

**The Lord is
like a strong
tower, where
the righteous
can go and
be safe.**

Proverbs 18:10

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DIYARYO KABITENYO

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**Be alert,
stand firm
in the faith,
be brave, be
strong.**

1 Corinthians 16:13

SM City General Trias targets Q4 2026 opening

GENERAL TRIAS expected to create in provinces surrounding CITY, Cavite – thousands of jobs for Metro Manila as urban Construction of SM City residents of General Trias growth extends into General Trias, one of the and nearby communities. areas such as Cavite. largest malls planned by The mall is part of the General Trias, one SM Prime Holdings in Riverpark master planned of the province's the region, continues to mixed use development, rapidly developing progress two years after which will also feature cities, has seen its groundbreaking, with residential communities, increasing residential the company aiming to a commercial business and commercial open the mall in the district, and a transport developments as more fourth quarter of 2026. hub. businesses and residents

According to SM SM Prime continues move from the capital Prime, the project is to expand its presence region.



Motorcycle taxi rider slain in Carmona, passenger arrested

A motorcycle taxi lifeless along the first believed P o l i c e expanded after the and took another rider lost his life after roadside. the incident was investigation showed victim's motorcycle motorcycle. he was reportedly Authorities later a hit and run that on July 9, the was found in Trece The victim's robbed and shot by his arrested the suspect accident. However, suspect booked a Martires City. widow said they passenger following during an entrapment i n v e s t i g a t o r s ride from Manila to Authorities also exchanged messages a trip from Manila to operation in Tondo, recovered a spent Carmona, where the linked the suspect before her husband Carmona City, Cavite. Manila. He is now bullet casing and incident is believed to another shooting left for Cavite. Around The victim, being held at the an unfired bullet at to have taken place incident in the city, midnight, she received identified as 35 year Trece Martires Police the scene, leading before taking the where he allegedly several messages from old Ren Ren De Custodial Facility. authorities to classify victim's motorcycle. abandoned the his phone asking for Laviga, was found Initial responders the case as a shooting. The investigation victim's motorcycle

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DIYARYO KABITENYO

News Publishing Service

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ARNULFO BARCO

(May 14, 1951 - September 2, 2024)
Founder

GENER BARCO

Publisher-Editor

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(MOTORCYCLE...from page 1)

money. family immediately

The suspect sought help from the allegedly pretended police.

to be the victim Authorities and claimed he had then conducted an been involved in a operation that resulted motorcycle accident in the suspect's arrest in Naic, Cavite. She in Tondo, Manila.

became suspicious Police recovered after noticing that the a motorcycle and a photos sent did not .45 caliber firearm match the reported believed to have been location. used in the incident.

The suspect later Authorities are admitted that the preparing to file victim was in his multiple charges, custody and demanded including robbery P5,000 in exchange with homicide and for his supposed safe other related offenses. release. The investigation

He also asked the remains ongoing to victim's sibling, who determine whether the was working abroad, suspect was involved for money. Instead of in other crimes within sending payment, the Cavite Province.

Hidden Pathogens: New bacteria linked to ulcers in pygmy sperm whales

Much of what Diseases, named them testing, and DNA fibrosis and nematode researchers know about Kogia Helicobacter 1, 2, sequencing revealed several infestations. pygmy sperm whales has and 3, offering new insight previously unknown In one case, there was come from animals that into an elusive species Helicobacter genotypes. also colitis, which suggests wash ashore, particularly while raising broader "Two of the genotypes, that the infection may not along the southeastern questions about how Kogia Helicobacter 1 and be limited to the stomach. United States where this bacterial infections may 2, are genetically similar While Helicobacter species appears more affect marine wildlife and to known Helicobacter wasn't listed as the cause frequently than almost ocean health. species previously found of death in any of the any other large marine "Helicobacter bacteria in other cetaceans -- such whales, these lesions raise mammal. have long been associated as dolphins and porpoises questions about its role in

Examinations of with gastrointestinal -- and in humans," said Wendy Marks, Although the these stranded whales disorders in humans and research coordinator of the researchers did not have uncovered recurring other animals, including corresponding author and a conclude that Helicobacter medical problems like chronic gastritis, ulcers, marine wildlife veterinary directly caused the whales' stomach ulcers, which are and even gastric cancer," medicine and research lab deaths, the repeated sometimes associated with said Annie Page, D.V.M., at FAU Harbor Branch. presence of inflammation, Helicobacter, a group of Ph.D., senior author, an "But Kogia Helicobacter ulcers, tissue scarring, and bacteria capable of living in associate research professor 3 belongs to a more other digestive problems the stomach and intestines and clinical veterinarian at FAU Harbor Branch. suggests the bacteria could of many animals, including humans and whales. "To find novel strains emphasizes the possibility contribute to chronic

After reviewing more of these bacteria in a deep- that there are far more illness. than 20 years of stranding diving whale species is undiscovered bacteria in Helicobacter was records and preserved intriguing." From 1999 the ocean than we realize." first reported in marine tissue samples, researchers through 2020, FAU Researchers found both mammals in 2000, and at Florida Atlantic Harbor Branch responded Kogia Helicobacter 1 and since then, related bacteria University's Harbor to 59 pygmy sperm whale 3 in the forestomach tissue have been detected in Branch Oceanographic strandings, completing of one whale, and each of several cetacean species Institute and collaborating post-mortem examinations the four whales that tested around the world, Institutions identified three on 80% of those animals. positive showed clear signs with infection in some Helicobacter genotypes In four cases, scientists of gastrointestinal disease. animals connected to low never before documented, found spiral-shaped, "All four whales energy, loss of appetite, marking the first confirmed "spirilliform" bacteria that tested positive for regurgitation, stomach discovery of these strains within stomach tissue, Helicobacter had visible ulcers, and inflammation, in pygmy sperm whales. and reexamining the gastric pathology," said many of which are similar The study, published in preserved samples using Page. "We saw signs of to symptoms seen in the Journal of Wildlife histopathology, molecular gastritis, gastric ulcers, infected humans.

**DEED OF EXTRA JUDICIAL SETTLEMENT
OF ESTATE WITH WAIVER OF RIGHTS**

NOTICE is hereby given that the estate of the late **MELINDA DEL CASTILLO** who died intestate on September 7, 2025 in the City of Cavite, Philippines, consisting of a parcel of land situated in the City of San Antonio, Prov. of **Cavite**, covered by TCT No. T-14776 with all the improvements erected thereon, containing an area of ONE HUNDRED FIFTY THREE (153) SQUARE METERS has been adjudicated and extrajudicially settled by and among her only heirs with waiver of shares, interests and participation over the said parcel of land with all the improvements erected thereon in favor of EMMIL D. SAÑEZ on July 6, 2026 in Cavite City, Philippines before Notary Public Atty. Sikat G. Villacorte-Agbunag and entered in her Notarial Register as Doc. No. 436; Page No. 89; Book No. XXXI; Series of 2026.

(Sgd.) **All Heirs**

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 6, 13 & 20, 2026

RA Form No. 10.0 (LCRO)

Republic of the Philippines
Office of the Municipal Civil Registrar
Rosario, Cavite

NOTICE FOR PUBLICATION

CCE-0048-2026 R.A. 10172

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guidelines in the Implementation of the Administrative Order No 1 Series of 2012 (IRR on R.A. 10172). Notice is hereby served to the public that **JAIME USON ESGUERRA** has filed in this office, a petition for **Correction of Entry in Gender** from **FEMALE** to **MALE** in the Certificate of Live Birth of **JAIME USON ESGUERRA** at Rosario, Cavite and whose parents are **Regino Sarmiento Esguerra and Paulina Colos Uson**.

Any person adversely affected by said petition may file his/her written opposition with this office not later than **20 July 2026**.

(Sgd.) **MARIA ROSARIO C. SORIANO**
Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 6 & 13, 2026

Magic mushrooms may reshape the brain long after the trip ends

A single dose of psilocybin, the psychedelic substance in magic mushrooms, may produce physical changes in the brain that remain detectable for as long as a month, according to researchers at UC San Francisco and Imperial College London. The study, published in Nature Communications, involved healthy adults who had never previously used a psychedelic. Although none of the participants had a diagnosed mental health condition, the findings may offer clues about why psilocybin

**REPUBLIC OF THE PHILIPPINES
FOURTH JUDICIAL REGION
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
TRECE MARTIRES CITY**

BDO UNIBANK, INC.,
Mortgagee,

FORECLOSURE CASE NO. F-228-26

-versus-

MARC LLOYD R. DELA CALZADA
Debtor/Mortgagor.

X-----X

NOTICE OF EXTRA-JUDICIAL SALE

Upon Extra-Judicial Petition for Sale under Act 3135, as amended by Act 4118, filed by Mortgagee, **BDO UNIBANK, INC.**, with business address at 33rd Floor, BDO Corporate Center Ortigas, No. 12 ADB Avenue, Mandaluyong City against the Debtor/Mortgagor, **MARC LLOYD R. DELA CALZADA**, represented herein by **Irene Ventura Ayon** as his Attorney-in-Fact, with residence and postal addresses at (1) Zone 4-B, District II, Barangay Culianan, Zamboanga City (Occupied by third party); (2) No. 109 Banaba Lejos, Indang Cavite (unknown address) and (3) Block 15, Lot 18, Kensington 11, Brgy. Navarro, General Trias City, Cavite, to satisfy the mortgage indebtedness which as of **March 10, 2026** amounts to **TWO HUNDRED FIFTY THREE THOUSAND EIGHT HUNDRED TEN PESOS and 79/100 (PhP253,810.79)**, Philippine Currency, including interest, penalties and other charges as of said date but exclusive of all other expenses incidental to this foreclosure and sale, the undersigned Sheriff will sell at public auction on **August 7, 2026** at 10:00 o'clock in the morning until 12:00 o'clock noon at the main entrance of the Government Center Building located at the Provincial Capitol Compound, Trece Martires City, to the highest bidder for **CASH** and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE No. 057-2018009777

Lot No. 18 Block: 15 Plan No. Psd-04-226212
Portion of: Block 14, Pcs-04-027752, Decree No. 4270, LRC Rec. No. 5964
Location: Barangay of Navarro, Municipality of Gen. Trias, Province of Cavite, Island of Luzon
Boundaries:

LINE	DIRECTION	ADJOINING LOT(S)
1-2	NE	Lot 17, Block 15, Psd-04-226212
2-3	SE	Lot 16, Block 15, Psd-04-226212
3-4	SW	Road Lot 18, Psd-04-226212
4-1	NW	Lot 20, Block 15, Psd-04-226212

Area: FORTY SQUARE METERS (40), more or less

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said date and time, it shall be held on **August 20, 2026** without further notice.

Prospective bidders/buyers are hereby enjoined to investigate for themselves the title to the said property and encumbrances thereon, if any there be.

Trece Martires City, July 3, 2026.

(Sgd.) **JOANNAH AVIGAIL F. CRISOLOGO-TIMKANG**
Sheriff IV

Copy Furnished:

BDO UNIBANK, INC.
CONSUMER REMEDIAL MANAGEMENT
33rd Floor, BDO Corporate Center Ortigas
No. 12, ADB Avenue, Mandaluyong City

MR. MARC LLOYD R. DELA CALZADA
MS. IRENE VENTURA AYON

(1) Zone 4-B, District II, Barangay Culianan, Zamboanga City
(2) No. 109 Banaba Lejos, Indang, Cavite
(3) Block 15, Lot 18, Kensington 11, Brgy. Navarro, General Trias City, Cavite

WARNING: It is absolutely prohibited to remove, deface or destroy this Notice of Extra Judicial Sale on or before the date of sale.

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 6, 13 & 20, 2026

has shown therapeutic potential for depression, anxiety, and addiction. Metzner Distinguished Professor of Neurology at UCSF. "Our data shows

Researchers focused on temporary increases in brain "entropy," a term describing the variety and unpredictability of neural activity. Their results suggest that this more diverse pattern of brain activity may promote psychological insight and that the psychedelic experience itself could play an important role in

that such experiences of psychological insight relate to an entropic quality of brain activity and how both are involved in causing subsequent improvements in mental health. It suggests that the trip -- and its correlates in the brain -- is a key component of how psychedelic therapy works."

psilocybin's longer-term effects. The researchers used several methods to

A larger rise in entropy during the minutes and hours after a high dose was associated with greater emotional insight the following day. Participants who reported more insight were also more likely to describe

examine brain activity, connectivity, and structure. Measurements were taken before the psychedelic dose, during the peak of the experience, and again one month later.

Because none of the 28 volunteers had a diagnosed mental health condition, the team was able to perform a broader range of tests than might have been possible in a clinical patient group.

"Psychedelic means 'psyche-revealing,' or making the psyche visible," said senior author Robin Carhart-Harris, PhD, the Ralph

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REPUBLIC OF THE PHILIPPINES
FOURTH JUDICIAL REGION
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
TRECE MARTIRES CITY

PHILIPPINE NATIONAL BANK,
(In its capacity as assignee-mortgagee
Of PNB Savings Bank)

Mortgagee,

FORECLOSURE CASE NO. F-280-26

-versus-

SUSANA T. TARIN represented herein
By her Attorney-in-Fact SHIRLEY
TEBELIN TARIN,

Debtor/Mortgagor.

X-----X

NOTICE OF EXTRA-JUDICIAL SALE

Upon Extra-Judicial Petition for Sale under Act 3135, as amended by Act 4118, filed by Mortgagee, **PHILIPPINE NATIONAL BANK**, (In its capacity as assignee-mortgagee of PNB Savings Bank) with business address at PNB Financial Center, Pres. Diosdado P. Macapagal Blvd., Pasay City against the Debtor/Mortgagor, **SUSANA T. TARIN**, represented herein by her Attorney-in-Fact by **Shirley Tebelin Tarin**, with residence and postal addresses at (1) #83-C Orchid Bernabe Phase II, San Dionisio, Parañaque City (2) 6711 Tramo St., San Dionisio, Parañaque City (3) Lot 28, Block 05 Brighton Phase 3, Brgy. Pasong Camachile, Gen. Trias, City and (4) Avenue de Thonez, 61225 Chene-Bourg, Switzerland, to satisfy the mortgage indebtedness which as of **February 28, 2026** amounts to **EIGHT MILLION EIGHT HUNDRED THIRTY SIX THOUSAND TWO HUNDRED EIGHTY SIX PESOS and 36/100 (PhP8,836,286.36)**, Philippine Currency, including interest, penalties and other charges as of said date but exclusive of all other expenses incidental to this foreclosure and sale, the undersigned Sheriff will sell at public auction on **August 7, 2026** at 10:00 o'clock in the morning until 12:00 o'clock noon at the main entrance of the Government Center Building located at the Provincial Capitol Compound, Trece Martires City, to the highest bidder for **CASH** and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE 057-2020048146

Lot No. 28 Block No. 5 Plan No. Pcs-04-031781
Portion of: Block 17, Pcs-04-030363 & Lot 1832, SFDM Estate (FRS-04-005426), LRC Record No. 5964
Location: Barangay of Pasong Camachile, City of Gen. Trias, Province of Cavite, Island of Luzon
Boundaries:

LINE	DIRECTION	ADJOINING LOT(S)
1-2	NE	Lot 29, Block 5, Pcs-04-031781
2-3	SE	Lot 8, Block 5, Pcs-04-031781
3-4	SE	Lot 9, Block 5, Pcs-04-031781
4-5	SW	Lot 11, Block 5, Pcs-04-031781
5-6	SW	Lot 12, Block 5, Pcs-04-031781
6-7	NW	Lot 27, Block 5, Pcs-04-031781
7-1	NW	Road Lot 8, Pcs-04-031781

Area: ONE HUNDRED SEVENTY FIVE (175) SQUARE METERS, more or less

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said date and time, it shall be held on **August 20, 2026** without further notice.

Prospective bidders/buyers are hereby enjoined to investigate for themselves the title to the said property and encumbrances thereon, if any there be.

Trece Martires City, July 3, 2026.

(Sgd.) **REYNALDO L. SALOMA**
Sheriff IV

Copy Furnished:

S.P. MADRID & ASSOCIATES
Counsel for the Mortgagee
17th Floor Chatham House Condominium
Valero St. cor. V.A. Rufino Street, Makati City, M.M.

MS. SUSANA T. TARIN
MS. SHIRLEY T. TARIN
(1) #83-C Orchid Bernabe Phase II, San Dionisio, Parañaque City
(2) 6711 Tramo St., San Dionisio, Parañaque City
(3) Lot 28, Block 05 Brighton Phase 3, Brgy. Pasong Camachile, Gen. Trias, City
(4) Avenue de Thonez, 61225 Chene-Bourg, Switzerland

WARNING: It is absolutely prohibited to remove, deface or destroy this Notice of Extra Judicial Sale on or before the date of sale

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Dates : July 6, 13 & 20, 2026

REPUBLIC OF THE PHILIPPINES
FOURTH JUDICIAL REGION
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
TRECE MARTIRES CITY

BDO UNIBANK, INC.,
Mortgagee,

FORECLOSURE CASE NO. F-315-26

-versus-

SPS. ANGELICA E. DELA CRUZ AND
ISRAEL E. DELA CRUZ,

Debtors/Mortgagors.

X-----X

NOTICE OF EXTRA-JUDICIAL SALE

Upon Extra-Judicial Petition for Sale under Act 3135, as amended by Act 4118, filed by Mortgagee, **BDO UNIBANK, INC.**, with business address at BDO Corporate Center, 33rd Floor, BDO Corporate Center Ortigas, No. 12 ADB Avenue, Mandaluyong City against the Debtor/Mortgagor, **SPS. ANGELICA E. DELA CRUZ AND ISRAEL E. DELA CRUZ**; **ANGELICA E. DELA CRUZ** signing for herself and as **Attorney-in-Fact of ISRAEL E. DELA CRUZ**, with residence and postal addresses at (1) Block 16 Lot 6 Somerset 14, Brgy. Pasong Camachile, Gen. Trias, Cavite (currently occupied by the mortgagors) and (2) No. 1624 Kalimbas Street, Brgy. 340 Zone 34 District II, Sta. Cruz, North Manila (no occupants), to satisfy the mortgage indebtedness which as of **March 31, 2026** amounts to **ONE MILLION NINE HUNDRED FORTY NINE THOUSAND THREE HUNDRED SIXTY SIX PESOS AND 85/100 (PhP1,949,366.85)**, Philippine Currency, including interest, penalties and other charges as of said date but exclusive of all other expenses incidental to this foreclosure and sale, the undersigned Sheriff will sell at public auction on **August 7, 2026** at 10:00 o'clock in the morning until 12:00 o'clock noon at the main entrance of the Government Center Building located at the Provincial Capitol Compound, Trece Martires City, to the highest bidder for **CASH** and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE NO. 057-2021003338

Lot No. 6 Block: 16 Plan No. Pcs-04-028981
Portion of: THE CONS/SUBD OF LOTS 1, 2 & 3, PCS-04-011336; LOT 2457-B-3, PSD-04-024243; LOT 2469-A, PSD-04- 233225; LOT 2457-A, LOT 2457-C, FLS-1228-D; LOT 2458, FRS-04-005325; LOT 2468 ALL OF SAN FRANCISCO, DE MALABON ESTATE, DECREEED NO. 4270; LRC REC. NO. 5964
Location: BARANGAY OF: NAVARRO MUNICIPALITY OF GEN. TRIAS PROVINCE OF: CAVITE
Boundaries:

LINE	DIRECTION	ADJOINING LOT(S)
1-2	SW	ROAD LOT 18, PCS-04-028981

(MAGIC...from page 3)

During the first electrical signals through stage of the experiment, electrodes placed on the participants received 1 scalp. mg of psilocybin, which Over the following the researchers treated weeks, the researchers as a placebo dose. evaluated psychological Their brain activity was insight, well-being, and then monitored with cognitive performance. electroencephalography They also used (EEG), which records functional MRI (fMRI)

2-3	NW	LOT 4, BLOCK 16, PCS-04-028981
3-4	NE	LOT 24, BLOCK 16, PCS-04-028981
4-1	SE	LOT 8, BLOCK 16, PCS-04-028981

Area: NINETY SQUARE METERS (90), MORE OR LESS

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said date and time, it shall be held on **August 20, 2026** without further notice.

Prospective bidders/buyers are hereby enjoined to investigate for themselves the title to the said property and encumbrances thereon, if any there be.

Trece Martires City, July 3, 2026.

(Sgd.) **REYNALDO L. SALOMA**
Sheriff IV

Copy Furnished:

BDO UNIBANK, INC.
CONSUMER REMEDIAL MANAGEMENT
33rd Floor, BDO Corporate Center Ortigas
No. 12, ADB Avenue, Mandaluyong City

SPS. ANGELICA E. DELA CRUZ AND ISRAEL E. DELA CRUZ
(1) Block 16 Lot 6 Somerset 14, Brgy. Pasong Camachile, Gen. Trias, Cavite (currently occupied by the mortgagors)
(2) No. 1624 Kalimbas Street, Brgy. 340 Zone 34 District II, Sta. Cruz, North Manila (no occupants)

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to study brain activity psilocybin, an amount and diffusion tensor capable of producing a imaging (DTI) to examine powerful psychedelic connections between experience. Researchers different parts of the again recorded brain brain. activity with EEG during One month after the trip and repeated the receiving the placebo same psychological and dose, the participants imaging assessments over were given 25 mg of the weeks that followed.

REPUBLIC OF THE PHILIPPINES
FOURTH JUDICIAL REGION
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
TRECE MARTIRES CITY

BDO UNIBANK, INC.,
Mortgagee,

FORECLOSURE CASE NO. F-413-26

-versus-

JUNNIL C. PESCADERO,
Debtor/Mortgagor.

X-----X

NOTICE OF EXTRA-JUDICIAL SALE

Upon Extra-Judicial Petition for Sale under Act 3135, as amended by Act 4118, filed by Mortgagee, **BDO UNIBANK, INC.**, with business address at BDO Corporate Center, 33rd Floor, BDO Corporate Center Ortigas, No. 12 ADB Avenue, Mandaluyong City against the Debtor/Mortgagor, **JUNNIL C. PESCADERO**, represented by **Nilven Callao Pescadero** as Attorney-in-Fact, with residence and postal addresses at (1) No. 126 Virata Street, Samonte Compound, Brgy. Silangan 1, Rosario, Cavite (currently occupied) and (2) Lot 29, Block 1 Phase 3, Brighton, Brgy. Pasong Camachile, General Trias, Cavite (currently occupied), to satisfy the mortgage indebtedness which as of **May 8, 2026** amounts to **TWO MILLION SIX HUNDRED NINETY THREE THOUSAND TWO HUNDRED NINETY THREE PESOS and 31/100 (PhP2,693,293.31)**, Philippine Currency, including interest, penalties and other charges as of said date but exclusive of all other expenses incidental to this foreclosure and sale, the undersigned Sheriff will sell at public auction on **August 7, 2026** at 10:00 o'clock in the morning until 12:00 o'clock noon at the main entrance of the Government Center Building located at the Provincial Capitol Compound, Trece Martires City, to the highest bidder for **CASH** and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE No. 057-2021017661

Lot No. 29 **Block: 1** **Plan No. Pcs-04-031781**
Portion of: Block 17, Pcs-04-030363 & Lot 1832, SFDM Estate, (FRS-04-005426), LRC Record No. 5964,
Location: Barangay of Pasong Camachile, City of Gen. Trias, Province of Cavite, Island of Luzon

Boundaries:

LINE	DIRECTION	ADJOINING LOT(S)
1-2	SW	Road Lot 16, Pcs-04-031781
2-3	NW	Lot 30, Block 1, Pcs-04-031781
3-4	NE	Lot 2, Block 2, Pcs-04-029304
4-5	NE	Lot 1, Block 2, Pcs-04-029304
5-1	SE	Lot 28, Block 1, Pcs-04-031781

Area: NINETY SIX (96) SQUARE METERS, more or less

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said date and time, it shall be held on **August 20, 2026** without further notice.

Prospective bidders/buyers are hereby enjoined to investigate for themselves the title to the said property and encumbrances thereon, if any there be.

Trece Martires City, July 3, 2026.

(Sgd.) **RICARDO E. TOLEDO**
Sheriff IV

Copy Furnished:

BDO UNIBANK, INC.
CONSUMER REMEDIAL MANAGEMENT
33rd Floor, BDO Corporate Center Ortigas
No. 12, ADB Avenue, Mandaluyong City

MS. JUNNIL C. PESCADERO

MR. NILVEN C. PESCADERO

(1) No. 126 Virata Street, Samonte Compound, Brgy. Silangan 1, Rosario, Cavite
(2) Lot 29, Block 1, Phase 3 Brighton, Brgy. Pasong Camachile, General Trias, Cavite

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Scientists revive a powerful antibiotic that superbugs had defeated

Antibiotic resistance is becoming one of the most serious dangers facing modern medicine. As bacteria evolve, drugs that once worked reliably can lose their effectiveness. This makes common infections harder to treat and can increase the risks associated with routine surgery, cancer care, and other medical procedures.

Researchers worldwide are searching for ways to stay ahead of these rapidly changing microbes. One promising strategy is not to invent a completely new antibiotic, but to help existing drugs work again. This is the idea behind antibiotic adjuvants, which are companion molecules that do not kill bacteria directly but instead restore the power of antibiotics.

Professor John Moses and his team at Cold Spring Harbor Laboratory (CSHL) have spent years developing chemical reactions that can make the drug discovery process faster and more efficient.

The researchers use a technique called diversity oriented clicking (DOC), which was created in the Moses laboratory. With this method, they have built a library containing more than 150 different compounds. Molecules from this collection have already

contributed to research on both antibiotic resistance and cancer.

Now, through a collaboration with Scripps Research, the library has helped scientists restore the effectiveness of vancomycin. This powerful antibiotic is commonly used against severe infections, including those caused by MRSA and Clostridium difficile (C. diff). Both pathogens can develop resistance and become "superbugs" that evade frontline drugs such as vancomycin. They can then spread through hospitals, nursing homes, and communities.

In the new study, scientists from the Moses laboratory at CSHL worked with Professor Howard Hang's team at Scripps to identify a way to make vancomycin effective again.

The researchers targeted a bacterial enzyme called secreted antigen A (SagA). They blocked the enzyme using a small molecule known as pghi-4, which

was first discovered in the Moses laboratory in 2020.

When drug-resistant E. faecium was treated with both vancomycin and pghi-4, the antibiotic regained its ability to kill the bacteria.

For Moses, one of the most notable parts of the finding is that the research did not begin as a direct search for a new antibiotic.

"This discovery came from fundamental chemical research," he explains. "Reaction development led to the discovery of the first inhibitor of an important enzyme involved in antibiotic resistance. This is a process we're constantly refining to both keep our library of molecules up to date and add more for collaborators to take advantage of in their research."

By making the molecular library

available to other researchers, the team hopes similar approaches could eventually lead to treatments for

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REPUBLIC OF THE PHILIPPINES
FOURTH JUDICIAL REGION
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
TRECE MARTIRES CITY

J.C.T. EZ LOAN CORPORATION,
Mortgagee,

FORECLOSURE CASE NO. F-387-26

-versus-

JOSEPHINE CAPORAL ESPINO,
Mortgagor.
X-----X

NOTICE OF EXTRA-JUDICIAL SALE

Upon Extra-Judicial Petition for Sale under Act 3135, as amended by Act 4118, filed by Petitioner/Mortgagee, **J.C.T. EZ LOAN CORPORATION**, with office address at Unit 4, 3rd Floor, Congressional Square, No. 26, Congressional Avenue, Brgy. Bahay Toro, Quezon City, against the Mortgagor, **JOSEPHINE CAPORAL ESPINO**, with postal addresses at (1) 6284 Kapt. Tinoy St., La Huerta, Parañaque City and (2) Blk. 16 Lot 2 Centro De Oro, Pasong Kawayan II, General Trias, Cavite, to satisfy the mortgage indebtedness which as of **May 25, 2026**, amounts to **FIVE HUNDRED EIGHTY ONE THOUSAND SEVEN HUNDRED TWENTY FIVE PESOS and 37/100 (Php581,725.37)**, Philippine Currency, inclusive of interests, penalties, legal fees and other charges as of said date but exclusive of all other charges incidental to this foreclosure and sale, the undersigned Sheriff will sell at public auction on **August 7, 2026** at 10:00 o'clock in the morning until 12:00 o'clock noon, at the main entrance of the Government Center Building located at the Provincial Capitol Compound, Trece Martires City, to the highest bidder for **CASH** and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE No. 057-2015027737

LOT NO. 2 BLOCK NO. 16 PLAN NO. Psd-04-224416
PORTION OF: Lot 3235, San Francisco de Malabon Estate RS-04-004047
LOCATION: Barangay of Pasong Kawayan II, Municipality of General Trias, Province of Cavite, Island of Luzon
BOUNDARIES:

LINE	DIRECTION	ADJOINING LOT (S)
1-2	SE	Lot 1, Block 16, Psd-04-224416
2-3	SW	Road Lot 15, Psd-04-224416
3-4	NW	Lot 3, Block 16, Psd-04-224416
4-5	NE	Lot 14, Block 16, Psd-04-224416
5-1	NE	Lot 15, Block 16, Psd-04-224416

AREA: ONE HUNDRED TEN SQUARE METERS (110), more or less

All sealed bids must be submitted to the undersigned on the above-stated time and date.

In the event the public auction should not take place on the said time and date, it shall be held on **August 20, 2026** without further notice.

Prospective bidders/buyers are hereby enjoined to investigate for themselves the title to the said property and encumbrances thereon, if any there be.

Trece Martires City, July 3, 2026.

(Sgd.) **REYNALDO L. SALOMA**
Sheriff IV

Copy furnished:

J.C.T. EZ LOAN CORPORATION
Unit-4, 3rd Floor Congressional Square
No. 26 Congressional Avenue, Bahay Toro, Quezon City

MS. JOSEPHINE C. ESPINO
(1) 6284 Kapt. Tinoy St., La Huerta, Parañaque City
(2) Blk. 16 Lot 2 Centro De Oro, Pasong Kawayan II, General Trias, Cavite

WARNING: It is absolutely prohibited to remove, deface or destroy this Notice of Extra Judicial Sale on or before the date of sale

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 6, 13 & 20, 2026

R.A. Form No. 10.1 (LCRO)
(Devised 18 Aug. 2001)

Republic of the Philippines
Local Civil Registry Office
Province: Cavite
City of: Cavite

JULY 6, 2026

NOTICE FOR PUBLICATION

In compliance with section 5 of R.A. No. 9048 a notice is hereby served to the public that **MERCEDITA B. BISENTE** has filed with this Office a petition for Change of First name from **"MERCEDES"** to **"MERCEDITA"** in the Birth Certificate of **MERCEDES VICENTE** who was born on **MARCH 22, 1951** in **CAVITE CITY, CAVITE** and whose parents are **FRANCISCO VICENTE** and **TEOFILA BAUTISTA**.

Any person adversely affected by said petition may file his written opposition with this Office.

(Sgd.) **FLORDELIZA M. ALEJO**
OIC-City Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 13 & 20, 2026


REPUBLIC OF THE PHILIPPINES
PROVINCE OF CAVITE
MUNICIPALITY OF MENDEZ-NUÑEZ
OFFICE OF THE MUNICIPAL CIVIL REGISTRAR

NOTICE TO THE PUBLIC

CCE-0029-2026 RA 10172 DATE : July 08, 2026

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guideline in the Implementation of the Administrative Order No. 1 Series of 2012 (IRR on RA 10172), Notice is hereby served to the public that **ESTELA FIDEL BORJA** has filed with this Office, a petition for **Correction of Clerical Error in Gender** from **MALE** to **FEMALE** in the Certificate of Live Birth of **ESTELA DELA CRUZ FIDEL** at Mendez, Cavite and whose parents are **FLORENCIO AVELLA FIDEL** and **CONCHITA LANUYBO DELA CRUZ**.

Any person adversely affected by said petition may file his written opposition with this office not later than **July 27, 2026**.

(Sgd.) **NOREN A. PEROLA**
Municipal Civil Registrar, OIC

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 13 & 20, 2026

(SCIENTISTS...from page 5)

additional drug-resistant reflects a philosophy of chemistry that's infections. These could of chemistry that's include resistant forms designed to accelerate of tuberculosis. drug discovery in its "This work purest form," says

RA Form No. 10.0 (LCRO)

Republic of the Philippines
Office of the Municipal Civil Registrar
Rosario, Cavite

NOTICE FOR PUBLICATION

CFN-0007-2026

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guidelines in the Implementation of the Administrative Order No 1 Series of 2012 (IRR on R.A. 10172). Notice is hereby served to the public that **GLORINA J. NARDO** has filed in this office, a petition for **Change of First Name** from **MARIA GLORIN** to **GLORINA** in the Certificate of Live Birth of **MARIA GLORIN BUHAIN JUNTURA** at Rosario, Cavite and whose parents are **RICARDO HEBREO JUNTURA** and **PURIFICACION SOLIS BUHAIN**.

Any person adversely affected by said petition may file his written opposition with this office not later than **03 August 2026**.

(Sgd.) **MARIA ROSARIO C. SORIANO**
Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 20 & 27, 2026

RA Form No. 10.0 (LCRO)

Republic of the Philippines
Office of the Municipal Civil Registrar
Rosario, Cavite

NOTICE FOR PUBLICATION

CFN-0008-2026

In compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1 Guidelines in the Implementation of the Administrative Order No. 1 Series of 2012 (IRR on R.A. 10172). Notice is hereby served to the public that **MA. NANNETH GALANO VASQUEZ** has filed in this office, a petition for **Change of First Name** from **MARIA NANNETH** to **MA. NANNETH** in the Certificate of Live Birth of **MARIA NANNETH BAUTISTA GALANO** at Rosario, Cavite and whose parents are **ANTERO GALANO** and **AMELIA ALBERTO BAUTISTA**.

Any person adversely affected by said petition may file his written opposition with this office not later than **03 August 2026**.

(Sgd.) **MARIA ROSARIO C. SORIANO**
Municipal Civil Registrar

Publication : DIYARYO KABITENYO News Publishing Service
Dates : July 20 & 27, 2026

Moses. "By using show that important reliable, robust, and medical advances may intelligent chemical come from rethinking reactions, we can the chemistry of drugs build new molecules that already exist. A more efficiently. That's future treatment may exactly the approach we begin not with a new used here." antibiotic, but with As antibiotic a carefully designed resistance grows around molecule that helps an the world, the findings old one work again.

Form 2B (Revised June 2014)

CAVITE UNITED RURAL BANK CORP
Name of Bank

PUBLISHED BALANCED SHEET
(Head Office and Branches)
As of June 30, 2026

CONTROL PROOFLIST

	Account Code	Current Quarter	Previous Quarter
Cash and Cash Items	108000000000000000	0.00	0.00
Due from Bangko Sentral ng Pilipinas	105150000000000000	0.00	0.00
Due from Other Banks	105200000000000000	297,064,130.52	297,179,879.96
Financial Assets at Fair Value through Profit or Loss	112000000000000000	0.00	0.00
Available-for-Sale Financial Assets-Net	195200000000000000	0.00	0.00
Held-to-Maturity (HTM) Financial Assets-Net	195250000000000000	0.00	4,598,935.42
Unquoted Debt Securities Classified as Loans-Net	195300000000000000	0.00	0.00
Investments in Non-Marketable Equity Security-Net	195350000000000000	0.00	0.00
Loans and Receivables - Net	195400000000000000	0.00	0.00
Other Financial Assets	148000000000000000	0.00	0.00
Equity Investment in Subsidiaries, Associates and Joint Ventures-Net	195452500000000000	0.00	0.00
Bank Premises, Furniture, Fixture and Equipment-Net	195500500000000000	0.00	0.00
Real and Other Properties Acquired-Net	195501000000000000	4,311,402.75	4,311,402.75
Non-Current Assets Held for Sale	150150000000000000	0.00	0.00
Other Assets-Net	152000000000000000	1,233,243.17	1,225,713.17
Net Due from Head Office/Branches/Agencies, if any (Phil. branch of a foreign bank)	155250000000000000	0.00	0.00
TOTAL ASSETS	100000000000000000	302,608,776.44	307,315,931.30
Financial Liabilities at Fair Value through Profit or Loss	208000000000000000	0.00	0.00
Deposit Liabilities	215000000000000000	0.00	0.00
Due to Other Banks	220050000000000000	0.00	0.00
Bills Payable	220100000000000000	0.00	0.00
Bonds Payable-Net	295201500000000000	0.00	0.00
Unsecured Subordinated Debt-Net	295202000000000000	0.00	0.00
Redeemable Preferred Shares	220250000000000000	0.00	0.00
Special Time Deposit	220300000000000000	0.00	0.00
Due to Bangko Sentral ng Pilipinas	230350000000000000	0.00	0.00
Other Financial Liabilities	240050000000000000	0.00	0.00
Other Liabilities	240100000000000000	11,958,654.17	10,207,306.41
Net Due to Head Office/Branches/Agencies (Philippine branch of a foreign bank)	230850000000000000	0.00	0.00
TOTAL LIABILITIES	200000000000000000	11,958,654.17	10,207,306.41
TOTAL STOCKHOLDERS' EQUITY	300000000000000000	290,650,122.27	297,108,624.89
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	905000000000000000	302,608,776.44	307,315,931.30
TOTAL CONTINGENT ACCOUNTS	400000000000000000	152.00	152.00
ADDITIONAL INFORMATION			
Gross total loan portfolio (TLP)	499020000000000000	0.00	0.00
Specific allowance for credit losses on the TLP	499300000000000000	0.00	0.00
Non-Performing Loans (NPLs)			
a. Gross NPLs	499100500000000000	0.00	0.00
b. Ratio of gross NPLs to gross TLP (%)	499150500000000000	0.00	0.00
c. Net NPLs	499101000000000000	0.00	0.00
d. Ratio of Net NPLs to gross TLP (%)	499151000000000000	0.00	0.00
e. Ratio of total allowance for credit losses to gross NPLs (%)	499151500000000000	0.00	0.00
f. Ratio of specific allowance for credit losses on the gross TLP to gross NPLs (%)	499152000000000000	0.00	0.00
Capital Adequacy Ratio (CAR) on Solo Basis, as prescribed under existing regulations			
a. Total CAR (%)	499650500500000000	78.21	80.16
b. Tier 1 Ratio (%)	499650501000000000	78.21	80.16
c. Common Tier 1 Ratio (%) ^{1/}	499650501500000000	78.21	80.16

1/ Common Equity Tier 1 is only applicable to all Universal and Commercial Banks and their subsidiary banks.

I hereby certify that all matters set forth in this Published Balance Sheet are true and correct to the best of my knowledge and belief.


ZENAIDA S. LIBREA
(Authorized Signatory)

PBS_Solo Balance Sheet (Head Office and Branches) - Solo

Bank Name : Imus Rural Bank, Inc.
Reference Period: June 30, 2026

ASSETS

ASSETS	Account Code		Amount	
			Current Quarter C0010	Previous Quarter C0020
Cash and Cash Items	108000000000000000	R0010	12,431,673.57	14,795,199.48
Due from Bangko Sentral ng Pilipinas	105150000000000000	R0020	4,699,601.49	4,860,876.92
Due from Other Central Banks and Banks - Net	105220000000000000	R0030	280,749,880.01	317,493,376.71
Financial Assets at Fair Value through Profit or Loss (FVPL) 1/	113000000000000000	R0040	-	-
Financial Assets at Fair Value Through Other Comprehensive Income (FVOCI) - Net	195210000000000000	R0050	-	-
Debt Securities at Amortized Cost - Net	195241000000000000	R0060	447,340,729.29	413,758,437.82
Loans to Bangko Sentral ng Pilipinas	140050000000000000	R0080	-	-
Interbank Loans	140100000000000000	R0090	-	-
Receivable	140150300000000000	R0100	592,682,357.55	579,563,809.43
Loans and Receivables - Others	140200000000000000	R0110	-	-
Loans and Receivables Arising from RA/CA/PR/SLB	499020000000000000	R0120	592,682,357.55	579,563,809.43
Total Loan Portfolio (TLP) - Gross	499350000000000000	R0130	36,727,828.38	36,727,828.38
Allowance for Credit Losses 2/	195400000000000000	R0070	555,954,529.17	542,835,981.05
Equity Investment in Subsidiaries, Associates and Joint Ventures - Net	195452500000000000	R0140	-	-
Bank Premises, Furniture, Fixture and Equipment - Net	195500500000000000	R0150	9,778,658.80	10,007,447.54
Real and Other Properties Acquired - Net	195501000000000000	R0160	21,545,956.60	22,727,008.51
Sales Contract Receivables - Net	195451500000000000	R0170	-	-
Non-Current Assets Held for Sale	150150000000000000	R0180	-	-
Other Assets - Net	152500000000000000	R0190	24,201,096.87	23,883,698.83
Net Due from Head Office/Branches/Agencies (Philippine branch of a foreign bank)	155250000000000000	R0200	-	-
TOTAL ASSETS	100000000000000000	R0210	1,356,702,125.80	1,350,362,026.86

Liabilities and Stockholders' Equity

	Account Code		Amount	
			Current Quarter C0010	Previous Quarter C0020
Liabilities				
Financial Liabilities at Fair Value through Profit or Loss (FVPL) 3/	208000000000000000	R0010	-	-
Deposit Liabilities	215000000000000000	R0020	1,081,088,842.62	1,083,668,592.99
Due to Other Banks	220050000000000000	R0030	-	-
Bills Payable	220100000000000000	R0040	-	-
BSP (Rediscounting and Other Advances)	220100001500000000	R0050	-	-
Interbank Loans Payable	220100002000000000	R0060	-	-
Other Borrowings, including Deposit Substitutes	220100003500000000	R0070	-	-
Bonds Payable-Net	295201500000000000	R0090	-	-
Unsecured Subordinated Debt - Net	295202000000000000	R0100	-	-
Redeemable Preferred Shares	220250000000000000	R0110	-	-
Other Liabilities	240200000000000000	R0120	23,478,424.07	20,569,307.83
Net Due to Head Office/Branches/Agencies (Philippine branch of a foreign bank)	230850000000000000	R0130	-	-
TOTAL LIABILITIES	200000000000000000	R0140	1,104,567,266.69	1,104,237,900.81
Stockholders' Equity				
Capital Stock	305000000000000000	R0150	99,950,200.00	99,950,200.00
Additional Paid-In Capital	305200000000000000	R0160	-	-
Undivided Profits	315150000000000000	R0220	6,151,736.58	296,758.52
Retained Earnings	315000000000000000	R0170	146,032,922.53	145,877,167.53
Other Capital Accounts	335200000000000000	R0180	-	-
Assigned Capital	325200000000000000	R0190	-	-
TOTAL STOCKHOLDERS' EQUITY	300000000000000000	R0200	252,134,859.11	246,124,126.05
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	905000000000000000	R0210	1,356,702,125.80	1,350,362,026.86

Contingent Accounts

CONTINGENT ACCOUNTS	Account Code		Amount	
			Current Quarter C0010	Previous Quarter C0020
Guarantees Issued	405000000000000000	R0010		
Financial Standby Letters of Credit	410050000000000000	R0020		
Performance Standby Letters of Credit	410100000000000000	R0030		
Commercial Letters of Credit	415000000000000000	R0040		
Trade Related Guarantees	420000000000000000	R0050		
Commitments	425000000000000000	R0060		
Spot Foreign Exchange Contracts	430000000000000000	R0070		
Securities Held Under Custodianship by Bank	495220000000000000	R0080		
Prorated Trust Department Accounts	495250000000000000	R0090		
Derivatives	435000000000000000	R0100		
Others	440000000000000000	R0110		
TOTAL CONTINGENT ACCOUNTS	400000000000000000	R0120		

FINANCIAL INDICATORS (in %)

FINANCIAL INDICATORS (in %)	Account Code		Amount	
			Current Quarter C0010	Previous Quarter C0020
ASSET QUALITY				
Gross Non-Performing Loans (NPL) Ratio	499150500000000000	R0010	3.07%	2.57%
Net NPL Ratio	499151000000000000	R0020	1.53%	1.13%
Gross NPL Coverage Ratio	499152500000000000	R0030	201.88%	246.71%
Net NPL Coverage Ratio	499153000000000000	R0040	172.85%	211.73%
RELATED PARTY TRANSACTIONS				
Ratio of Loans to Related Parties to gross TLP	499401000000000000	R0060	0.00	0.00
Ratio of Non-Performing Loans to Related Parties to Total Loans to Related Parties	499401500000000000	R0070	0.00	0.00
Ratio of DOSRI Loans to gross TLP	499451000000000000	R0090	1.14%	1.19%
Ratio of Non-Performing DOSRI Loans to Total Loans to DOSRI	499451500000000000	R0100	0.00	0.00
LIQUIDITY				
Liquidity Coverage Ratio 4/	499550500000000000	R0110	0.00	0.00
Net Stable Funding Ratio 4/	499551000000000000	R0120	0.00	0.00
Minimum Liquidity Ratio 5/	499551500000000000	R0130	77.32%	78.07%
PROFITABILITY				
Return on Equity (ROE)	499350000000000000	R0140	4.92%	0.48%
Return on Assets	499351000000000000	R0150	0.96%	0.09%
Net Interest Margin	499351500000000000	R0160	4.50%	3.87%
CAPITAL ADEQUACY				
Common Equity Tier 1 Ratio	499650501500000000	R0170	27.59	26.05
Tier 1 Capital Ratio	499650501000000000	R0180	27.59	26.05
CAR	499650500500000000	R0190	28.18	26.61
LEVERAGE				
Basel III Leverage Ratio 4/	499850000000000000	R0200	0.00	0.00
Deferred Charges not yet Written Down	499700000000000000	R0210	0.00	0.00

1/ This account is comprised of Financial Assets Held for Trading (HFT), Debt Securities Designated at FVPL, and Other Financial Assets

Signature :

ROBERTO V. DE GUZMAN
MANAGER

Publication : DIYARYO KABITENYO News Publishing Service
Date : July 20-26, 2026

Scientists detect hidden skin damage before it becomes visible

An international research team led by Hiroshima University has developed a technique that can reveal extremely early changes in human skin collagen, long before the damage becomes visible under conventional imaging. molecules assemble into larger bundles, which then form the fibers that support the skin. Because of this layered arrangement, collagen is described as a hierarchical material. Most traditional imaging methods focus on visible features of that network. They can detect fibers that have thinned, broken apart, or lost their connections. However, those changes tend to appear relatively late in the remodeling process. The new research indicates that collagen can lose its underlying structural order while the visible fiber network still looks largely unchanged.

The findings, published in ACS Nano on July 16, 2026, suggest that collagen begins losing its precise molecular organization before its fibers become thinner, fragmented, or disconnected. In other words, skin tissue may appear structurally intact even after important changes have already begun at a deeper level. Haider, first author of the study and a graduate research fellow at Hiroshima University's International Institute for Sustainability with Knotted Chiral Meta Matter (WPI-SKCM2). "It's similar to detecting changes in the arrangement of words and sentences in a book before any pages appear damaged or missing." To identify these hidden changes, the researchers combined advanced optical imaging with chiroptical spectroscopy. Chiroptical methods examine how molecules interact with polarized light. They are especially useful for studying chirality, a property sometimes described as structural handedness. Much like a person's left and right hands mirror one another but cannot be perfectly superimposed, many biological structures have a preferred orientation. Collagen has this kind of organized handedness at both the molecular and larger structural levels. When that organization begins to deteriorate, the tissue may lose important functional properties even if its overall amount of collagen remains unchanged. The team used synchrotron radiation vacuum-ultraviolet circular dichroism (SR-VUVCD) and multi-dimensional quantum cascade laser vibrational circular dichroism (MultiD-QCL-VCD). By combining these methods with imaging, the researchers were able to measure collagen abundance and structural coherence within the same section of tissue.

Collagen is the main structural protein in skin. It forms an intricate network that helps tissue remain strong, flexible, and resistant to physical stress. Its structure is organized across several scales. Individual collagen molecules assemble into larger bundles, which then form the fibers that support the skin. Because of this layered arrangement, collagen is described as a hierarchical material. Most traditional imaging methods focus on visible features of that network. They can detect fibers that have thinned, broken apart, or lost their connections. However, those changes tend to appear relatively late in the remodeling process. The new research indicates that collagen can lose its underlying structural order while the visible fiber network still looks largely unchanged. "One way to think about our findings is that conventional imaging methods can show the 'bricks' of a collagen structure, but they may miss subtle changes in how those bricks are arranged," said Ali Haider, first author of the study and a graduate research fellow at Hiroshima University's International Institute for Sustainability with Knotted Chiral Meta Matter (WPI-SKCM2). "It's similar to detecting changes in the arrangement of words and sentences in a book before any pages appear damaged or missing." To identify these hidden changes, the researchers combined advanced optical imaging with chiroptical spectroscopy. Chiroptical methods examine how molecules interact with polarized light. They are especially useful for studying chirality, a property sometimes described as structural handedness. Much like a person's left and right hands mirror one another but cannot be perfectly superimposed, many biological structures have a preferred orientation. Collagen has this kind of organized handedness at both the molecular and larger structural levels. When that organization begins to deteriorate, the tissue may lose important functional properties even if its overall amount of collagen remains unchanged. The team used synchrotron radiation vacuum-ultraviolet circular dichroism (SR-VUVCD) and multi-dimensional quantum cascade laser vibrational circular dichroism (MultiD-QCL-VCD). By combining these methods with imaging, the researchers were able to measure collagen abundance and structural coherence within the same section of tissue. The analysis revealed a clear separation between the quantity of collagen and the quality of its organization. The tissue samples maintained much of their total collagen content and surface coverage, even after the coherence of their supramolecular chirality had deteriorated substantially. This means that measuring only how much collagen is present may provide an incomplete picture of tissue health. A sample can still contain abundant collagen while the protein's internal architecture is already breaking down. "The key message of this paper is that collagen should not be viewed only as a visible fiber network but as a hierarchical material whose function depends on organization across multiple length scales," said Katsuya Inoue, a professor at WPI-SKCM2 who is one of the study's corresponding authors. "Our study shows that advanced correlative methods can reveal changes in this hidden organization that are not apparent from morphology alone." The researchers ultimately hope to build a broader framework that connects molecular chirality, supramolecular organization, and the large scale architecture of tissue. Such a system could help scientists evaluate tissue integrity before major structural damage becomes irreversible. It may also offer new insights into wound healing, medical treatments, and the design of biomaterials that imitate or interact with biological tissue. Rather than waiting until collagen fibers visibly thin or fragment, future researchers may be able to identify the earliest warning signs by examining how the molecules are arranged.

Unprecedented molecular map details how influenza A hijacks human cells

Researchers at EMBL Hamburg, collaborating with scientists at the Leibniz Research Institute for Molecular Pharmacology (FMP), have produced an unusually detailed molecular map revealing how influenza A reshapes infected human cells by utilizing a customized workflow that observes protein interactions directly inside intact cells rather than relying on broken-apart samples, a significant advancement given that seasonal influenza causes 3-5 million severe illness cases and up to 650,000 deaths annually while Influenza A has also driven pandemics like the 1918 Spanish Flu.

After the virus enters a cell and releases RNA to redirect molecular systems, this new study marks the first large-scale mapping of direct contacts between influenza and human proteins inside intact infected cells with structural precision sufficient to model

how these proteins fit together. Jan Kosinski, Group Leader at EMBL Hamburg and Centre for Structural Systems Biology (CSSB), noted, "Our work provides a new way to study flu-host interactions in their native context and with structural insight," adding that "The current results are a snapshot of a moment during infection, and it opens the door to studying flu-host interactions across the entire infection cycle."

This breakthrough was necessary because tracking protein-protein interactions during active infection is extremely difficult; many earlier studies depended on biochemical techniques requiring cells to be broken open, a process that can distort reality by allowing separated proteins to contact each other in the lab while causing weak or location-specific interactions to disappear. The team overcame this when they learned that collaborators

Boris Bogdanow and Fan Liu at FMP Berlin had developed a specialized version of cross-linking mass spectrometry (XL-MS) tailored for virus-infected cells. Bogdanow, now a Junior Research Group Leader at the Institute of Virology, Charité -- Universitätsmedizin Berlin, explained, "XL-MS allows us to capture protein-protein interactions directly in infected intact cells, while also providing structural information about how these interactions are happening," which "gives us insight into the interface between the virus and the human cell and may, through structural modeling, help identify actionable targets for future pharmaceutical interventions."

By pairing these XL-MS results with computational structural modeling using a modified version of the Nobel prize-winning AlphaFold algorithm, Kosinski highlighted that "The key

advantage of the modified AlphaFold approach is that it allowed us to feed our experimental cross-linking data directly into the structural modeling," which "tells the model which parts of the viral and host proteins are close to each other inside infected cells. This was especially useful for virus-host complexes, which are often difficult to predict reliably."

Published in Nature Microbiology, the findings revealed two strategies influenza A uses to take control: first, the virus utilizes hemagglutinin to attach and enter host cells, relying on human proteins to fold and modify it correctly within the cell's transport network; second, the infection causes paraspeckles, small droplet-like compartments in the nucleus, to dissolve, releasing RNA-binding proteins the virus may use for replication. Iuliia Kotova, former predoctoral fellow at the Kosinski Group and first author, stated, "What

surprised us most was the paraspeckles," observing that "Watching these tiny organelles in the nucleus dissolve, consistently across every cell line and every flu strain we tested, told us this isn't a side effect of infection -- it might be a strategy."

Kosinski added that disrupting paraspeckles may offer a second benefit: "There may also be a second benefit for the virus: some evidence suggests paraspeckles contribute to cellular stress responses and antiviral gene regulation, so disrupting them could also weaken parts of the cell's defense response."

The project leveraged shared technology across three institutions, including cross-linking mass spectrometry at Charité, glycoproteomics at EMBL, AlphaFold modeling on the EMBL Compute Cluster, and microscopy at CSSB's ALFM Facility. Demonstrating how studying molecular contacts inside intact

cells reveals viral control mechanisms, Kosinski concluded, "While the exact host factors and mechanisms often differ from virus to virus, we think our overall approach -- combining in-cell cross-linking, structural modeling, and targeted cell-biology follow-up to map native virus-host interactions at specific stages of infection -- remains broadly applicable."

Although the study focused on a laboratory-adapted strain, the researchers believe this methodology can eventually investigate viruses with greater pandemic potential, a sentiment Bogdanow echoed: "Although this study has focused on a lab-adapted strain, this study lays the groundwork to apply the methodology to viruses of potential pandemic relevance, such as H5N1, and for uncovering the interaction networks that support their multiplication in human cells."

Coffee may protect your heart but energy drinks could harm it

Coffee may protect your heart but energy drinks could harm it in the scientific statement "Caffeine and Cardiovascular Disease." Understanding exactly how caffeine affects the cardiovascular system is difficult. Coffee is the main source of caffeine in most studies, but coffee contains many other substances that could influence health. Experimental research suggests that some bioactive compounds in coffee have antioxidant and anti-inflammatory properties, which may contribute to its possible benefits. It is also hard to distinguish the effects of caffeine from those of ingredients commonly added to coffee, including milk, cream, flavored syrups and/or sugar. Most caffeine research is observational as well, which means it can identify associations but cannot establish cause and effect. Coffee is not the only source of caffeine. Tea, chocolate, soda and energy drinks, as well as over-the-counter and prescription medications, can all add to a person's daily intake. Researchers say more studies are needed to clarify the caffeine content and cardiovascular effects of these other products. The new statement reviews recent evidence about caffeinated coffee and its possible relationships with high blood pressure, cholesterol, Type 2 diabetes, coronary heart disease, stroke, heart failure, atrial fibrillation, other arrhythmias and other cardiovascular conditions. Based on the latest studies included in the review, up to 400 mg of caffeine per day is considered safe for most adults. That amount is roughly equal to no more than 3 to 5, 8-ounce cups of regular black caffeinated coffee per day (without sugars, sweeteners, flavors or added fillers). Regular brewed, non-specialty, caffeinated coffee usually contains 9.4-20.6 mg of caffeine per fluid ounce. Drinking caffeinated coffee without added sugars, flavors, or cream was associated with lower risks of Type 2 diabetes, heart disease, stroke, heart failure, and some irregular heart rhythms. Randomized trials, which are considered the most rigorous and reliable study design, have linked caffeine from coffee to a lower risk of atrial fibrillation. However, the same research also connected it with a higher risk of premature ventricular contractions. Adding sugar, flavored syrups, milk and/or cream may weaken coffee's potential health benefits. Researchers say more work is needed to determine exactly how these additions affect health outcomes. High caffeine intake may pose greater risks. Levels commonly found in energy drinks, including energy shots, were associated with high blood pressure and irregular heart rhythm. Energy drink shots may contain 40-69 mg of caffeine per fluid ounce, 3-4 times more caffeine than regular caffeinated coffee. After caffeine from coffee enters the body, it is processed by the liver and usually reaches its highest concentration within about an hour. The speed at which this happens varies according to genetics, metabolism, age, and previous caffeine use. People who regularly consume larger amounts of caffeinated coffee may gradually develop a tolerance. Others can experience strong effects from much smaller amounts. In the short term, caffeine may temporarily increase blood pressure, heart rate, blood sugar and alertness.

reported watching television "very often" during their free time subsequently exhibited smaller volumes in memory-related brain regions, reduced frontal and occipital lobe size, and increased white matter damage—structural changes linked to aging, stroke risk, and cognitive decline.

Crucially, these findings persisted

While the study noted limitations, including self-reported TV habits and the lack of baseline MRI scans, it highlighted a significant sex difference, with most observed brain changes appearing in men, leading researchers to suggest that future health guidelines should move beyond generic advice to

and Evolutionary Biology program at USC Dornsife, who states, "We frequently encourage the public not to spend too much time sitting down, but experts may want to expand that recommendation to encompass the activities done while sitting, since those seem to have distinct impacts on brain health."