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29 Sep - 3 Oct 2025

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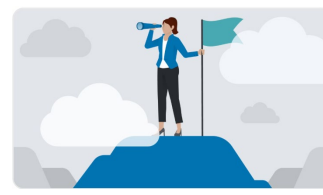

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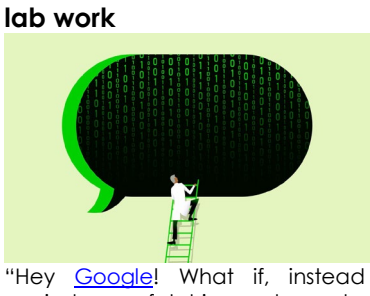
AI SCIENTIST

Google's AI Co-Scientist Scores Two Wins in Biology: Language model delivers predictions that rival years of lab work



"Hey Google! What if, instead of setting reminders or fetching restaurant reviews, you helped crack the mysteries of biology?

That playful question hints at a radical vision now being tested in labs. AI systems are being recast not as digital secretaries but as scientific partners—copilots built to dream up bold, testable ideas.

The pitch sounds revolutionary. But it also makes many scientists bristle. How much true novelty can a machine conjure? Isn't it more likely to remix the past than to uncover something genuinely new?

For months, the controversy over "AI scientists" has simmered: hype versus hope, parroting versus discovery. But two new studies offer some of the strongest evidence to date that large language models (LLMs) can generate truly novel scientific ideas, leaping to nonobvious insights that might otherwise require many years of painstaking lab work. Both studies showcase Google's AI-powered scientific-research assistant, known as the AI co-scientist.

"These early examples are unbelievable—it's so compelling," says Dillan Prasad, a neurosurgery researcher at Northwestern University and an outside observer who has written about the potential for AI co-scientists to supercharge hypothesis generation. "You have AI agents that are producing scientific discovery! It's absolutely exciting."

Source: IEEE Spectrum (25 Sep 2025)

ARCHITECTURE

Safe by Design: How Architects and Forensics Rethink Security across Scales

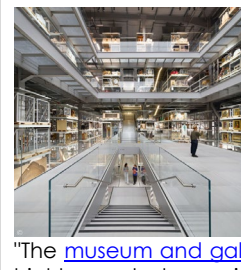
""The public square and civic infrastructure are the front lines against this kind of attack", proclaimed then-President of the American Institute of Architects, Thomas Vonier. The decades since 9/11 and mass violence have pressured cities, in the United States and globally, to reconsider what "safety" means. Is it about barriers, bollards, surveillance? Or is it about trust, visibility, evidence, resilience? Several projects confront these questions at various scales to demonstrate how architecture and forensic thinking can collectively protect communities and civic life.

Southeast London's Erith Park, was a high-rise concrete tower, faltering social infrastructure, gangs, and drug trade. In 2013 a regeneration plan was launched where tower blocks were demolished and replaced by low and medium-rise homes. Traditional street layouts were established and the design for mixed-tenure housing was guided by Secured by Design (SBD). The effort was carefully sown to meet an evident result - crime was approximately 80% less than in the rest of its ward. Within the estate boundary there were zero recorded burglaries, weapons offences, drugs-related crime, robberies or personal thefts."

Source: Archdaily (29 Sep 2025)

CURATED EXPERIENCE

Behind the Scenes, On Display: Self-Curated Journeys through the Museum Archive



"The museum and gallery visit has long been a highly curated experience. Visitors are guided through a carefully orchestrated sequence of rooms, with hand-picked works arranged to tell a specific narrative, supported by signage, graphics, scenography, and calibrated lighting. Even the rarely changed exhibitions - the permanent collections, also typically rely on a strong curatorial voice— led by noted artists or curators—to set institutional stance and shape interpretation.

At the same time, storage areas for museums and galleries are typically kept separately—often within the same building but under tightly controlled access, and not infrequently off-site in dedicated facilities, such as the Louvre Conservation Centre. These zones have long been understood as highly controlled spaces not only in terms of access, but also in relation to climate, humidity, archival order, handling protocols, maintenance, and repair. For fear of thefts and that the spatial, environmental, and sequencing requirements of the archive could be disturbed, storage has traditionally been somewhat secretive and primarily serves academic researchers and art practitioners by request. Rarely does the general public gain a comprehensive picture of the works safeguarded by any given institution."

Source: Archdaily (29 Sep 2025)

DESIGN

Five highlights from the Designing Motherhood: Things That Make and Break Our Births exhibition

"A medical device to support a newborn's body during resuscitation and a pregnancy test feature in this roundup of the curators' favourite pieces from the Designing Motherhood exhibition.

Opening on 4 October at New York's Museum of Arts and Design (MAD), the travelling exhibition Designing Motherhood: Things that Make and Break Our Births explores the arc of human reproduction through the lens of design.

The show examines how design has evolved over the last 150 years to support mothers' and children's health and survival, and covers a spectrum of solutions developed to tackle challenges in infertility, pregnancy, postpartum and parenthood.

Over 250 commercial products sit alongside medical devices, speculative design projects and graphic materials to shine a spotlight on the discipline's impact on reproductive health and mental wellbeing.

"Designing Motherhood celebrates the ingenuity and idealism of designers and designs across the spectrum of reproductive health that have improved lives," said Elizabeth Koehn, who curated the exhibition together with Michelle Millar-Fisher.

"At the same time, the exhibition questions the viability of the promised 'better living through design' championed by American manufacturing and sold through the countless products that purport to 'solve' every health challenge related to reproduction, from contraception to birth and lactation to menopause."

Source: Dezeen (29 Sep 2025)

EDUCATION

No lectures, exams, essays: inside a twenty-first-century university

"Eight hundred years ago, a group of scholars walked out of the University of Oxford after a bitter and violent dispute with local townspeople. At a fork in the road, the scholars might have turned left and founded a university in Hereford, a cathedral city 106 kilometres away. Instead, they turned right and established the University of Cambridge, triggering an academic rivalry between the two institutions that endures to this day.

"It's a fun 'what if'," said Jesse Norman of this apocryphal story about a university that might have been.

Norman, the Member of Parliament for Hereford, UK, recounted the tale in May at the inaugural graduation ceremony of the New Model Institute for Technology and Engineering (NMITE), which welcomed its first intake of 27 students to its Hereford campus four years earlier.

The institute is trying something rare in UK higher education. It is building a new kind of university from the ground up — one that promises to address the skills shortage in engineering, rebalance regional access to education and rethink how engineering is taught in a city with one of the lowest university participation rates in England.

"Broadly speaking, the approach to learning at NMITE is directly against the traditional wisdom in the higher-education system," says

IMAGING

An eco-friendly way to see in the dark

"Manufacturers of infrared cameras face a growing problem: the toxic heavy metals in today's infrared detectors are increasingly banned under environmental regulations, forcing companies to choose between performance and compliance.

This regulatory pressure is slowing the broader adoption of infrared detectors across civilian applications, just as demand in fields like autonomous vehicles, medical imaging and national security is accelerating.

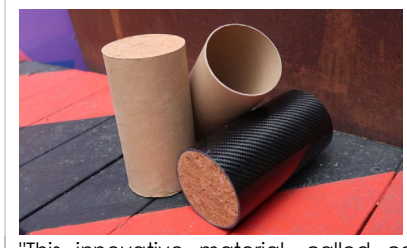
In a paper published in ACS Applied Materials & Interfaces, researchers at NYU Tandon School of Engineering reveal a potential solution that uses environmentally friendly quantum dots to detect infrared light without relying on mercury, lead, or other restricted materials.

The researchers use colloidal quantum dots which upends the age-old, expensive, and tedious processing of infrared detectors. Traditional devices are fabricated through slow, ultra-precise methods that place atoms almost one by one across the pixels of a detector — much like assembling a puzzle piece by piece under a microscope.

Colloidal quantum dots are instead synthesized entirely in solution, more like brewing ink, and can be deposited using scalable coating techniques similar to those used in roll-to-roll manufacturing for packaging or newspapers. This shift from painstaking assembly to solution-

MATERIALS

Cardboard and earth reshape sustainable construction



"This innovative material, called cardboard-confined rammed earth, is composed entirely of cardboard, water and soil – making it reusable and recyclable.

In Australia alone, more than 2.2 million tons of cardboard and paper are sent to landfill each year. Meanwhile, cement and concrete production account for about 8% of annual global emissions.

Cardboard has previously been used in temporary structures and disaster shelters, such as Shigeru Ban's iconic Cardboard Cathedral in Christchurch, New Zealand.

Inspired by such designs, the RMIT University team has, for the first time, combined the durability of rammed earth with the versatility of cardboard."

MEDTECH

Smart device uses AI and bioelectronics to speed up wound healing process

"As a wound heals, it goes through several stages: clotting to stop bleeding, immune system response, scabbing, and scarring.

A wearable device called "a-Heal," designed by engineers at the University of California, Santa Cruz, aims to optimize each stage of the process. The system uses a tiny camera and AI to detect the stage of healing and deliver a treatment in the form of medication or an electric field. The system responds to the unique healing process of the patient, offering personalized treatment.

The portable, wireless device could make wound therapy more accessible to patients in remote areas or with limited mobility. Initial preclinical results, published in the journal npj Biomedical Innovations, show the device successfully speeds up the healing process."

Norman, who campaigned for the university to be set up and became its chair in January. "We don't chase international students. We focus on raising the skills and intellectual achievement of kids in Britain."

NMITE is not, and did not set out to be, a research-intensive institution; instead, it concentrates on undergraduate teaching, industry-led projects and preparing graduates for immediate employment."

Source: Nature (24 Sep 2025)

based processing dramatically reduces manufacturing costs and opens the door to widespread commercial applications."

Source: NYU (22 Sep 2025)

Source: RMIT (22 Sep 2025)

Source: UCSC(23 Sep 2025)

MEDITATION

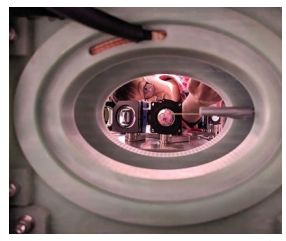
The meditation app revolution

"Smartphone-based meditation training has jumped onto the world stage, shifting how millions of people learn and practice meditation. This review examines the rapid proliferation of meditation apps and synthesizes current scientific findings on their usage patterns, efficacy, mechanisms of action, and safety. Though research lags well behind public adoption, recent randomized controlled trials and meta-analyses reveal that app-based meditation interventions produce modest but consistent reductions in depression and anxiety. Initial mechanistic studies further suggest that improvements in worry, repetitive negative thinking, and self-reported mindfulness skills may underpin these effects, alongside early findings on blood pressure reduction and pro-inflammatory gene expression. This review describes some of the similarities and differences between meditation apps and traditional, in-person mindfulness programs. Meditation apps often differ in the relative absence of interpersonal support, briefer practice sessions, lower sustained engagement rates, and greater opportunities for personalization and large-scale data capture. We discuss opportunities based on these issues, including hybrid models that combine app-based content with human support, just-in-time interventions, and advanced trial designs that harness app analytics. With thoughtful development and rigorous evaluation, meditation apps have potential to expand the reach of evidence-based meditation training, offering a unique platform for advancing translational research on meditative practices."

Source: PSYCNET (Sep 2025)

QUANTUM COMPUTING

Caltech Team Sets Record with 6,100-Qubit Array



"Quantum computers will need large numbers of qubits to tackle challenging problems in physics, chemistry, and beyond. Unlike classical bits, qubits can exist in two states at once—a phenomenon called superposition. This quirk of quantum physics gives quantum computers the potential to perform certain complex calculations better than their classical counterparts, but it also means the qubits are fragile. To compensate, researchers are building quantum computers with extra, redundant qubits to correct any errors. That is why robust quantum computers will require hundreds of thousands of qubits.

Now, in a step toward this vision, Caltech physicists have created the largest qubit array ever assembled: 6,100 neutral-atom qubits trapped in a grid by lasers. Previous arrays of this kind contained only hundreds of qubits.

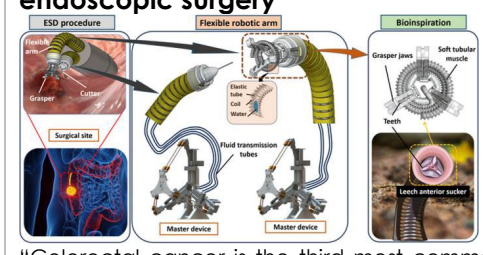
This milestone comes amid a rapidly growing race to scale up quantum computers. There are several approaches in development, including those based on superconducting circuits, trapped ions, and neutral atoms, as used in the new study.

"This is an exciting moment for neutral-atom quantum computing," says Manuel Endres, professor of physics at Caltech. "We can now see a pathway to large error-corrected quantum computers. The building blocks are in place." Endres is the principal investigator of the research published today in Nature. Three Caltech graduate students led the study: Hannah Manetsch, Gyohei Nomura, and Elie Bataille."

Source: CALTECH (24 Sep 2025)

ROBOTICS

Development of a bioinspired soft robotic system for teleoperated endoscopic surgery



"Colorectal cancer is the third most common malignancy worldwide. While conventional laparoscopic resection is already minimally invasive, it still requires an abdominal-wall incision and relies on relatively rigid instruments. Endoscopic submucosal dissection (ESD) performed through natural-orifice transluminal endoscopic surgery (NOTES) can remove early lesions via natural lumens, yet most existing ESD robots are cable- or motor-driven: long actuation paths introduce friction and hysteresis, the hardware is bulky and costly, and accuracy therefore suffers inside the tortuous, narrow intestinal tract. "To overcome these limitations, we propose a fully motor-free, hydraulically actuated master-slave soft-robotic system that combines a steerable, elongating soft arm with a leech-inspired three-finger grasper." said the author Kefan Zhu, a researcher at The University of New South Wales, "Using incompressible fluid for actuation offers low friction, high compliance and strong grasping force, aiming to improve reach, safety and fine manipulation for ESD throughout the colorectum."

Source: Eurekalert! (28 Sep 2025)

WATER

A Deep Look into the Unique Structure and Behavior of Confined Water

"One intriguing yet poorly understood state of confined water is called the 'premelting state.' In this unique phase, water behaves as if it were on the cusp of freezing and melting at the same time, thus defying simple liquid or solid classifications. However, it has proven difficult to study the premelting state and other confined water dynamics in detail. While techniques such as diffraction methods (example: X-ray analysis) are useful for pinpointing the positions of atoms other than hydrogen, they are not sensitive enough to capture the picosecond-scale rotational motion of hydrogen and the motion of individual water molecules.

In a recent study, a research team led by Professor Makoto Tadokoro alongside Lecturer Fumiya Kobayashi and first-year PhD student Mr. Tomoya Namiki, from the Department of Chemistry, Tokyo University of Science, Japan, shed new light on the mysteries of confined water. Their paper, published online in the Journal of the American Chemical Society on August 27, 2025, reports how they used static solid-state deuterium nuclear magnetic resonance (NMR) spectroscopy to observe the hierarchical dynamics of water confined within the hydrophilic nanopores of a molecular crystal and characterized the premelting state, which is a new phase observed in water."

Source: TUS (22 Sep 2025)

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