

Nobel Creations

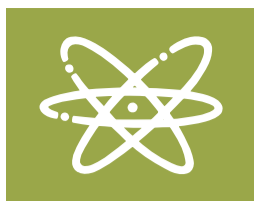


Artistic interpretations of the Nobel Prizes 2018

By:

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PHYSICS

The 2018 Nobel Prize in Physics was awarded to:

ARTHUR ASHKIN

“for the optical tweezers and their application to biological systems”

GERARD MOUROU AND DONNA STRICKLAND

“for their method of generating high-intensity, ultra-short optical pulses”

The 2018 Nobel Laureates in Physics made discoveries that enable us to use sharp beams of laser light as tools for studying very small things, or as a cutting tool. Ashkin invented a laser light “tweezers” that can grab such objects as atoms, molecules and bacteria without harming them. Mourou and Strickland invented a way to generate extremely short laser light pulses that can be used in eye surgery, for example.



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CHEMISTRY

The 2018 Nobel Prize in Chemistry was awarded to:

FRANCES H. ARNOLD
“for the directed evolution of enzymes”

GEORGE P. SMITH AND SIR GREGORY P. WINTER
“for the phage display of peptides and antibodies”

The 2018 Nobel Laureates in Chemistry developed a smart way of producing certain kinds of proteins (enzymes and antibodies). These new proteins can be employed to speed up chemical reactions or to produce pharmaceuticals. The methods they used can be described as being based on imitating evolution in the lab. By randomly altering genes, researchers create numerous variants of a protein. Then they can select the protein they believe works best and repeat the process.



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**PHYSIOLOGY
OR MEDICINE**

The 2018 Nobel Prize in Physiology or Medicine was awarded to:

JAMES P ALLISON

TASUKO HONJO

*“for their discovery of cancer therapy
by inhibition of negative immune regulation”*

The 2018 Nobel Laureates in Physiology or Medicine developed a method for treating various types of cancer. This therapy is based on strengthening the body’s own immune system in a way that better enables it to attack cancer cells. The medicines that have been developed using this method block the immune system’s natural braking system and thus “release the brake”.



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PEACE

The 2018 Nobel Peace Prize was awarded to:

DENIS MUKWEGE

NADIA MURAD

*“for their efforts to end the use of sexual violence
as a weapon of war and armed conflict”*

As a surgeon, Denis Mukwege has helped thousands of women who have suffered wartime sexual violence in Congo. In both national and international forums, he has also criticised the Congo government and other countries for not doing enough to combat sexual violence as a weapon of war. Nadia Murad is herself a victim of sexual violence in Syria and has told about what happened to her. Now she is working to help children and women who have been subjected to violence and human trafficking.



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ECONOMIC SCIENCES

The Sveriges Riksbank Prize in Economic Sciences
in Memory of Alfred Nobel was awarded to:

WILLIAM D. NORDHAUS

*“for integrating climate change
into long-run macroeconomic analysis” and to*

PAUL M. ROMER

*“for integrating technological innovations
into long-run macroeconomic analysis”*

William Nordhaus’ models show how the economy and climate change interact. Paul Romer has shown how the relationships between technological innovations, the market and sustainable economic growth operate. The Nobel Laureates do not solve the problems of climate change as such, but they each deliver important research that will enable political leaders to make decisions leading to sustainable development and global economic growth.

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