SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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23 Feb - 27 Feb 2026

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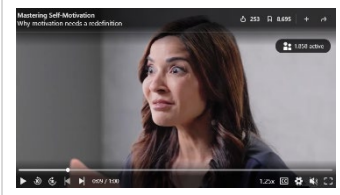

Featured Course
Mastering Self-Motivation: Why motivation needs a redefinition
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3D PRINTING
3D Printing Soft Robots

"Soft robots made out of flexible, biocompatible materials are in high demand in industries from healthcare to manufacturing, but precisely designing and controlling such robots for specific purposes is a perennial challenge. What if you could 3D print a soft robot with predictable shape-morphing capabilities already built in?

Harvard 3D printing experts have shown it's possible. A study in *Advanced Materials* describes a new fabrication method for printing robotic devices that feature long filaments with precisely placed hollow channels. When filled with air, the channels allow the device to bend and deform in predetermined ways.

The advance was led by graduate student Jackson Wilt and former postdoctoral researcher Natalie Larson in the lab of Jennifer Lewis, the Hansjorg Wyss Professor of Biologically Inspired Engineering in the John A. Paulson School of Engineering and Applied Sciences (SEAS). The method combines several Harvard-developed 3D printing techniques and circumvents traditional casts and molds that are typically used to make soft robots."

Source: Eurekalert! (19 Feb 2026)

AI
AI Is Threatening Science Jobs. Which Ones Are Most at Risk?

"Artificial intelligence is threatening many jobs, and those in science seem unlikely to be exempt. So which jobs are most at risk?

Seeking answers, *Nature* spoke to more than four dozen researchers across academia and industry who use AI in their work. Many of them say that AI's ascendance is already reducing demand for human researchers who can write code or do basic data analysis – tasks often handled by graduate students, postdocs or those without graduate training.

Obsolescence of some basic roles in areas such as computer modelling "is not even in the future. It's happening now," says Xuanhe Zhao, a mechanical engineer at the Massachusetts Institute of Technology in Cambridge, because "AI is doing this much better than entry-level scientists". Workers in some science-adjacent jobs, such as translating papers from one language to another, are also seeing their careers slip away."

Source: Nature (20 Feb 2026)

AI & EV
AI Breakthrough Could Replace Rare Earth Magnets in Electric Vehicles

"Scientists at the University of New Hampshire are using artificial intelligence to speed up the search for advanced magnetic materials. Their work has produced a searchable resource containing 67,573 magnetic compounds, including 25 materials that had not previously been recognized as magnets capable of staying magnetic at high temperatures.

"By accelerating the discovery of sustainable magnetic materials, we can reduce dependence on rare earth elements, lower the cost of electric vehicles and renewable-energy systems, and strengthen the U.S. manufacturing base," said Suman Itani, lead author and a doctoral student in physics."

Source: Uni of New Hampshire (19 Feb 2026)

ARCHITECTURE
Heritage Without Permanence: When Architecture Endures by Disappearing

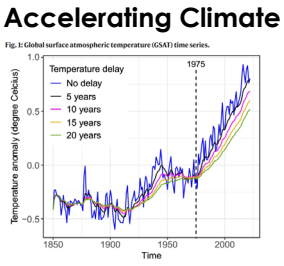
"A Gothic cathedral can take centuries to complete. A world exposition pavilion may stand for six months. A ritual structure in Kolkata rises and vanishes within five days. Yet each draws pilgrimage, shapes collective memory, and reorganizes urban life. If heritage has long been defined by what endures, architecture repeatedly shows that cultural authority can also belong to what gathers people.

For much of the twentieth century, conservation frameworks privileged permanence. The Venice Charter, adopted by the International Council on Monuments and Sites, focused on safeguarding monuments and their material authenticity. Cultural value was tied to physical fabric such as stone, brick, and timber. To protect heritage was to preserve what stood. The logic felt stable, even self-evident.

That framework widened in 2003, when the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage recognized that traditions, skills, and rituals are forms of heritage in their own right. Instead of conserving walls alone, institutions were asked to safeguard the transmission of how knowledge moves across generations. The shift did not abandon monuments, but it made space for another possibility: architecture might matter because of what it hosts, not only because of how long it survives."

Source: Archdaily (20 Feb 2026)

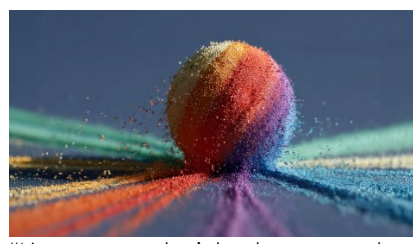
CLIMATE CHANGE
Widespread Slowdown in Short-Term Species Turnover Despite Accelerating Climate Change



"When the species composition of ecological communities changes over time, environmental drivers are often invoked as the most plausible explanation. Several lines of reasoning, however, suggest that such compositional change, called temporal species turnover, can similarly result from intrinsic ecosystem dynamics, even in a constant environment. The degree to which these two drivers contribute to observed turnover remains unclear. To address this conundrum, we analyse the well-established BioTIME database of surveys. We expect either an acceleration of turnover with accelerating climate change or constant turnover if intrinsic mechanisms dominate. Surprisingly we find instead that species turnover over short time intervals (1-5 years) has decelerated in significantly more communities during the last 100 years than it has accelerated, typically by one third. The observed slowing of turnover, we argue, could be understood—when intrinsic dynamics dominate—as resulting because anthropogenic environmental degradation or declines of regional species pools reduce the number of potential colonisers driving turnover. Our results suggest that observed past changes in species composition were often manifestations of natural, intrinsic ecosystem dynamics. Although one can expect environmental drivers to dominate species turnover eventually as climate change accelerates further, for now such attribution should be done with caution."

Source: Nature (3 Feb 2026)

COLOR THEORY
Schrödinger's Color Theory Finally Completed After 100 Years



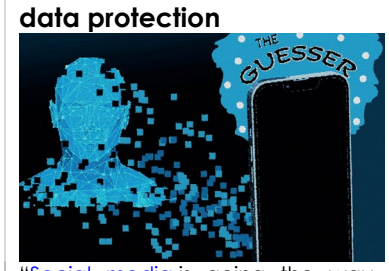
"New research into how people perceive differences between colors is reshaping a theory first proposed nearly 100 years ago by physicist Erwin Schrödinger. Roxana Bujack, a scientist at Los Alamos National Laboratory, led a team that applied geometry to precisely describe how we experience hue, saturation and lightness. Their findings, presented at a major visualization science conference, solidify Schrödinger's framework by showing that these core color qualities arise from the internal structure of the color system itself.

"What we conclude is that these color qualities don't emerge from additional external constructs such as cultural or learned experiences but reflect the intrinsic properties of the color metric itself," Bujack said. "This metric geometrically encodes the perceived color distance -- that is, how different two colors appear to an observer."

By firmly defining these perceptual features, the researchers supply a crucial missing component that helps fulfill Schrödinger's original goal of creating a self-contained model. In that vision, hue, saturation and lightness would be determined entirely by geometry and the principle of greatest color similarity."

Source: Los Alamos National Laboratory (23 Feb 2026)

DATA PRIVACY
The Age-Verification Trap Verifying user's ages undermines everyone's data protection



"Social media is going the way of alcohol, gambling, and other social sins: Societies are deciding it's no longer kid stuff. Lawmakers point to compulsive use, exposure to harmful content, and mounting concerns about adolescent mental health. So, many propose to set a minimum age, usually 13 or 16.

In cases when regulators demand real enforcement rather than symbolic rules, platforms run into a basic technical problem. The only way to prove that someone is old enough to use a site is to collect personal data about who they are. And the only way to prove that you checked is to keep the data indefinitely. Age-restriction laws push platforms toward intrusive verification systems that often directly conflict with modern data-privacy law.

This is the age-verification trap. Strong enforcement of age rules undermines data privacy."

Source: IEEE Spectrum (23 Feb 2026)

DESIGN
"Big Tech Is Using Design Philosophy as a Smokescreen"

"As a tech and design writer, I saw dozens of these products hit my inbox in 2025, each making either implicit or explicit reference to a design philosophy known as calm technology. A response to information overload coined in the early days of the internet, this approach foregrounds products that are informative but quiet; ignorable and unobtrusive but life-enhancing.

Some of the gadgets above fit this description. Some are interesting provocations. And others are manifestations of a worrying trend: that big tech companies are using the language of calm technology to keep us locked into their systems – systems that are built on the monetisation of our attention and the exploitation of our personal data, and that have put so much power into the hands of a few private companies that it cannot be observed with any feeling remotely resembling "calm".

OpenAI's Sam Altman and his collaborator Jony Ive are two of the big names in tech to speak publicly in 2025 about their intent to replace or reimagine smartphones with a calmer device. But it's hard to feel particularly zen hearing this from a company that has diluted its mission to benefit humanity with every passing year, most recently by laying out an enshittification-based roadmap to profitability that relies on placing advertising within ChatGPT responses, despite Altman previously stating that he found the idea of combining ads with AI "uniquely unsettling."

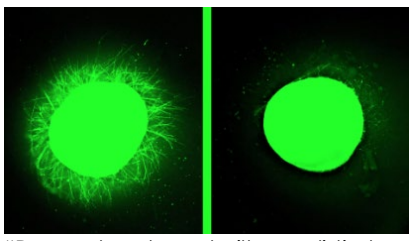
Source: Dezeen (18 Feb 2026)

HEALTHCARE
Lab Grown Human Spinal Cord Heals After Injury in Major Breakthrough

IMAGING
A New Scan Lets Scientists See Inside the Human Body In 3D Color

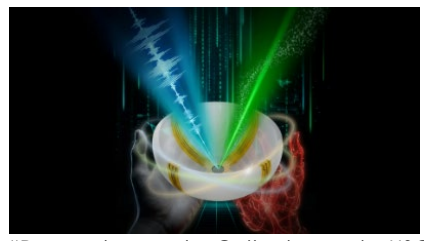
MATERIALS
Scientists Create Smart Synthetic Skin That Can Hide Images and Change Shape

ROBOTICS
Will Self-Driving 'Robot Labs' Replace Biologists? Paper Sparks Debate



"Researchers have built a realistic human mini spinal cord in the lab and used it to simulate traumatic injury. The model reproduced key damage seen in real spinal cord injuries, including inflammation and scar formation. After treatment with fast moving "dancing molecules," nerve fibers began growing again and scar tissue shrank. The results suggest the therapy could eventually help repair spinal cord damage."

Source: Northwestern University (16 Feb 2026)



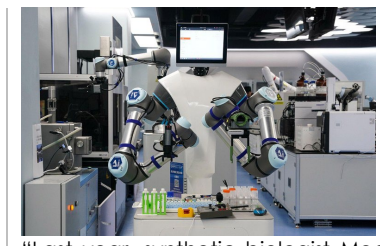
"Researchers at Caltech and USC have created a new medical imaging approach that quickly produces 3D color images showing both the physical structure of soft tissue and how blood vessels are working. The technique has already been used to image several parts of the human body. Scientists say it could lead to better breast cancer imaging, improved tracking of nerve damage linked to diabetes, and new ways to study the brain."

Source: Caltech (6 Feb 2026)

"Synthetic materials are widely used across science, engineering, and industry, but most are designed to perform only a narrow range of tasks. A research team at Penn State set out to change that. Led by Hongtao Sun, assistant professor of industrial and manufacturing engineering (IME), the group developed a new fabrication technique that can produce multifunctional "smart synthetic skin." These adaptable materials can be programmed to perform a wide variety of tasks, including hiding or revealing information, enabling adaptive camouflage, and supporting soft robotic systems.

Using this new approach, the researchers created a programmable smart skin made from hydrogel, a soft, water-rich material. Unlike conventional synthetic materials with fixed behaviors, this smart skin can be tuned to respond in multiple ways. Its appearance, mechanical behavior, surface texture, and ability to change shape can all be adjusted when the material is exposed to external triggers such as heat, solvents, or physical stress."

Source: Penn State (6 Feb 2026)



"Last year, synthetic biologist Meagan Olsen performed the biggest experimental campaign of her career.

The PhD student at Northwestern University in Evanston, Illinois, was trying to make proteins in a test tube more efficiently. Across more than 40 experiments over four months, she tested 1,231 combinations of sugars, amino acids and other ingredients, including cellular machinery, before landing on a cocktail that was at least six times cheaper than existing cell-free protein-synthesis recipes1.

Now, an 'autonomous laboratory' system made up of a large language model (LLM) 'scientist', lab robotics that automate simple tasks such as liquid transfer and human overseers created by scientists at artificial-intelligence firm OpenAI in San Francisco, California, and Ginkgo Bioworks, a biotechnology company in Cambridge, Massachusetts, has eclipsed Olsen's record. It achieved a further 40% reduction in cost, after testing more than 30,000 experimental conditions over 6 months.

The findings — described in a paper posted on the bioRxiv preprint server on 5 February — have sparked discussion over the extent to which chatbot-controlled robots could replace humans."

Source: Nature (18 Feb 2026)

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