

September Science News Recap

ICFO's summary of news highlights of the scientific discoveries and stories from the month of September 2026

October 01, 2026

September was packed with different scientific discoveries, results and findings that have sparked different stories to share. We've gathered the most important updates to keep you in the know. Whether you missed a few of them or just want a quick recap, our summary of September's top scientific news has you covered. Dive in and catch up on everything that happened this month.

News 1

The Golgi feels and responds to mechanical forces from outside the cell

Cells are not fixed objects; they are constantly spreading, stretching, and physically adapting to external conditions. The surface and the nucleus have been largely believed to be the main structures responsible for sensing and responding to these mechanical cues, but researchers at ICFO and CNRS have now broadened this picture.

The team has shown that the Golgi apparatus, an internal organelle, can also actively sense

and respond to mechanical forces, and that its own activity, in turn, can affect how the cell physically behaves. The results are published in the Journal of Cell Biology.
Date: September 8, 2026
Topic: Biophysics.
ICFO Researchers: Dr. Javier Vera Lillo, Dr. Eugenia Almacellas, Dr. Nicolas Mateos, Dr. Jessica Angulo Capel, Adam Wolowczyk, ICREA Prof. Maria F. Garcia Parajo, and Prof. Dr. Felix Campelo.
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News 2:
An efficient path to secure quantum keys
Renyi entropies, which are central to modern quantum key distribution security proofs, have traditionally been computationally difficult to optimize. Researchers at ICFO and Luxquanta have now presented, in a PRX Quantum article, a method to calculate them efficiently and reliably, yielding more stable security proofs.
Date: September 14, 2026
Topic: Quantum technologies.
ICFO Researchers: Mariana Navarro and Dr. Carlos Pascual.
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News 3:
Entanglement might enhance quantum battery power, but at a cost
An international team of researchers has shown that the power boost quantum batteries gain from entanglement can come at the cost of reliability. In particular, they have discovered that a quantum battery cannot make both its work output and its power arbitrarily reliable at the same time. The study, published in PRX Quantum, suggests that future quantum batteries may need to simultaneously optimize speed, power and stability.
Date: September 16, 2026
Topic: Quantum technologies
ICFO researchers: Prof. at ICFO Maciej Lewenstein.
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News 4:
A spin rephased quantum memory for single photons
A key element in enabling the quantum internet is the quantum repeater, an architecture aimed at distributing entanglement over long distances. Quantum repeaters, in turn, require quantum memories that can hold a quantum state for a long period of time, long enough to synchronize measurements across different network segments and successfully establish entanglement.

Now, ICFO researchers have applied a so-called spin rephasing mechanism to store quantum light in a solid-state quantum memory, demonstrating that quantum correlations were present. The work, published in Physical Review Letters, achieves the longest storage time to date for single photons in this kind of memory, marking a significant enabling step towards the quantum internet.

Date: September 23, 2026

Topic: Quantum technologies.

ICFO researchers: Alberto Rodriguez Moldes, Dr. Felicien Appas, Jonathan Hanni, Dr. Jelena Rakonjac, and Dr. Samuele Grandi, led by ICREA Prof. Hugues de Riedmatten.

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