

## Breakthrough Prize, 2025

**Prelims** - Current events of national and international importance | General Science.

### Why in News?

Breakthrough Prize Foundation recently announced the winners for Breakthrough Prize, 2025.

- It is an **international award** recognizing outstanding achievements in *life sciences, fundamental physics, and mathematics*.
- It is also known as '*Oscars of Science*'.
- **Established in** - 2013.
- **Established by** - Mark Zuckerberg and his wife Priscilla Chan, Sergey Brin, Anne Wojcicki, and Yuri and Julia Milner.
- **Reward** - \$3 million each in all categories.

### Breakthrough Prize in Life Sciences

<b>For Weight-loss drugs</b>	<ul style="list-style-type: none"> <li>• <b>Drugs</b> - <i>Ozempic and Wegovy</i>.</li> <li>• <b>Awarded to</b> - Daniel J. Drucker, Joel Habener, Jens Juul Holst, Lotte Bjerre Knudsen and Svetlana Mojssov.</li> <li>• Scientists discovered and characterised the <b>GLP-1 hormone</b>, which aided the creation of drugs treating diabetes and obesity.</li> </ul>
<b>Multiple Sclerosis treatment</b>	<ul style="list-style-type: none"> <li>• Multiple Sclerosis is an unpredictable chronic disease caused by the immune system attacking the protective sheath that covers nerve fibres of the central nervous system.</li> <li>• <b>Awarded to</b> - Alberto Ascherio and Stephen L. Hauser.</li> <li>• They identified the role of the <b>B-cells</b> of the immune system in Multiple Sclerosis (MS) and devised treatments targeted at the same.</li> <li>• The duo also established the <b>Epstein-Barr virus infection</b> as the leading cause of MS.</li> </ul>
<b>Gene-editing technologies</b>	<ul style="list-style-type: none"> <li>• <b>Awarded to</b> - David R Liu</li> <li>• Developing the base editing and prime editing technologies widely used to edit the DNA of living organisms.</li> <li>• They can edit the DNA without cutting its <b>double helix</b>, and rewrite entire stretches of defective DNA with a corrected version.</li> </ul>

### Breakthrough Prize in Mathematics

- **Awarded to** - Dennis Gaitsgory
- **Achievement** - Role in the proof of the geometric Langlands conjecture.

*Langlands program is described as a broad research program spanning several fields of mathematics, which grew out of a series of conjectures proposing precise connections between seemingly disparate mathematical concepts.*

### **Breakthrough Prize in Fundamental Physics**

- **Awarded to** - 4 collaborations at the Large Hadron Collider (LHC) in European Organization for Nuclear Research (CERN) - ALICE, ATLAS, CMS and LHCb.
- The collaborations studied the *Higgs boson* to understand how they impart mass to fundamental particles.
- They also discovered ***new types of particles*** to understand the strong nuclear force, and tested fundamental theories by discovering new processes to understand why matter exists in the universe.

### **Reference**

1. [The Indian Express | Breakthrough Prize 2025](#)
2. [Business Standard | Breakthrough Prize](#)

