

Best of Last Week—protein responsible for cancer, fingerprints not unique, how dietary restrictions slow aging

January 15 2024, by Bob Yirka

Saliency map highlights areas that contribute to the similarity between the two fingerprints from the same person. Credit: Gabe Guo/Columbia Engineering

It was a good week for biology as a team of biochemists at the University of California, Riverside, tamed [a chaotic protein](#) believed to

be responsible for fueling 75% of all cancers. Called MYC, the protein is responsible for making the majority of cancer cases worse, the researchers found. Also, an international trio of economists, demographics experts and an ecosystems specialist found evidence that [families will change dramatically](#) over the coming years. They found most people will have fewer relatives such as cousins, nieces and nephews, but more grandparents and great-grandparents. And a large international team of genomics researchers [sequenced the first genome of myxini](#)—the only vertebrate lineage that still had no reference genome.

In technology news, a collaboration between researchers at Hod Lipson's Creative Machines lab at Columbia Engineering and Wen Yao Xu's Embedded Sensors and Computing lab at the University at Buffalo, found human fingerprints [are not as unique](#) as previously thought. Using an AI application, the group analyzed pairs of fingerprints in a government database to discern when "unique" fingerprints belonged to the same person and when they didn't. And a team of engineers at the Harvard John A. Paulson School of Engineering and Applied Sciences designed [a solid state battery](#) that can be charged in minutes and lasts for thousands of cycles. Also, a combined team with members from the Universities of Bayreuth, Xiamen, Shenzhen, the Argon National Laboratory and the Physics Institute of the Chinese Academy of Sciences developed [a long-cycle, high-energy, sodium-ion battery](#), validated at 165 Wh/kg. And a team of computer scientists from Los Alamos National Laboratory and Oak Ridge National Laboratory developed [a novel AI framework](#) that generates images without the need for random seeding.

In other news, a team of medical scientists at Duke-National University of Singapore Medical School, working with a colleague from the Indian Institute of Science, developed [a potential nasal vaccine](#) for COVID-19 that offers better and longer protection than current vaccines. Also, an

international team of researchers presented [a bold solution](#) to address climate change, biodiversity loss and social injustice. It involves implementing "radical incrementalism." And finally, a team at the Buck Institute for Research on Aging identified how [dietary restrictions](#) can slow brain aging and increase lifespan.

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Citation: Best of Last Week—protein responsible for cancer, fingerprints not unique, how dietary restrictions slow aging (2024, January 15) retrieved 3 July 2024 from <https://sciencex.com/news/2024-01-week-protein-responsible-cancer-fingerprints.html>

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