

# DAILY PT POINTERS

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The Hindu-Governance(GSII)-Page 10

## PM-Vidyalaxmi scheme for higher education gets nod

**The Hindu Bureau**  
NEW DELHI

The Union Cabinet chaired by Prime Minister Narendra Modi on Wednesday approved a new Central Sector scheme, PM Vidyalaxmi, which seeks to provide financial support to meritorious students in their pursuit of higher education.

Under the scheme, a student who secures admission in any of the top 860 Quality Higher Education Institutions (QHEIs), both government and private, will be eligible to get collateral-free, guarantor-

free loan from banks and financial institutions to cover full amount of tuition fees and other expenses related to the course. The scheme will potentially cover 22 lakh students, a Ministry of Education spokesperson said.

Under the scheme, for loans up to ₹7.5 lakh, the student will receive a credit guarantee of 75%, enabling banks to extend education loans to students.

“An outlay of ₹3,600 crore has been made during 2024-25 to 2030-31, and 7 lakh fresh students are expected to get the benefit,” the Ministry added.

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## The Hindu-Science and Tech(GSIII)-Page 20

### RNA editing is promising to go where DNA editing can't

DNA editing makes permanent changes to a person's genome, and the associated increased risk of errors. On the other hand, RNA editing makes temporary changes, allowing the effects to fade. In a clinical trial, it's been used to correct a rare genetic mutation and mitigate long-term risk.

#### THE HINDU SCIENCE & TECH

On October 30, a biotechnology company in Massachusetts in the U.S. named Wave Life Sciences has announced that it has developed a gene therapy to treat a genetic condition by editing RNA at the cellular level. But for all that this is a breakthrough, scientists had anticipated it.

The role of RNA in a fraction of our body's instructions — where most DNA instructions keep a gene from being expressed — has been central for the success of CRISPR gene editing. The rapid development of mRNA vaccines during the COVID-19 pandemic is a testament to the role of RNA in cell-to-cell communication, beyond gene expression and regulation. Now, at the start of a new era in precision medicine, RNA editing has made a grade to be at the forefront.

#### What is RNA editing?

Cells synthesize messenger RNA (mRNA) using instructions in DNA and then “read” instructions from the mRNA to make functional proteins. During this process of transcription, the cell may make mistakes in the mRNA's sequence and, based on them produce faulty proteins. Many of these proteins have been known to cause debilitating disorders. RNA editing allows scientists to fix mistakes in the mRNA after the cell has synthesised it but before the cell reads it to make the proteins.

One technique involves a group of enzymes called adenosine deaminase acting on RNA (ADAR). ADAR works by converting some of the adenosine blocks in mRNA to another nucleotide called inosine. This is useful because inosine mimics the function of a uracil in mRNA but is not a coded nucleotide. Genetic geneticists have found that faulty adenosine is required for the cell to make a protein and proceed to connect it. In the process of making the mRNA, a mistake is made. And then the cell makes incorrect proteins.

In certain cases, a group of ADARs edit the mRNA to make it more functional. In the genetic code, the genetic code is a specific part of the mRNA, where the ADAR works to change. They copy a set of instructions to make a protein for a specific task in the cell.

#### RNA editing in development

Wave Life Sciences used RNA editing to treat a genetic condition called APOE4, an inherited disorder. In patients suffering from APOE4, levels of the protein are low, which leads to a higher risk of Alzheimer's disease. People with APOE4 affecting the brain severely get the most benefit from treatment. Wave Life Sciences' gene therapy uses ADAR to affect the gene, a gene that produces the protein.

In a study, published in 2020, the company used a gene to level ADAR enzymes to specific levels in patients with APOE4 in the brain. The results in the mRNA sequence of the



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a biotechnology company in Massachusetts in the U.S. named Wave Life Sciences made headlines for becoming the first company to treat a genetic condition by editing RNA at the clinical level. But for all that this is a breakthrough, scientists had anticipated it.

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### Anil Pradhan wins Rohini Nayyar Prize

EXPRESS NEWS SERVICE  
NEW DELHI, NOVEMBER 6



He got the award for his work in rural development

ANIL PRADHAN, co-founder of Young Tinker Foundation, a non-profit organisation working on hands-on STEM (science, technology, engineering, and mathematics) education in under-served areas, was awarded the third Rohini Nayyar Prize for Outstanding Contribution to Rural Development on Wednesday.

Pradhan, 28, an engineer and educationist, who is from Baral village in Odisha, works with students on STEM education and innovation. 'Tinker spaces' learning labs, where students innovate and create using tools and material available in the lab, are central to his work.

With the aim of taking these labs to students in rural areas who may not be able to reach them, 'Tinker-on-Wheels', a mobile learning lab meant to offer hands-on experience with aspects like robotics and 3D printing, has been set up.

While Pradhan initially began working in his village, his organisation now works in Telangana, Odisha and Tamil Nadu. "Even now we read... 'once there lived

which means that if you are poor, you are a farmer, and if you are a poor farmer then you are in a village. This sort of mindset needs to change," Pradhan said at an event where he was presented with the award by R.A Mashelkar, scientist and former Director General, CSIR.

The prize has been instituted in the memory of Rohini Nayyar by her family. Nayyar, an economist, served as an IAS officer in the Uttar Pradesh cadre, and worked with the erstwhile Planning Commission of India from 1987 to 2005. She passed away in 2021.

The prize, comprising a cash award of Rs. 10 lakh, a citation and trophy, is given annually by the Nayyar Foundation for Social and Economic Purpose, and is meant for individuals below 40 years in age.

Mashelkar said: "If one looks at her (Rohini Nayyar's) life's work in rural development and poverty alleviation, it shows not just a new way of looking at poverty, but a fundamentally dif-

- The 3rd Rohini Nayyar Prize was awarded to Anil Pradhan, a 28-year-old from Odisha, for his contribution to STEM education in rural India. Pradhan's work focuses on using technology and innovation to bring quality science, technology, engineering, and mathematics education to rural communities, an area where resources and infrastructure are often limited.
- The Rohini Nayyar Prize, established in memory of the late economist and administrator Rohini Nayyar, is awarded annually to individuals who have made outstanding contributions to rural development in India.
- The prize recognizes achievements in civil society, government, enterprise, or academia and awards a citation and ₹10 lakh to the winner.

# HEADLINES OF THE DAY

## PIB – Defense(GSIII)



- The 21<sup>st</sup> edition of India – US Military Cooperation Group (MCG) meeting was conducted from 05 to 06 November 2024 at the Manekshaw Centre, New Delhi. The meeting covered a wide range of topics, including capacity building, training exchanges, defence industrial cooperation and the advancement of joint exercises that bolster preparedness for conventional and hybrid threats.
- Both sides emphasised the importance of the Indo-US defence partnership and committed to strengthening this strategic relationship through proactive engagement and enhanced interoperability. They also reaffirmed their commitment to expanding the scope of Indo-US military cooperation with a shared understanding of the dynamic challenges facing the Indo-Pacific region.

# HEADLINES OF THE DAY

**Air: Economy(GSII)**

**Agrivoltaic Farming Focuses On Simultaneous Use Of Land For Agriculture & Solar Energy**



- The Seventh Session of the International Solar Alliance (ISA) culminated today in New Delhi. A visit to a farm site at Najafgarh was organized on the concluding day
- Agrivoltaic farming primarily focuses on the simultaneous use of land for both agriculture and solar energy generation.

# HEADLINES OF THE DAY

**Air: IR(GSII)**

Over 65 Million People Food Insecure In Horn Of Africa: UN And IGAD Report



- At least 65 million people are food insecure in the Horn of Africa. It was revealed by a joint report released today by the UN and the Intergovernmental Authority on Development, IGAD, an East African bloc.
- This figure marks a slight decline from 66 million in August, attributed to improved rainfall over the past two seasons, particularly in the IGAD region.
- According to reports, of the 65 million affected people, 36 million reside in IGAD member states, including Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda