

THE
NOBEL
PRIZE

MEDICINE PRIZE 2018

Nobel Prize Lessons

The Nobel Prize in Physiology or Medicine Since 1901

“...the person who shall have made the most important discovery within the domain of physiology or medicine.”



Who is rewarded with the medicine prize?

People who have either made a discovery about how organisms work or have helped find a cure for a disease.



Photo: Geir Mo/NTNU

Medicine Prize 2018

Treatment of cancer by releasing the brakes in our immune system.

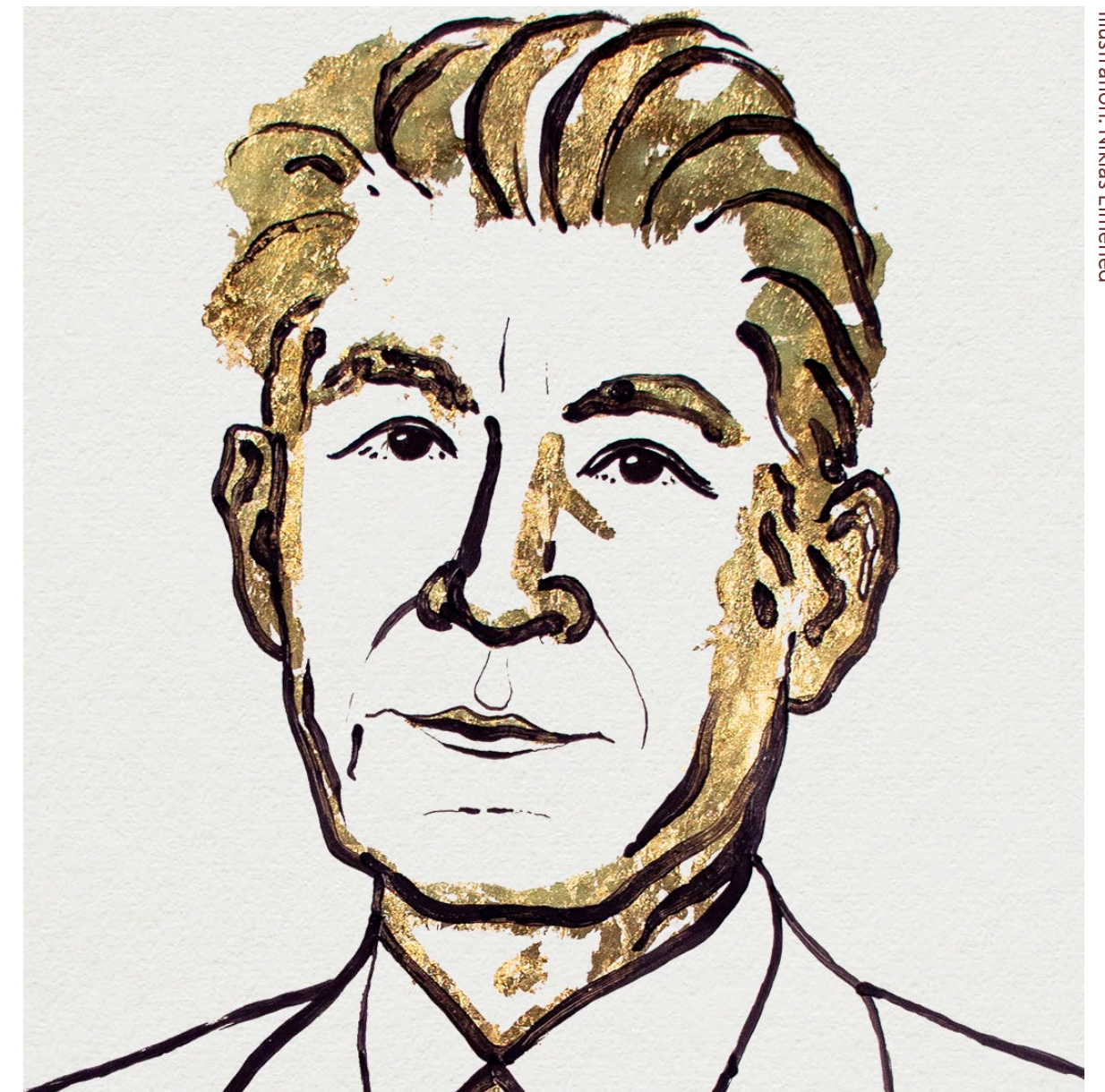


The Nobel Laureates

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



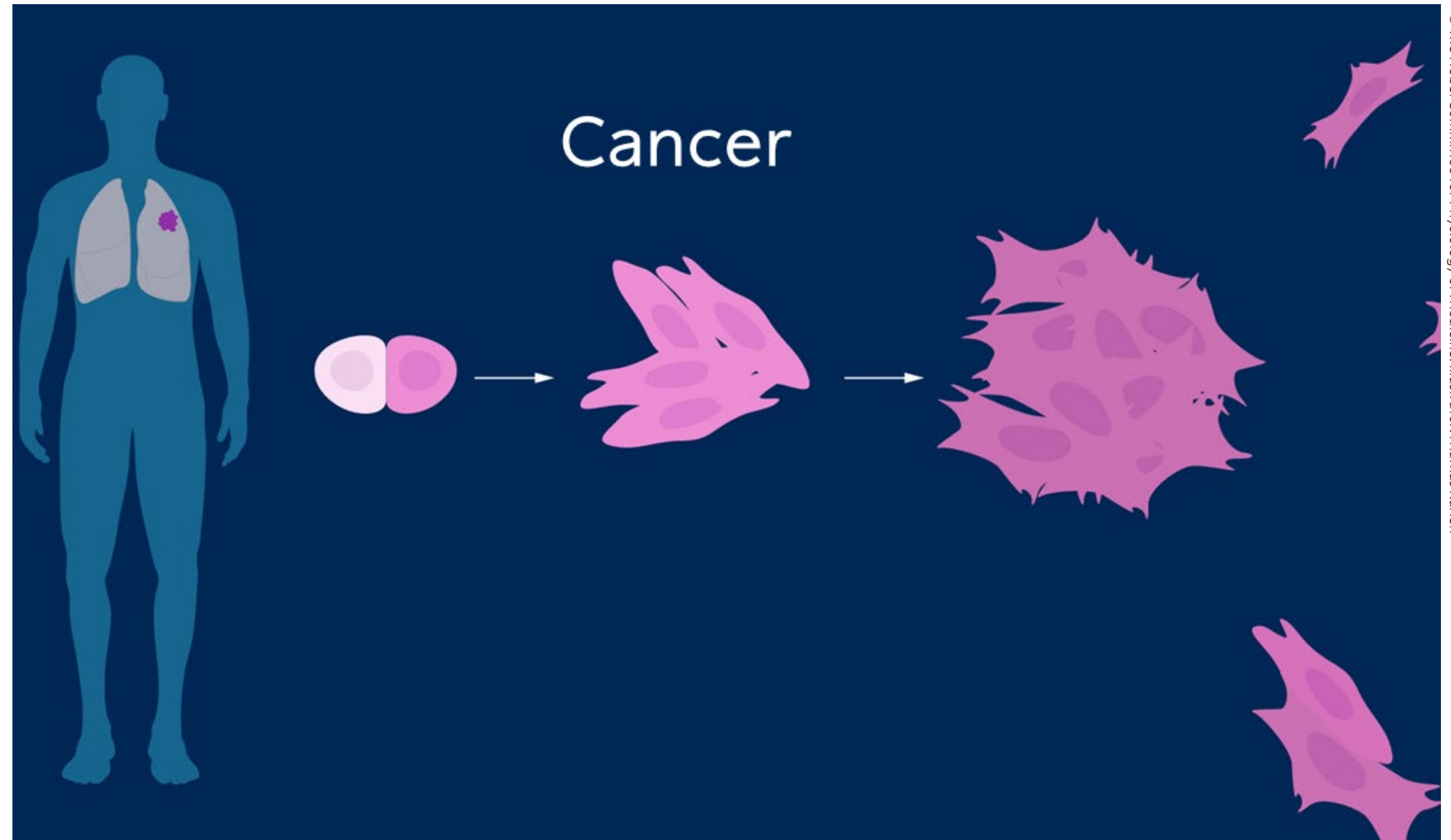
James P. Allison



Tasuku Honjo

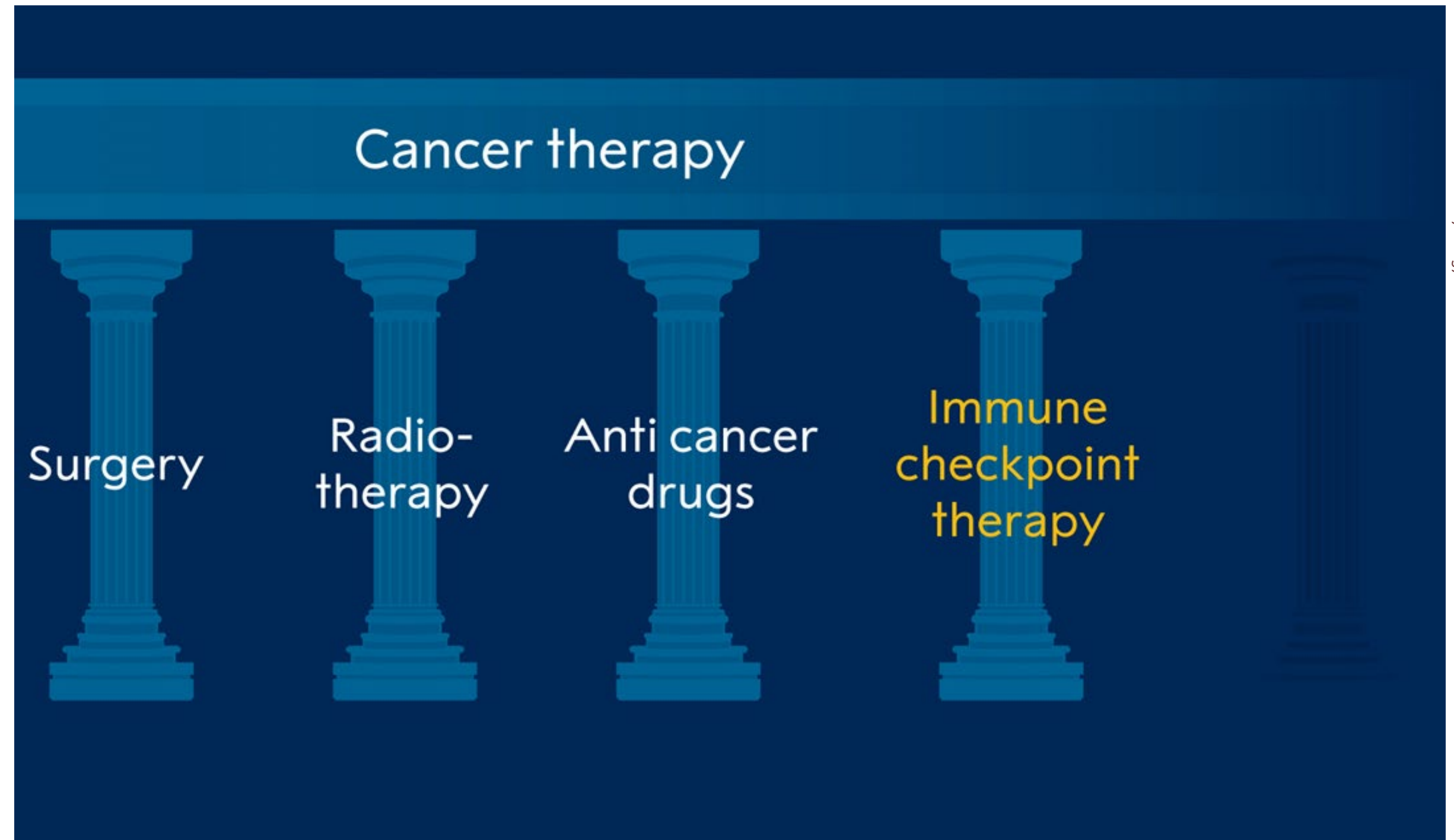
Cancer

Cancer cells divide uncontrollably and form tumours.



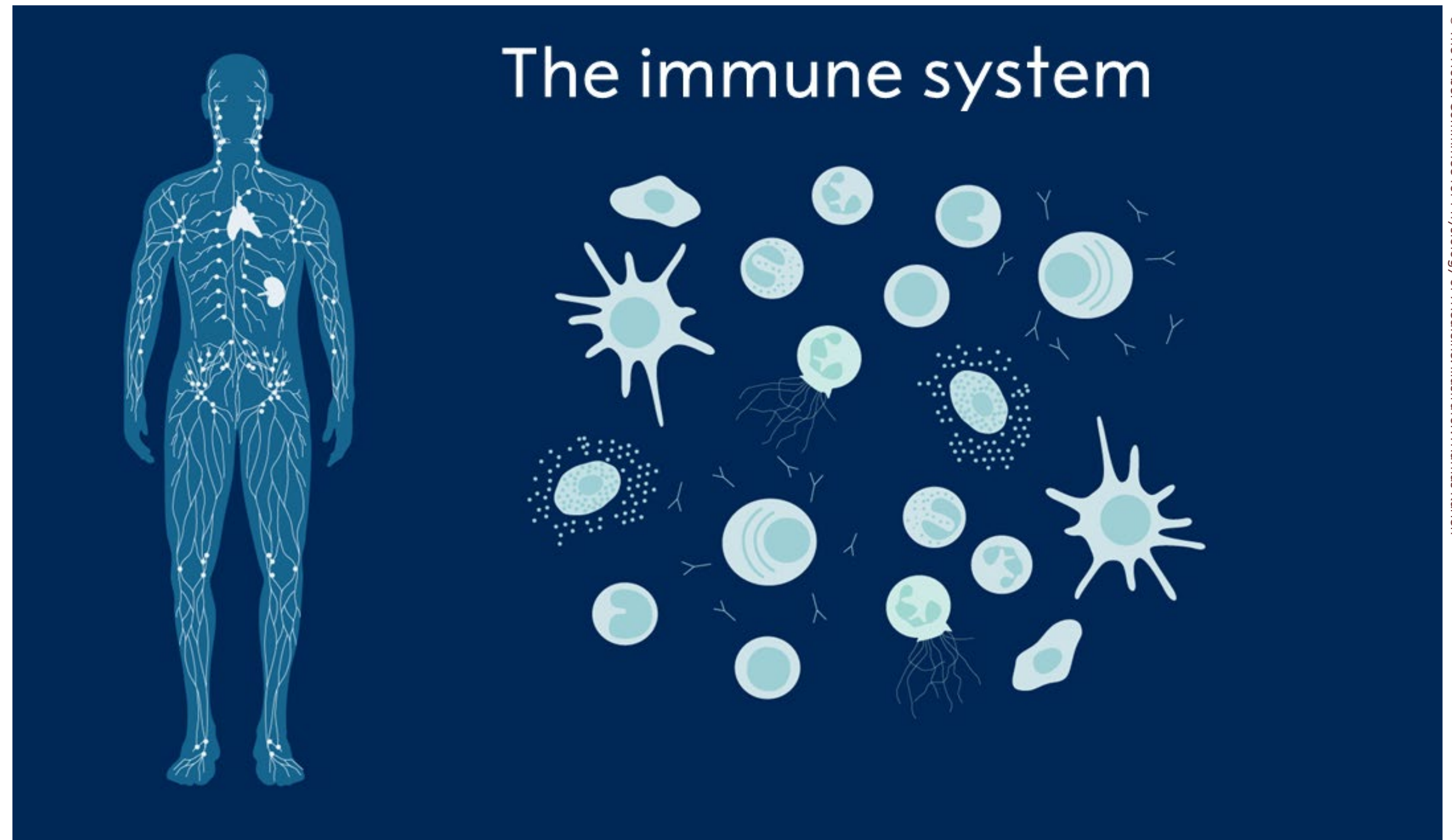
Methods of cancer therapy

This year's Laureates discovered and developed a new method for curing cancer.



The immune system

The immune system protects us against infections. It consists of various kinds of cells and molecules, including so-called T cells. One fundamental property of the immune system is that it can tell the difference between the body's own cells and foreign cells, so that viruses and bacteria can be identified and destroyed, for example.



James P. Allison's discovery

In 1994 the first experiments were made using antibodies on mice with cancer, and they were cured.

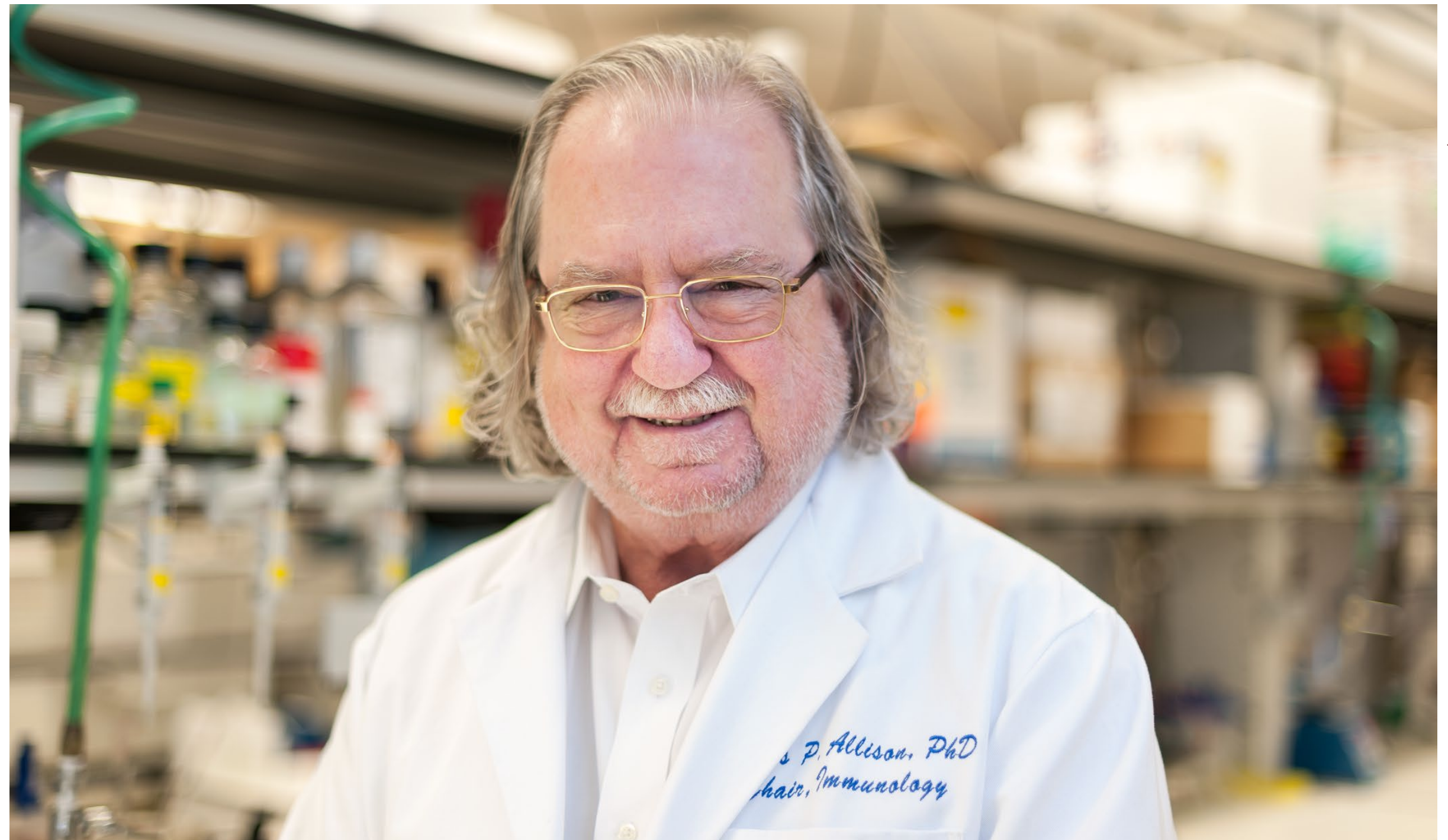


Photo: The University of Texas MD Anderson Cancer Center.

Tasuku Honjo's discovery

In 2012, a clinical study showed very good results in treatment of several different types of cancer.



Photo: The University of Texas MD Anderson Cancer Center.

The benefit

More cases of cancer can be cured.

Immune checkpoint therapy

Before Treatment 2 Months 4 Months

Topalian S. L. *et al.*, N Eng J Med, 2012

The diagram illustrates the mechanism and clinical benefit of immune checkpoint therapy. At the top, a human silhouette shows a purple tumor in the lung. A syringe is shown injecting a green liquid, with a callout box containing green Y-shaped antibody structures. Below this, three axial CT scans of the chest are shown, labeled 'Before Treatment', '2 Months', and '4 Months'. Red arrowheads in each scan point to a specific lung lesion. The size of this lesion decreases significantly from the first scan to the second, and continues to decrease by the fourth month, demonstrating a clear clinical response to the treatment.

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FOR THE GREATEST BENEFIT TO HUMANKIND

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