

Gene-Editing Technologies, Fluid Mechanics Breakthroughs, and Mathematics Recognized by King Faisal Prize

The Prize's 44th session awards eminent figures in each of its Arabic Language & Literature and Service to Islam categories

RIYADH, SAUDI ARABIA, March 31, 2022 /EINPresswire.com/ -- Two mathematicians and a scientist were among this year's King Faisal Prize's seven laureates who received their prizes on 29 March in Riyadh, Saudi Arabia, for having enriched humanity with invaluable achievements and discoveries in the fields of Medicine, Science, Arabic Language & Literature, and Serving Islam.

The Medicine Prize was awarded to Professor David Liu, Director of the Merkin Institute of Transformative Technologies in Healthcare, who invented the first gene "base editor" in 2016.

This technology laid the foundation for possibly treating thousands of genetic diseases like sickle cell disease and muscular dystrophy. Professor David Liu used "base editors" in mice to correct the genetic mutation behind progeria; a rare condition characterized by premature aging, retarded development, and early death. Initiating a revolution in genome editing, "base editors" have received great global demand. They were distributed over 9,000 times to more than 3,000 laboratories around the world.

"Base editing" is a precise genome editing method; like a genetic pencil, that rewrites DNA base



King Faisal Prize 2022 Laureates with the Chairman of the Prize board, His Royal Highness Prince Khalid Al-Faisal



King Faisal Prize Laureates during the Awarding Ceremony on March 29

letters, which cause genetic mutations and potentially genetic diseases. This technology, which is in constant development, rearranges the atoms of one DNA base to resemble a different base. In 2019, Professor David Liu created with his team “prime editing” which offers more targeting flexibility and greater editing precision. Still, more work needs to be done before base and prime editors can be used in humans.

With over 75 issued U.S. patents, Professor Liu was referred to as the “Gene Corrector” by Nature magazine topping its list of “Ten People Who Mattered This Year” in 2017 and was included in the “Foreign Policy Leading Global Thinkers list”. He is also a biotech entrepreneur, cofounding “Editas Medicine”, which uses CRISPR therapies to develop precise genomic medicines.

The Science Prize (Mathematics) was awarded jointly to Professor Martin Hairer, Chair in Probability and Stochastic Analysis at Imperial College’s Department of Mathematics, and to Professor Nader Masmoudi, a distinguished Professor of Mathematics at the New York University of Abu Dhabi and head of his Research Center on Stability, Instability and Turbulence.

Professor Martin Hairer developed the theory of regularity structures which gave a precise mathematical meaning to several equations that were previously outside the scope of mathematical analysis. He published his theory in 2014 providing tools and manuals for solving many previously incomprehensible equations called the stochastic partial differential equations (SPDEs), which involve chance and describe how randomness throws disorder into different phenomena like coin tossing, stock price changes, or forest fire growth. He was able to solve equations like KPZ equation which describes the evolution of the boundary at which two substances meet over time.

Professor Hairer is a world leader in probability theory and analysis and has authored over 100 research articles. His work has been distinguished with several prizes, most notably the LMS Whitehead and Philip Leverhulme prizes in 2008, the Fermat prize in 2013, the Fröhlich prize and the Fields Medal in 2014, a knighthood in 2016, and the Breakthrough prize in Mathematics in 2020.

As for Professor Nader Masmoudi, he was able to unlock the mystery around many physics problems which remained unsolved for centuries. He found a flaw in “Euler’s” equations, which for more than two centuries described the motions of fluids under any circumstance, discovering that they do not apply to all circumstances, as previously thought, and proved that they could fail under certain conditions related to fluids. His work helped solve and understand many problems related to fluid-modeling like weather predictions and airplane turbulence.

For the past 20 years, Professor Masmoudi’s research has been at the forefront of Partial Differential Equations, Fluid Mechanics, and Dynamical Systems. He has been cited by more than 8000 papers for his works in pure and applied mathematics and honored with many recognitions including the Best Scientific Paper Award in Annales de l’Institut Henri Poincaré, a

Chair from the Fondation Sciences Mathématiques de Paris, The Fermat Prize, and the Chair Schlumberger from the IHES in Paris.

In addition to Medicine and Science, King Faisal Prize recognized this year the achievements of outstanding thinkers and scholars in the field of Arabic Language & Literature, and honored exemplary leaders who played a pivotal role in serving Islam and humanity at large.

The Arabic Language and Literature Prize about “Arabic Literature Studies in English” was awarded to Professor Suzanne Stetkevych, Chair of the Department of Arabic & Islamic Studies at Georgetown University, and to Professor Muhsin Al-Musawi, Professor of Arabic and Comparative Literary Studies at Columbia University.

Professor Suzanne Stetkevych was honored for her extensive work analyzing Arabic literature with unmatched depth from the pre-Islamic period to the revivalist period. Her research approach resulted in the renewal of the critical perspective and methods of studying classical Arabic poetry.

Professor Muhsin Al-Musawi was recognized for being a well-established authority in the field of Arabic literature demonstrating his encyclopedic knowledge in both classical and modern Arabic literature. His research and studies have made great impact on students and researchers in Arabic studies, both in the Arab world and the West. He handled Arabic literature as a world literature.

The Service to Islam Prize was awarded to the former Tanzanian President His Excellency Ali Hassan Mwinyi and to Professor Hassan Mahmoud Al Shafei. His Excellency Ali Hassan Mwinyi actively participated in spreading the spirit of religious tolerance, educating Muslims, and translating many Islamic resources and references into Swahili language. In parallel, Professor Hassan Mahmoud Alshafei served Islamic sciences through teaching, writing, authenticating, and translating, and has contributed to establishing the International Islamic University in Islamabad.

The Islamic Studies Prize for this year on “Islamic Heritage of Al- Andalus” was withheld because the nominated works did not meet the prize criteria.

Since 1979, King Faisal Prize in its 5 different categories has awarded 282 laureates from 44 different nationalities. Each prize laureate is endowed with USD 200 thousand; a 24-carat gold medal weighing 200 grams, and a Certificate inscribed with the Laureate’s name and a summary of their work which qualified them for the prize.

Maysa Shawwa
King Faisal Prize
+966 58 174 7005
[email us here](#)

Visit us on social media:

[Twitter](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/567095345>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2022 IPD Group, Inc. All Right Reserved.