

THE  
NOBEL  
PRIZE

# ALL NOBEL PRIZES 2020

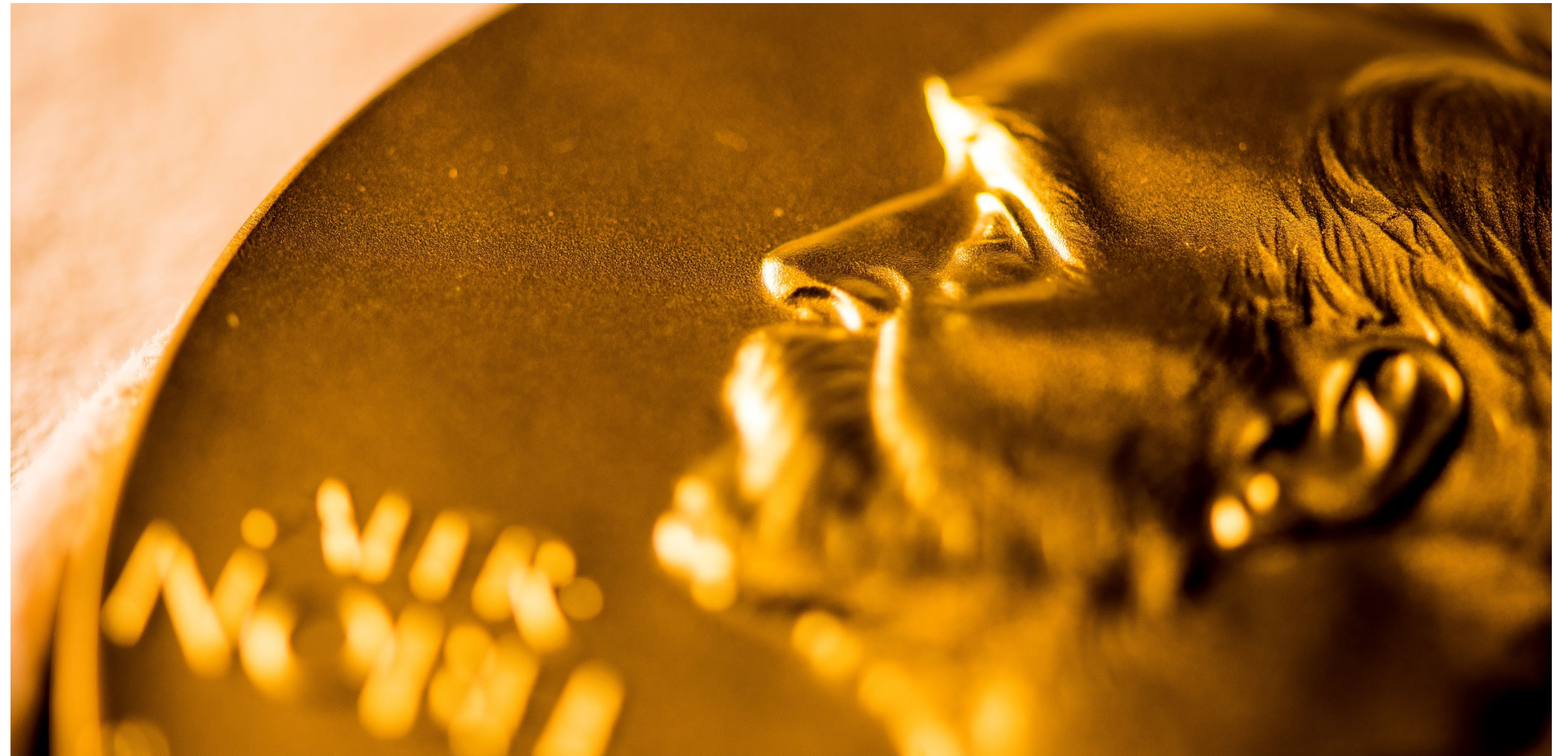


Nobel Prize Lessons

# The Nobel Prize

“to those who,  
during the  
preceding year, shall  
have conferred  
the greatest benefit  
to humankind”

Alfred Nobel  
(1833-1896)



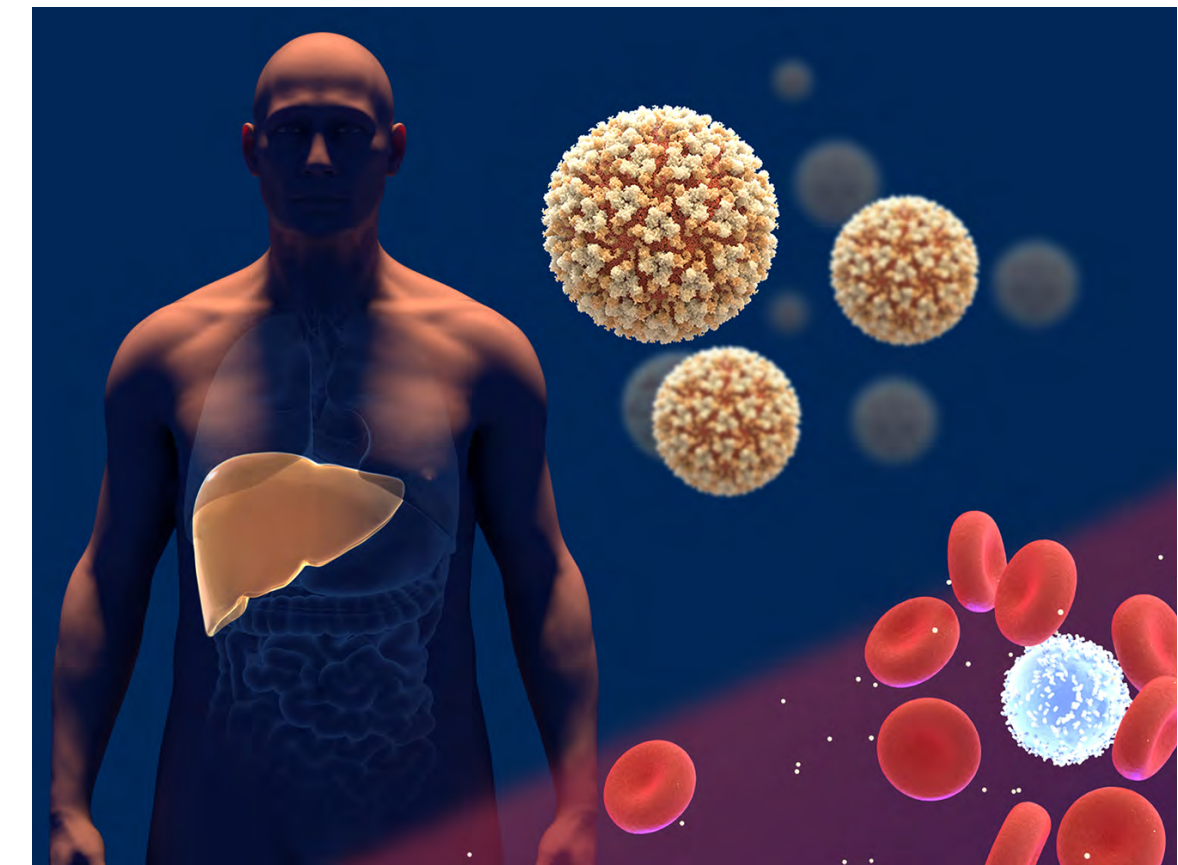
# All Nobel Prizes 2020



Physics Prize: Research on black holes



Chemistry Prize: The discovery of the genetic scissors



Medicine Prize: The discovery of Hepatitis C virus



Literature Prize: American poet Louise Glück



Peace Prize: World Food Programme (WFP)



Economic Sciences Prize: Research on auctions

# All 2020 Nobel Laureates



# The 2020 Physics Prize

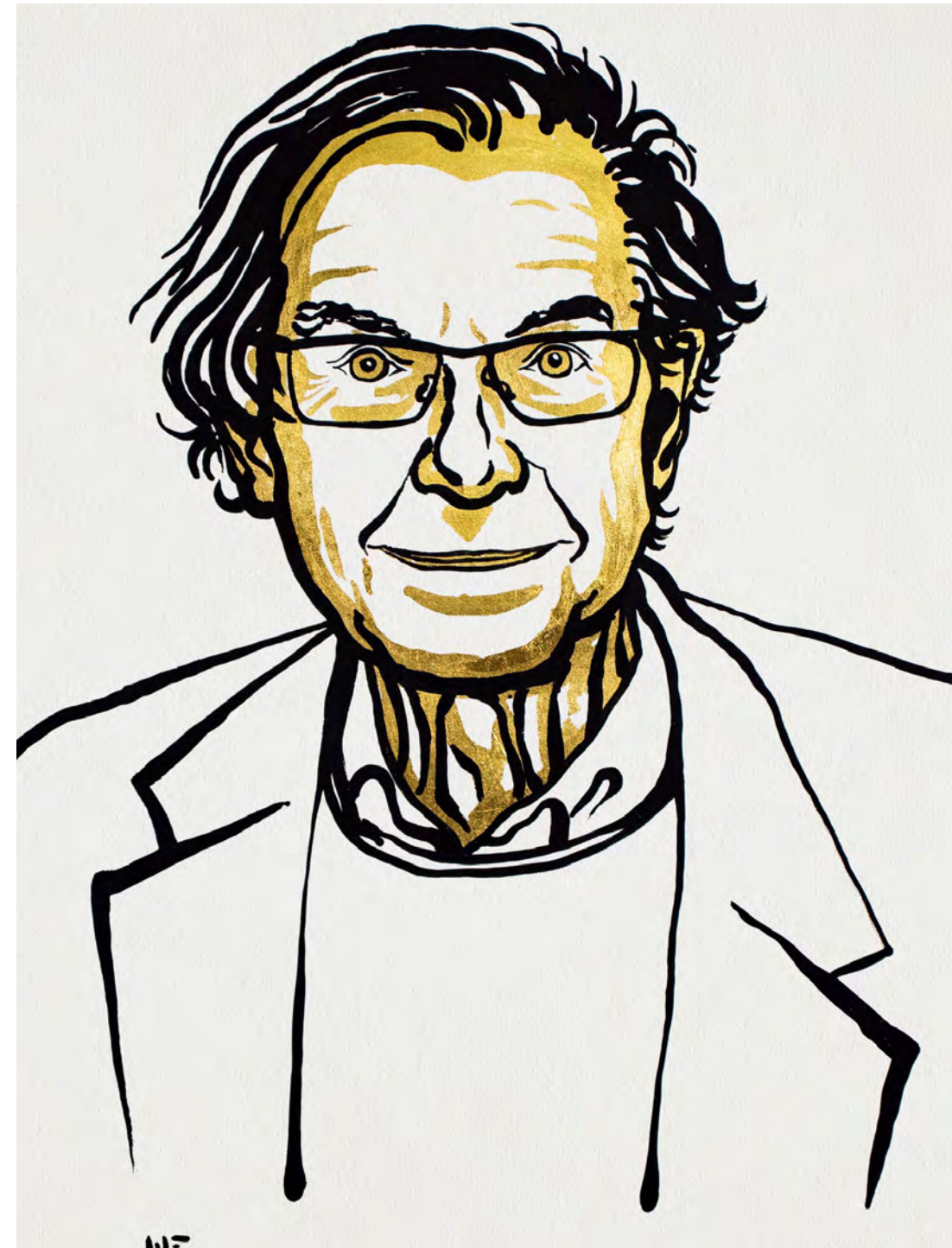
The prize rewards researchers for their discoveries about one of the strangest phenomena in the universe: black holes.



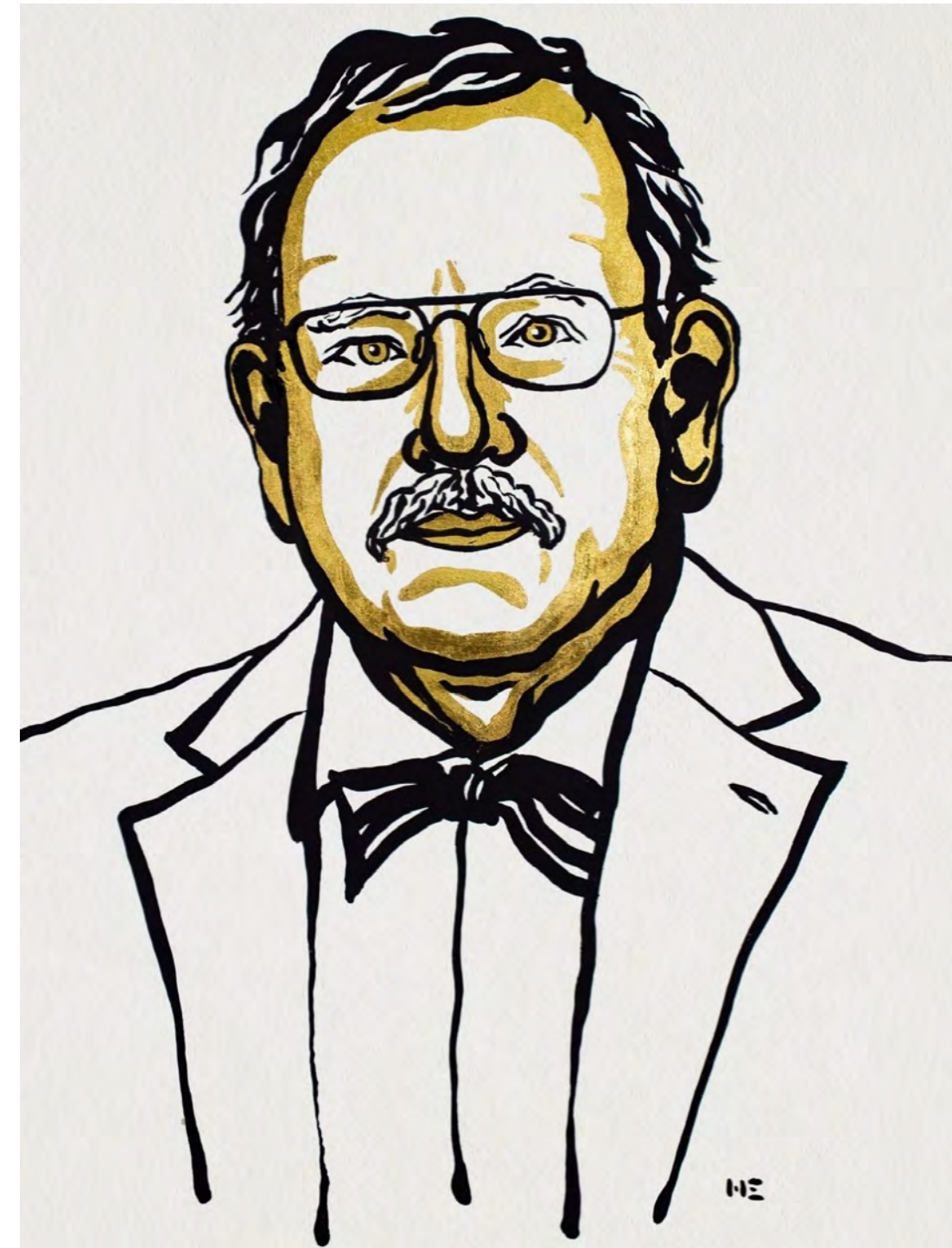
# The 2020 Physics Laureates

Roger Penrose  
"for the discovery that black hole formation is a robust prediction of the general theory of relativity"

Reinhard Genzel and Andrea Ghez  
"for the discovery of a supermassive compact object at the centre of our galaxy"



Roger Penrose  
Born: 1931, United Kingdom



Reinhard Genzel  
Born: 1952, Germany



Andrea Ghez  
Born: 1965, USA

# Black holes

Black holes are incredibly heavy and compact objects.



IMAGE: EVENT HORIZON TELESCOPE

## 2020 Chemistry Prize

The prize is awarded for the discovery of one of gene technology's sharpest tools: the CRISPR/Cas9 genetic scissors.





# The 2020 Chemistry Laureates

"for the development  
of a method for  
genome editing"



Emmanuelle Charpentier  
Born: 1968, France



Jennifer A. Doudna  
Born: 1964, USA

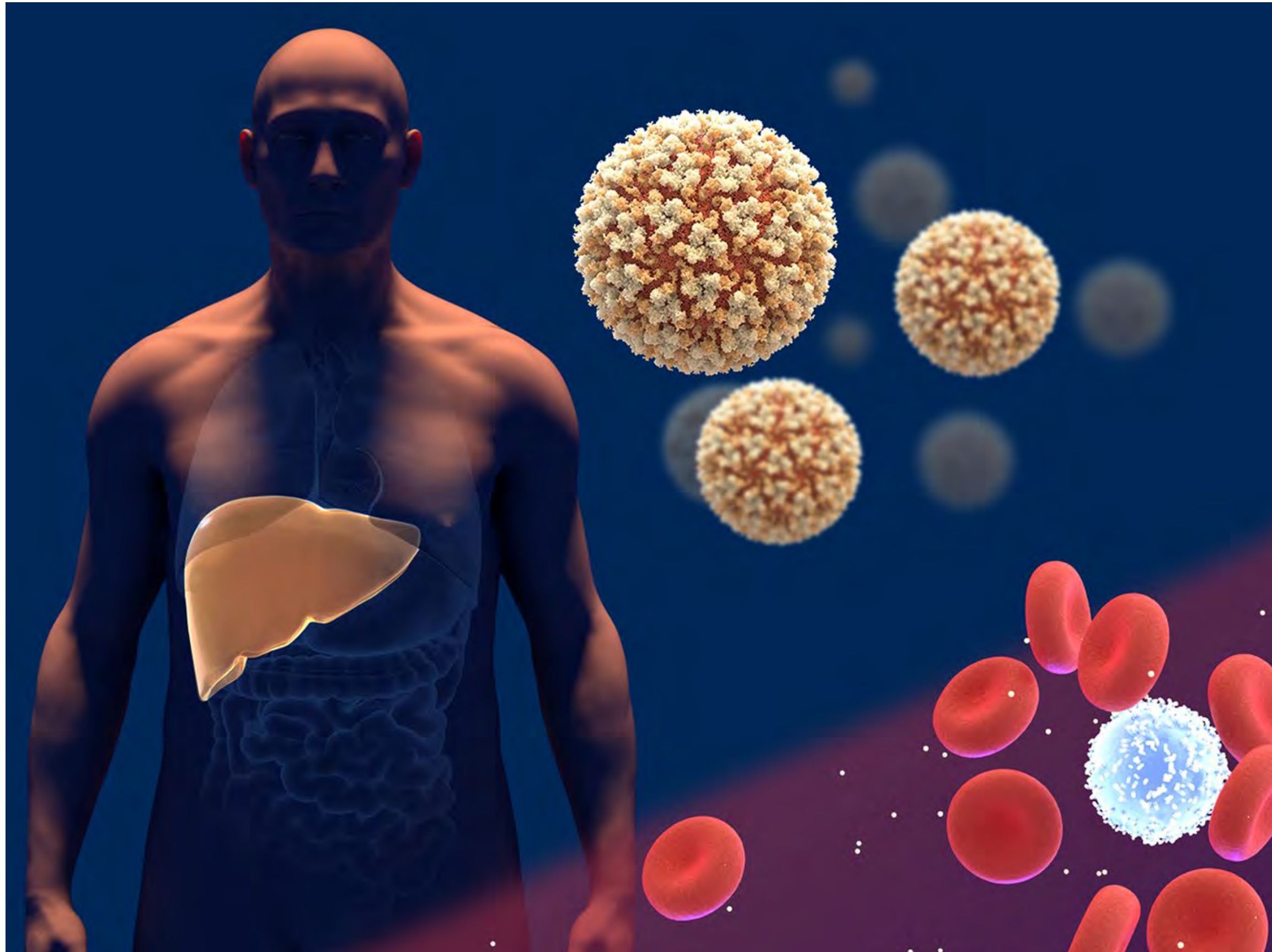
## Unlimited possibilities – but also risks

Jennifer A. Doudna, one of the laureates, holding a model of the genetic scissors. The laureates' discovery offers hope of curing serious diseases.



## 2020 Medicine Prize

The prize is awarded for pioneering research that led to the discovery of a new virus that causes the disease hepatitis.

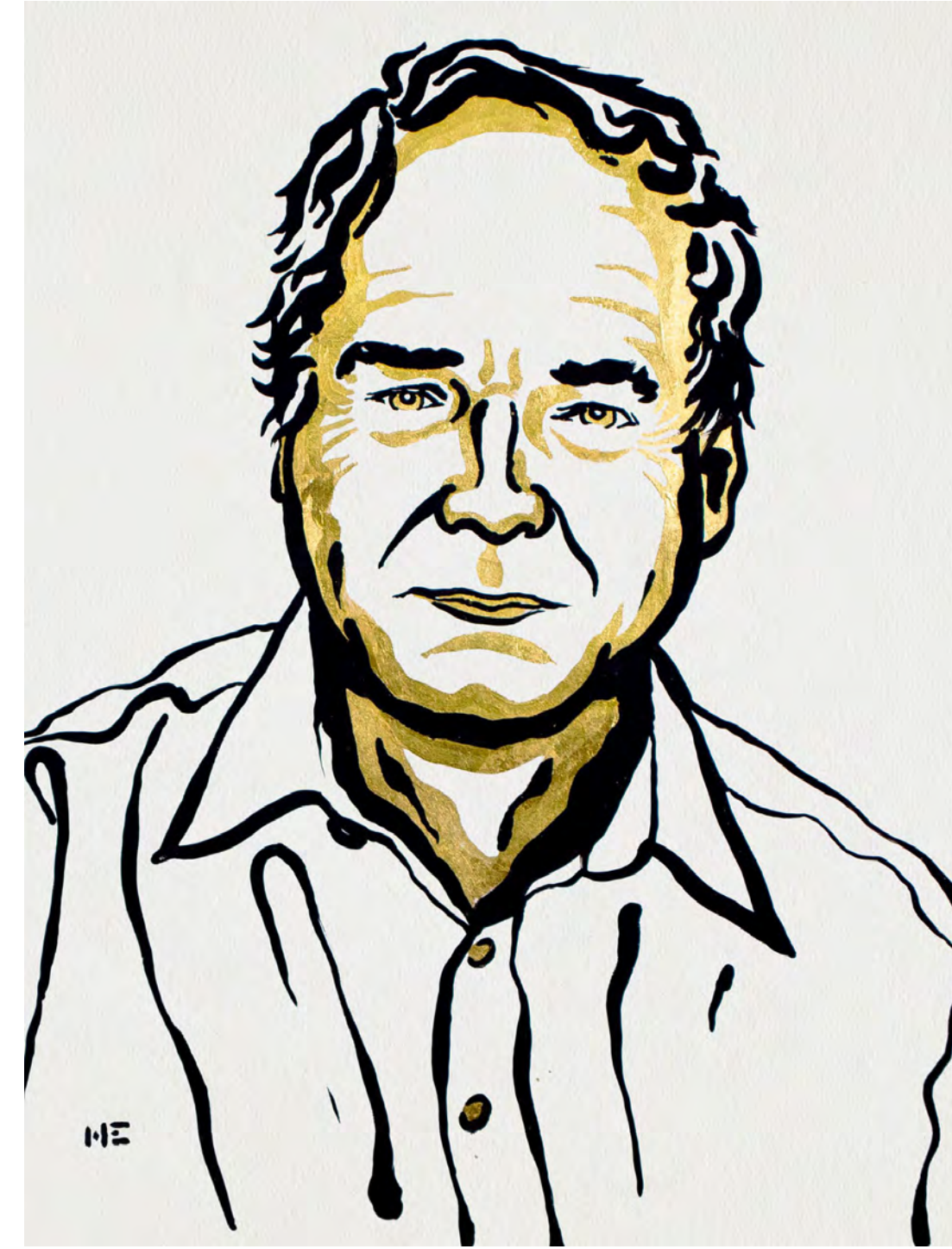


# The 2020 Medicine Laureates

“For the discovery of  
Hepatitis C virus”



Harvey J. Alter  
Born: 1935, USA

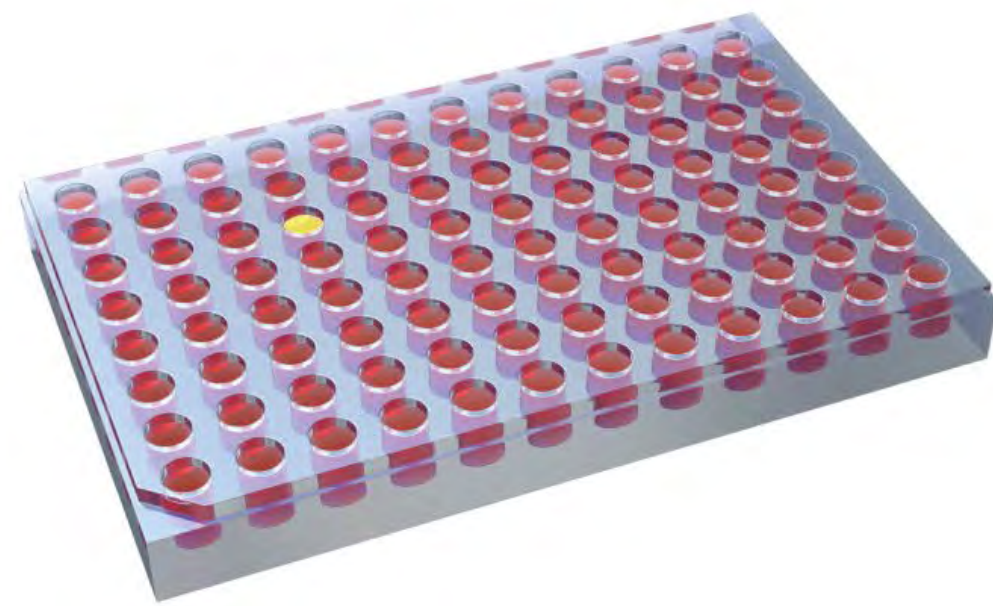


Michael Houghton  
Born: 1949, United Kingdom

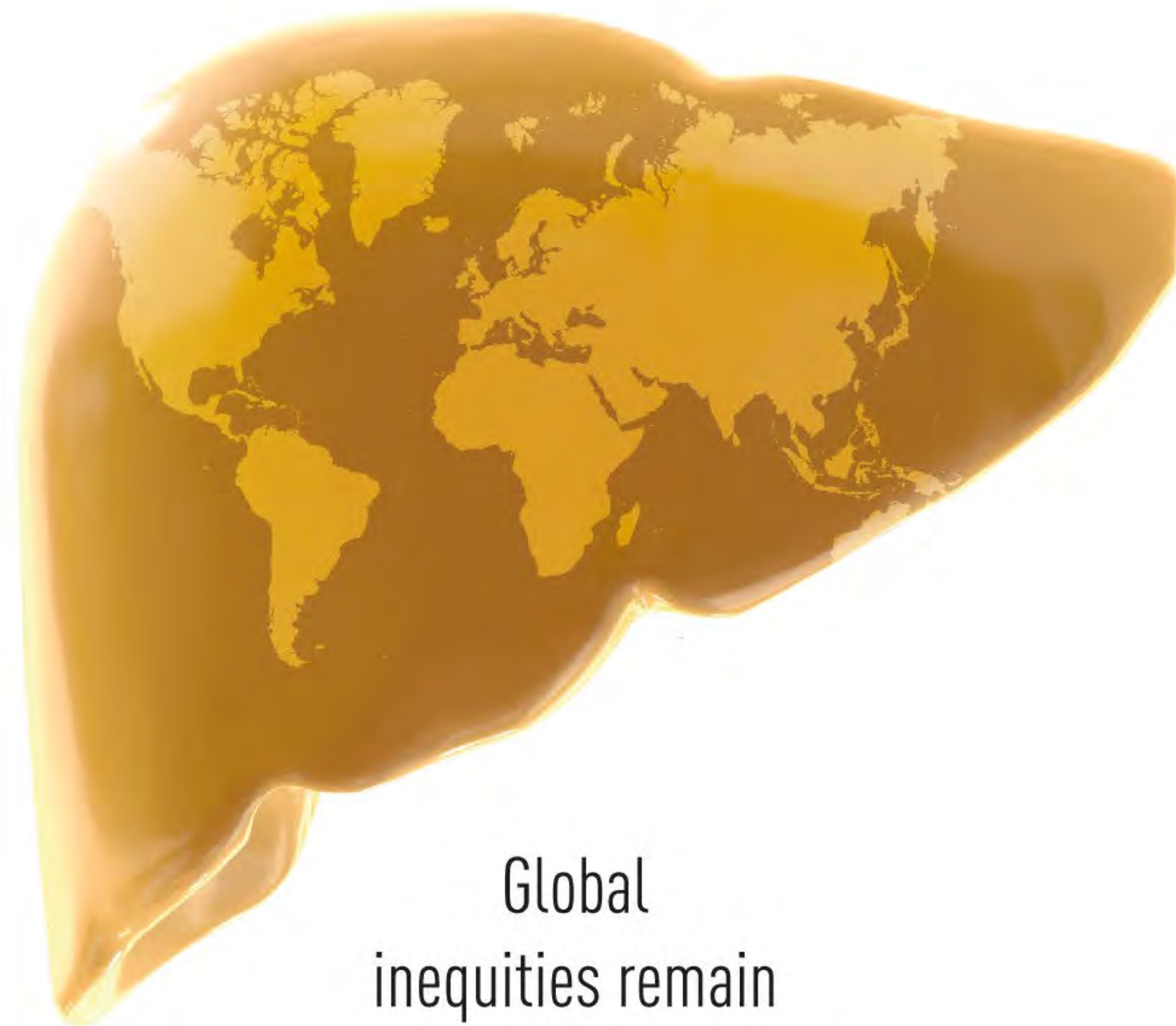


Charles M. Rice  
Born: 1952, USA

# For the greatest benefit to humankind



Sensitive  
Hepatitis C virus tests



Global  
inequities remain



Effective  
anti-viral drugs

## 2020 Literature Laureate



Louise Glück  
Born: 1943, USA

"for her unmistakable poetic voice that with austere beauty makes individual existence universal"

## From the poem "Snowdrops"

I did not expect to survive,  
earth suppressing me. I didn't expect  
to waken again, to feel  
in damp earth my body  
able to respond again, remembering  
after so long how to open again  
in the cold light  
of earliest spring –

By Louise Glück

From "*The Wild Iris*"

Copyright © 1992 by Louise Glück, Published by The Ecco Press and Penguin Books Canada Ltd.

## Straightforward and deep at the same time



Louise Glück engages with timeless topics such as isolation, relationships and the confrontation with death.



## 2020 Peace Laureate



World Food Programme (WFP)  
Founded in 1961.

“for its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict”

# Supports 100 million people in more than 80 countries

WFP is the the world's largest humanitarian organisation working to eliminate hunger.



# Link to peace?

Efforts to fight hunger can also contribute to peace and security.



PHOTO: JESSICA LAWSON, AL-BARA MANSOUR

## 2020 Economic Sciences Prize

The prize is awarded for research that has contributed new ways to use auctions that benefit sellers, buyers and taxpayers around the world.



## 2020 Economic Sciences Laureates

“for improvements to auction theory and inventions of new auction formats”



Paul R. Milgrom  
Born: 1948, USA



Robert B. Wilson  
Born: 1937, USA

# Better auctions in practice

The laureates have not only devoted themselves to auction theory; they have also invented new auction formats.



# Awarding the Nobel Prize



On 10 December each year, the Nobel Prize is presented.

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