 12 January 1987. On 2 March 1990, Shaw College was officially opened by the then Hong Kong Governor, Chancellor of the University, Sir David Wilson and Sir Run Run Shaw.

The motto of the College “修德講學” comes from a saying of Confucius. In Book VII of The Analects of Confucius, the Master said, “It is these things that cause me concern: failure to cultivate virtue; failure to go more deeply into what I have learned; inability, when I am told what is right, to go over to where it is; and inability to reform myself when I have defects.”

It is interesting that the cultivation of virtue and the going more deeply into what one has learned are placed by Confucius at the head of the list of things that caused him concern. The reason is not far to seek. The former concerns one’s moral character, while the latter is the way to new knowledge. A man of sound moral character eager to make new discoveries on the strength of existing knowledge is, in the eyes of Confucius, close to the ideal of the gentleman.

Founding Aspiration

Learning, innovation and benefitting humankind

College Slogan

Excellence with a soul, Leadership with a heart

Founding Patron of the College

The late Sir Run Run Shaw, world renowned philanthropist and movie and television magnate, was the Founding Patron of Shaw College. With his usual generosity and particular concern for the education of the young, in 1986 he made possible the creation of a fourth college at The Chinese University of Hong Kong, promising learning excellence to future generations.



Sir Run Run Shaw

Sir Run Run was Executive Chairman of two of Hong Kong's most successful entertainment and media listed public companies: Shaw Brothers (HK) Limited and Television Broadcasts Limited (TVB). His contribution to the entertainment industry is legendary, as is his generosity towards education and the arts.

Sir Run Run began his close association with the Chinese University in 1967 when he became a Member of the Board of Trustees of United College. Later, he served as a Member of the University Council and Chairman of United College for many years. In March 1992, he was appointed as a Life Member of the University Council and Permanent Honorary Chairman of United College.

Widely acclaimed for his long years of community service, Sir Run Run received international awards from several countries, including the United Kingdom, Belgium and France, and in July 1998 was awarded Hong Kong's highest honour the Grand Bauhinia Medal by the HKSAR Government. Moreover, he received honorary doctorate degrees from the UK and the USA, and nearer to home from China, Macau and Hong Kong. A staunch advocate for the Hong Kong Red Cross, he served as President for over twenty-six years and in 1998 became Vice Patron.

In his later years, Sir Run Run resolved to use his modest influence in the global advancement of knowledge and research and together with his wife, the late Mrs Mona Shaw, established the Shaw Prize to recognize imaginative individuals who have contributed to furthering societal progress, enhancing quality of life, and enriching humanity's spiritual civilization. The Shaw Prize continues to move forward under the direction of the Shaw Prize Foundation.

Professor Vladimir DRINFELD

Professor 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.



Lecture Synopsis

“Toward Shimurian Analogs of Barsotti-Tate Groups”

- Professor Vladimir DRINFELD

Fix a prime p . For any positive integer n , there is a class of finite group schemes called BT_n groups (or n -truncated Barsotti-Tate groups); a typical example of a BT_n group is the kernel of multiplication by p^n in an abelian variety.

For given positive integers m and n , one would like to describe the reduction modulo p^m of the stack of BT_n groups. One would also like to construct analogs of these reductions, which are related to Shimura varieties.

These problems are open but not hopeless.

Professor Shing-Tung YAU

Professor 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 was 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.



Lecture Synopsis

“The Gravity of Math.”

- **Professor Shing-Tung YAU**

Geometry is a beautiful subject, and the key to understanding geometry is the concept of curvature which is an important bridge between geometry and general relativity. In this talk, I will review my works on geometry, topology and physics.

The Shaw Prize Lectures
held at
Shaw College, The Chinese University of Hong Kong

Year	Name of Laureate(s)	Award Category	Lecture Title
2022	Dr Paul A NEGULESCU	Life Science and Medicine	Fixing CFTR to Treat Cystic Fibrosis [#]
	Professor Michael J WELSH		What Goes Wrong in Cystic Fibrosis and Can It Be Repaired? [#]
2021	Professor Victoria M KASPI	Astronomy	Magnetars and Anomalous X-ray Pulsars [#]
	Professor Chryssa KOUVELIOTOU		Magnetars: extremes of the High Energy Universe [#]
2020	Professor Alexander BEILINSON	Mathematical Sciences	Zeta values and motivic periods [#]
	Professor David KAZHDAN		Symmetry through the Representation Theory [#]
2019	Professor Maria JASIN	Life Science and Medicine	Genome Modification by Natural and Artificial DNA Breaks

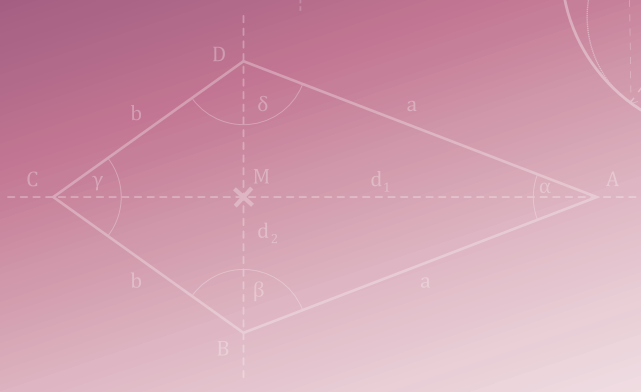
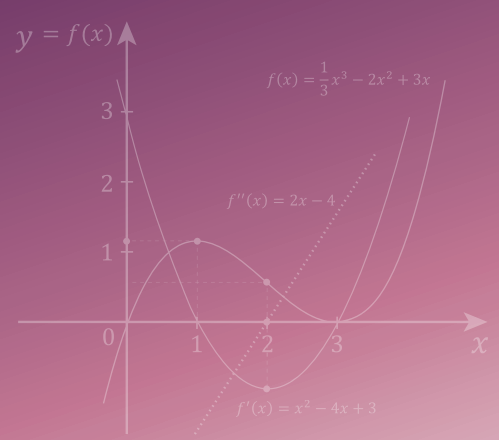
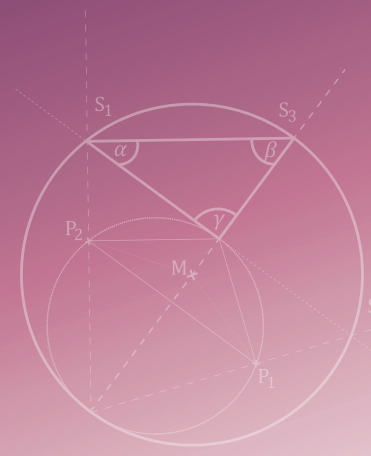
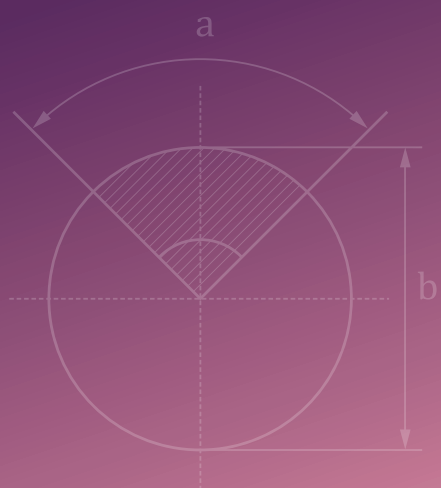
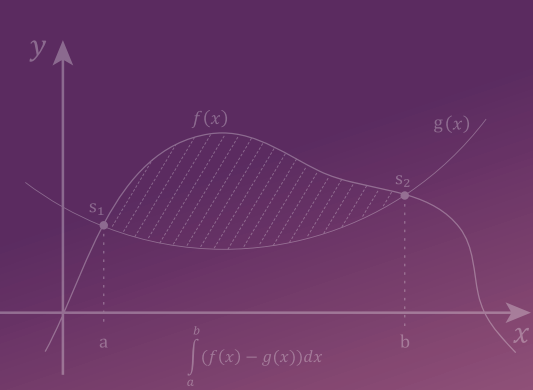
[#] Lecture was held online due to COVID-19.

Year	Name of Laureate(s)	Award Category	Lecture Title
2018	Dr Jean-Loup PUGET	Astronomy	Space observations of the Cosmic Backgrounds from Infrared to Microwave and Their Implications for Galaxy Evolution and Cosmology
2017	Professor Claire VOISIN	Mathematical Sciences	Projective Geometry, Kähler Geometry and Hodge Theory
	Professor János KOLLÁR		Circles and Algebraic Surfaces
2016	Professor Adrian P BIRD	Life Science and Medicine	From DNA Methylation to Brain Function
	Professor Huda Y ZOGHBI		Rett Syndrome : From the Clinic to Genomes, Epigenomes, and Neural Circuits
2015	Mr William J BORUCKI	Astronomy	Kepler Space Mission: A Step in the Search for Life in our Galaxy
2014	Professor George LUSZTIG	Mathematical Sciences	Algebraic and Geometric Methods in Representation Theory

Year	Name of Laureate(s)	Award Category	Lecture Title
2013	Professor Jeffrey C HALL	Life Science and Medicine	Everybody's a Dreamer, and Everybody's a Star
	Professor Michael ROSBASH		The Circadian Feedback Loop: Twenty Years and Counting
	Professor Michael W YOUNG		Genes Controlling Sleep and Circadian Rhythms
2012	Professor Jane LUU	Astronomy	Expanding the Solar System: The Kuiper Belt Discovery
	Professor David C JEWITT		Kuiper Belt: What We Know and What We Don't
2011	Professor Demetrios CHRISTODOULOU	Mathematical Sciences	Spacetime Geometry and the Einstein Equations*
	Professor Richard S HAMILTON		Hot Geometry*
2010	Professor David JULIUS	Life Science and Medicine	From Peppers to Peppermints: Natural Products as Probes of the Pain Pathway

* Lecture was cancelled due to the hoisting of Typhoon Warning Signal No.8.

Year	Name of Laureate(s)	Award Category	Lecture Title
2009	Professor Frank H SHU	Astronomy	The Formation of Stars and Planetary Systems
2008	Professor Vladimir ARNOLD	Mathematical Sciences	Mathematics of Chaos
	Professor Ludwig FADDEEV		What is Quantum Mathematical Physics
2007	Professor Robert LEFKOWITZ	Life Science and Medicine	Seven Transmembrane Receptors
2006	Professor Saul PERLMUTTER	Astronomy	Dark Energy and the Accelerating Universe: Past, Present and Future
	Professor Adam RIESS		
	Professor Brian SCHMIDT		
2005	Professor Andrew J WILES	Mathematical Sciences	Solving Equations
2004	Professor P James E PEEBLES	Astronomy	The Discovery of The Expanding Universe



Shaw College, The Chinese University of Hong Kong

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