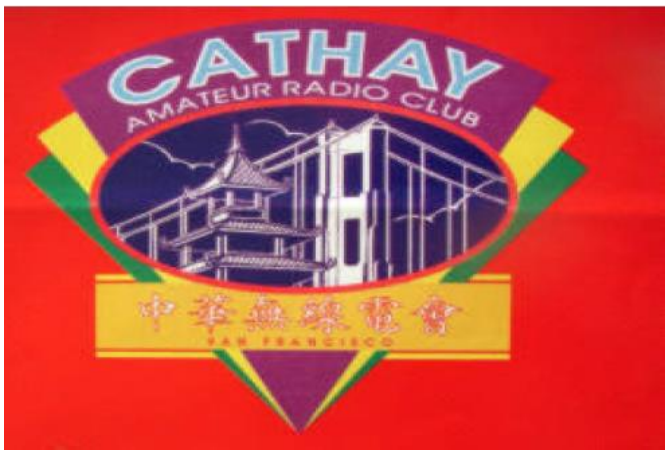


Cathay June 2025

www.cathayradio.org

President North: Leonard Tom, *NX6E* **email:**nx6e@sonic.net
Vice President South: Bill Fong, *W6BBA* - **email:**w6bba@arrl.net
Secretary/Membership: Rodney Yee, *KJ6DZI* - **email:**rodyee2000@yahoo.com
Editor: Rodney Yee, *KJ6DZI* - **email:**rodyee2000@yahoo.com
Treasurer: Rodney Yee, *KJ6DZI* - **email:**rodyee2000@yahoo.com
Web Master: Edison Fong – *WB6IQN* - **email:**edison_fong@hotmail.com
Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, As of 8/21/2023 we are switching over from using Repeater: WB6TCS to **Nick Cassarino's Repeater: WA6GEL UHF 444.800 Mhz, Offset +5 Mhz, CTCCS/Tone PL 179.9 Hz on Monument Peak, Milpitas. If you are in the North Bay, one can use the WA6GEL repeater North Bay located on Mt. San Bruno - 444.8 MHz offset +5 Mhz, CTCCS/Tone PL173.3 Hz**

The CARC Monday night net is the best way to find out the latest club news. All check-in are welcome.

Message on Behalf of the President: Leonard Tom, *NX6E*

Hello CARC Members and Friends;

Many thanks to both Nick Cassarino for the use of repeater – WA6GEL for our CARC Monday Night Net.

Additional folks are needed to help out with conducting the CARC radio net on Monday nights. Please contact Ed Fong (edison_fong@hotmail.com) if you are interested.

SAVE THE DATE: Saturday June 28, 2025 is ARRL Field Day.

Please join us for the annual ARRL CARC/ SARES Field Day and Dinner Event. See details at bottom of newsletter.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Introduction to Tech Section:

This month's article is about a young and talented Asian PHD student, Ms Sophie Shi who was the lead author on "Decoding the role of sugar molecules in brain aging and neurodegenerative diseases". She holds dual degrees in Chemistry and Biology. In 2015 Ms. Sophie was still in high school.

In the fall of 2025, Ms Sophie will head of her own lab at Harvard's Rowland Institute to continue her research that would potentially develop new treatments for brain diseases.

For more details, see the Tech Section of this newsletter.

CARC Final News Wrap Up

Chat sub s'em to all you CARC members! - Leonard Tom, *NX6E*

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:
http://www.arrl.org/find-an-amateur-radio-license-exam-session

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills,practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are

welcome to check in. ACS members perform Net Control duty on a regular basis. On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month from 1900 hours to 2100 hours local time. Currently meetings are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2025 are:

- June 17, 2025
- July 15, 2025
- August 19, 2025

Location of in person future ACS meetings are yet to be determined as the regular location is under reconstruction. All interested persons are welcome to attend. For further information contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

For more information, please attend an ACS meeting, check in on the ACS radio net, or call 415-558-2717.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

https://sf-fire.org/nert/nert-calendar-meetings-trainings-events

Training Classes: see above website. TBD

+ Recertifications
TBD

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

Visit ***www.sfgov.org/sffdnert*** to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into two 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training (New Members)

The next SFPD ALERT training class has been scheduled for: TBD

*Class date indicated are only for new members

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register fora training class by contacting the ALERT Program Coordinator, marina.chacon@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on TBD

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Lt. Marina Chacon (SFPD Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:
https://sfgov.org/policecommission/alert

Tech Article

Stanford University

Stanford Report

https://news.stanford.edu/stories/2025/02/study-links-the-sugars-on-cell-surfaces-to-brain-resilience

February 26th, 2025

Changes in brain's 'sugar shield' could be key to understanding effects of aging

New findings about the sugary armor on the brain's frontline cells could shed light on cognitive decline and diseases like Alzheimer's – and open new avenues for treatment.

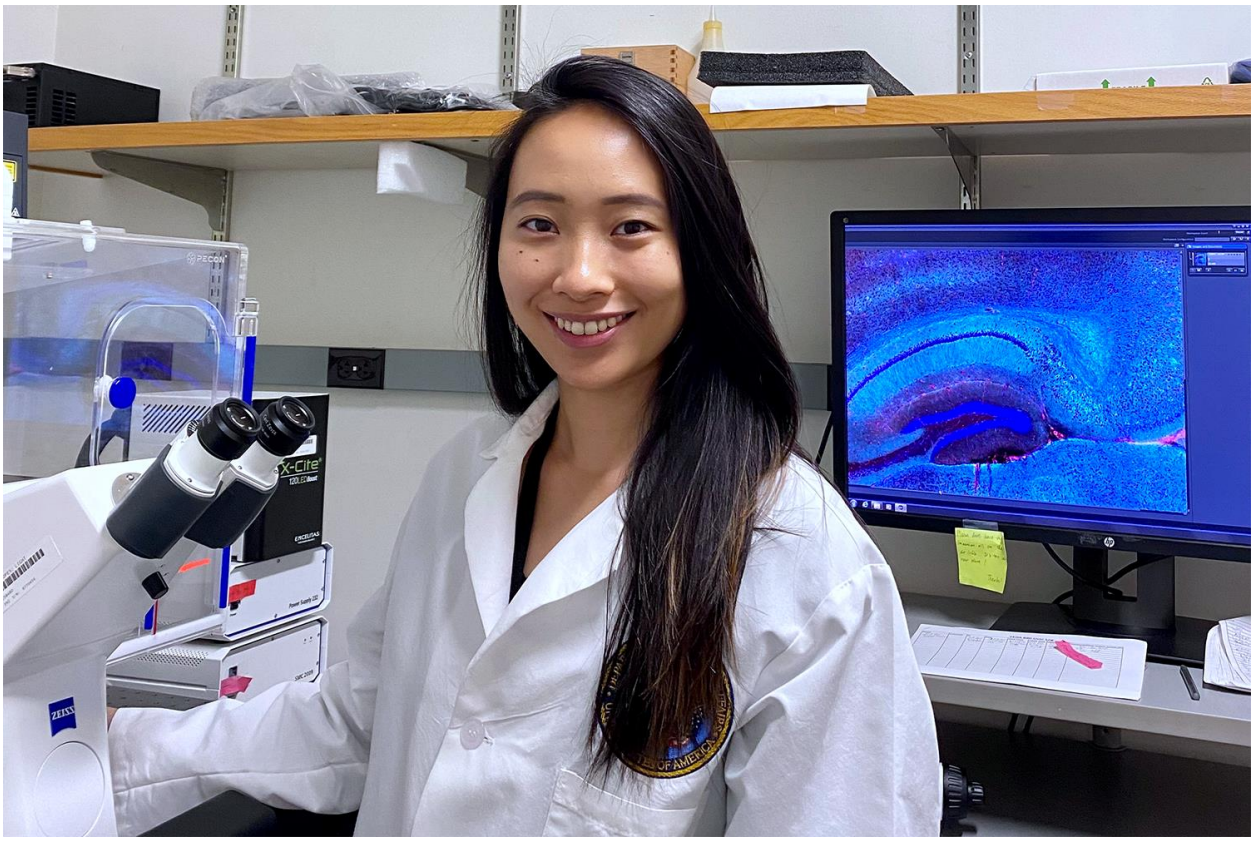

Getty Images

What if a critical piece of the puzzle of brain aging has been hiding in plain sight? While neuroscience has long focused on proteins and DNA, a team of Stanford researchers dared to shift their gaze to sugars – specifically the complex sugar chains that cover all our cells like chain mail.

Their investigation revealed how changes in this sugary armor on the brain's frontline cells could be key to understanding cognitive decline and diseases like Alzheimer's.

"This is like landing on a new planet," says Nobel laureate Carolyn Bertozzi, professor of chemistry and Baker Family Director of Sarafan ChEM-H, whose groundbreaking research on cell surface sugars and their biological roles laid the groundwork for this interdisciplinary study. "We're stepping outside for the first time and trying to make sense of what's out there."

At the center of this discovery is Sophia Shi, a Stanford Bio-X Graduate Fellow, whose doctoral research bridges the labs of Bertozzi and neuroscientist Tony Wyss-Coray, professor of neurology and neurological sciences and the Director of the Phil and Penny Knight Initiative for Brain Resilience at the Wu Tsai Neurosciences Institute.



Sophia Shi, the study's lead author and a Stanford Bio-X Graduate Fellow and PhD student in the Department of Chemistry. | Courtesy Sophia Shi

In a study in aging mice, Shi has uncovered striking age-related changes in the sugary coating – called the glycocalyx – on cells that form the blood-brain barrier, a structure that protects the brain by filtering out harmful substances while allowing in essential nutrients.

"The glycocalyx is like a forest," Shi explains. "In young, healthy brains, this forest is lush and thriving. But in older brains, it becomes sparse, patchy, and degraded."

These age-related changes to the glycocalyx weaken the blood-brain barrier, Shi found. As the barrier becomes leaky with age, harmful molecules can infiltrate the brain, potentially fueling inflammation, cognitive decline, and neurodegenerative diseases.

"This work lays the foundation for a new field of inquiry into how the aging brain loses its resilience," says Wyss-Coray, the D.H. Chen Professor II of Neurology.

The study, published online in *Nature* on Feb. 26, was jointly supervised by Bertozzi and Wyss-Coray, with Shi as lead author.

Decline and resilience in the blood-brain barrier

While Wyss-Coray's lab has extensively studied how aging impacts the blood-brain barrier, Shi's project was the first to investigate how age affects its sugary armor – the glycocalyx. The results were striking: In older mice, bottlebrush-shaped, sugar-coated proteins called mucins, a key component of the glycocalyx, were significantly reduced. This thinning of the glycocalyx correlated with increased permeability of the blood-brain barrier and heightened neuroinflammation.

When the team reintroduced those critical mucins in aged mice, restoring a more "youthful" glycocalyx, they improved the integrity of the blood-brain barrier, reduced neuroinflammation, and measurably improved cognitive function.

"Modulating glycans has a major effect on the brain – both negatively in aging, when these sugars are lost, and positively, when they are restored," Shi says. "This opens an entirely new avenue for treating brain aging and related diseases."

Professors Carolyn Bertozzi and Tony Wyss-Coray. | Christopher Michel; Gary Wagner

Bertozzi underscores the significance of the discovery: "Biology is often about looking in the right place. This huge structural change in the glycocalyx was hiding in plain sight because no one had thought to look at it before, or had the tools to do so."

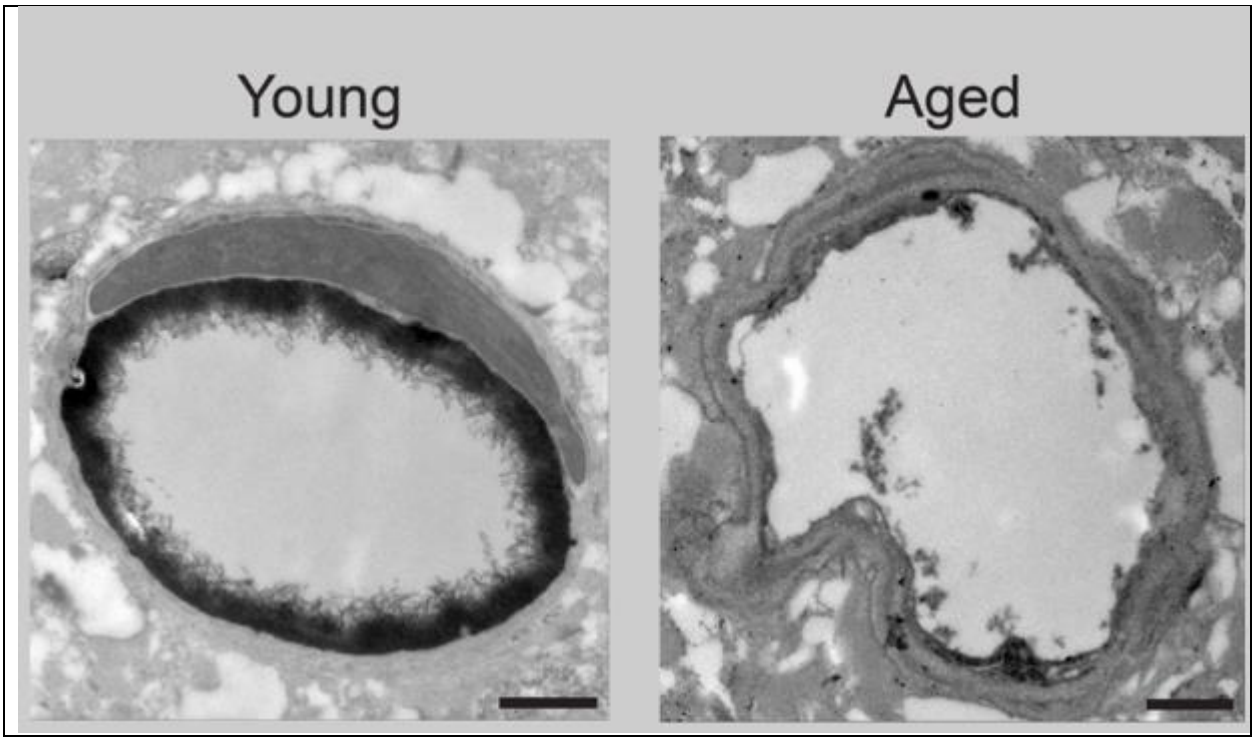
Shi's work also raises new questions. While the glycocalyx is traditionally viewed as a passive barrier that blocks harmful substances from entering cells, its sugars may play a more active role in the brain and how it ages.

Scientists often look to nucleic acids and proteins to understand how biological processes are precisely controlled, but they may be missing the roles that sugar molecules play, Bertozzi explains. "The glycome adds a layer of complexity that allows biological systems to achieve extraordinary fine-tuning." This is particularly true in the brain, where many sugar molecules are uniquely expressed. Yet, until now, their roles in brain aging and disease have remained largely unexplored, she adds.

Shi's dual expertise in chemistry and biology enabled her to tackle a problem that neither lab could have solved alone. This study also brought together the two interdisciplinary institutes that share the Stanford ChEM-H / Neurosciences Research Complex: Sarafan ChEM-H and the Knight Initiative for Brain Resilience at the Wu Tsai Neurosciences Institute.

The brain's sugar shield and disease

Many questions remain about the glycocalyx – what drives its decline with age, and do similar changes occur in humans? "It's hard to study human brains," Bertozzi notes, "but understanding whether similar mechanisms are at play in humans will be crucial for translating these discoveries into therapies."



In young mice (left), a dense layer of sugar molecules (shown in black on this transmission electron micrograph) coats the inner lining of the brain vasculature. In

older mice (right), that layer becomes sparse and thinner. Restoring the “youthful” sugar coat improved cognitive function in aged mice. | Sophia Shi

The study also offers new opportunities to tackle neurodegenerative diseases like Alzheimer’s, a particular interest for Shi. By identifying the molecular pathways behind glycocalyx changes, the team hopes to uncover therapeutic targets that could slow or even reverse disease progression. Shi, who will soon establish her own lab at the Rowland Institute at Harvard, plans to expand this research to better understand glycans’ roles in neurodegeneration and explore their potential for developing new treatments.

Beyond aging and neurodegeneration, the findings have significant implications for effectively delivering drugs to the brain. The blood-brain barrier is notoriously difficult to penetrate, making it challenging to treat many neurological diseases. By understanding the role of the glycocalyx, scientists may discover better ways to get medicines into the brain, offering hope for conditions ranging from multiple sclerosis to brain cancer.

For now, this work represents a first step into a new field. As Shi puts it, “I’m excited to unlock the secrets of the glycocalyx in brain aging and neurodegeneration and discover how we can harness its potential to improve brain health.”

<<< End of Technical Article >>>

The 2025 Annual CARC / SARES Picnic - ARRL Field Day

Cathay Amateur Radio Club – Sunnyvale Amateur Radio Emergency System

By Ed Fong

Date : Saturday June 28, 2025 – starting at 2 PM - dinner is at 4PM

Where: Fairbrae Swim & Racquet Club - 696 Sheraton Dr, Sunnyvale, CA 94087

Cost: **Free to all CARC / SARES Members, family and friends** - we ask you to bring a dessert, fruits (watermelon, oranges, apples, etc) and /or drinks.
Provided DINNER is free to all attendees.

Raffle tickets: - $5 each or 3 tickets for $10

RSVP: edison_fong@hotmail.com

ARRL Field Day is coming up this year. It will take place Saturday June 28, 2025. Mark your calendars. This is the Field Day to be at. Last year we had 85 registered attendees.

This year we have been very fortunate to reserve the very exclusive Fairbrae Swim and Tennis Club in Sunnyvale, CA. This venue was brought back by popular demand having previously hosted CARC/SARES Field Day events. This is a beautiful well-maintained private facility in the heart of Silicon Valley with easy driving access and plenty of parking. It has a half Olympic size swimming pool, two full size tennis courts, large picnic area, industrial kitchen and full-size dining hall, clean restrooms, and showers for use of both members and guests.

We have reserved the facility from 2 PM Saturday, June 28, 2025 through Sunday (at least till noon) June 29, 2025 for our CARC/SARES ARRL 2025 Field Day.

This year we will have a Chinese themed feast catered by First Wok Restaurant of Sunnyvale.

They have promised us a meal to remember with the follow dishes:

- Egg rolls for appetizer
- Vegetable Fried Rice,
- Mongolian beef
- Egg plant with Szechuan sauce
- String bean chicken.

Bring your entire family (or extended family) and friends to have a great day of socialization, great food, swimming, tennis, and of course HAM Radio.

Radios and antennas will be set up for HF and VHF the day before. Bring your own radio and feel free to plug it in and operate. This is a great opportunity to operate other radios and experience the look and feel of various manufacturers.

There will also be the traditional raffle, which will include but not limited to – the uSDX+ HF all mode transceiver, quad band mobile radio, antennas, etc.

Raffle tickets are $5 each => 3 for $10

A partial sample of raffle prizes are shown below:

1st Prize Lenovo – Thinkpad i5 processor with 8GB of memory and 256GB SSD

Windows 10 Pro operating system

14 inch screen - just perfect to carry around.

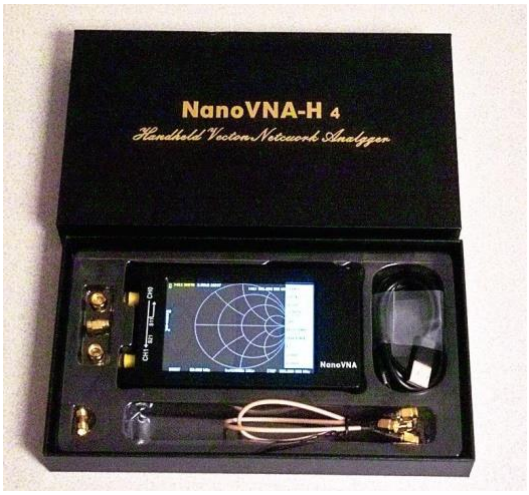
uSDX+ - QRP HF transceiver - Covers 80-6 meters – SSB, CW, digital QRP transceiver. 5 watts CW/SSB. Built in CW decoder, full DSP noise reduction. Complete with 4000 mAhr Li-on battery, AC adapter/charger, Speaker/microphone.

Radioddity QB25 (Quad Mobile 25 watt transceiver) 2 meters, 1.25 meter, 70cm

This radio boasts 200 memories, full software programmability, great bullet proof front end with 0.25 uV sensitivity, full FM broadcast radio, direct microphone key pad entry, and absolutely the best color display out there and more.

If you have been looking to get on 220 MHz, this is the latest and greatest. You will be a proud owner of one of this radio.

DSO03D12 120 MHz dual trace scope with probes - features a built in DVM and signal generator. Even has FFT mode mimic a spectrum analyzer. Every bench should have one.



Nano VNA - H4 - 4 inch 1.5 GHz VNA - Tuned antennas, duplexers, filters etc. Full touch screen. Latest version includes functions for TDR – time domain reflectometer.

Includes cables and full calibration kit.

Baofeng UV5R dual -band handie talkie

Drop in Lion smart charge, 1800 mAh Lion, battery, belt clip, antenna

Frequency coverage:

- 65-108 MHz – FM broadcast – receive only
- 136-174 MHZ – VHF – TX/RX
- 420- 520 - MHz - TX/RX

Mark your calendars – Saturday June 28, 2025, this is going to be a fun filled event.

See below pictures of the exclusive and well maintained Fairbrae Swim & Racquet Club in Sunnyvale, CA.

Half size Olympic swimming pool.

Lounge Area

Overhead shot of Tennis courts and Swimming Pool