

The SENTRY

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LOCAL NEWS...

BSO makes 2nd arrest in Pompano Beach Homicide

Two Pompano Beach men are facing murder and attempted murder charges for their roles in a fatal shooting that occurred in February 2021.

At approximately 12:35 a.m. on Sunday, Feb. 28, 2021, Broward County Regional Communications received a call regarding a shooting in the 2400 block of Northeast Sixth Avenue in Pompano Beach. BSO deputies responded and found a man, Sergio Barbosa, and a woman suffering from gunshot wounds. Pompano Beach Fire Rescue transported both victims to a nearby hospital, where Barbosa was pronounced deceased. The woman survived her injuries.

BSO's Homicide and Crime Scene units responded to the scene.

The investigation revealed that two gunmen, Alfredo Blue and Chad Sanford, approached the victims, who were outside near a vehicle. Sanford began struggling with Barbosa, and Blue began struggling with the woman. According to detectives, the woman and Blue were known to one another. The woman managed to get into a car and begin driving before she was shot by Blue. She then crashed the vehicle.

During the other struggle, Sanford threw Barbosa to the ground, and Sanford and Blue then shot him multiple times.

On March 8, 2021, members of BSO's V.I.P.E.R. Unit arrested Blue for murder and attempted murder. Following a lengthy investigation, this past Thursday, April 11, BSO detectives arrested Sanford on the same charges.

Both men are in custody at the Broward County Main Jail.

Telephone scam resurfaces

Scammers are always looking for ways to separate victims from their money.

In recent days, a recurring scam using the good name of the Broward Sheriff's Office has resurfaced, and detectives are warning residents to be on the lookout.

The scam works like this — an unwitting victim receives a call from someone claiming to be a BSO employee in the agency's Civil Division. The scammer tells the victim they missed a court date and a warrant was issued for their arrest.

In order to put the arrest warrant on hold or get rid of it altogether, the victim must pay up either with cash or through a payment app. BSO wants the public to know this is a scam, and neither BSO nor any law enforcement agency will ever call you and ask for money.

Sadly, this scam is not new. In fact, BSO educated the public on this issue in August 2023. There is also a version of this scam where scammers claimed to be BSO employees at the Broward County courthouse.

In these cases, the scammers often use the names of real BSO employees. But the public should not be fooled — if you get a call like this, immediately hang up the call and contact law enforcement.

BSO will never demand money or personal information, bond money or any form of payment. If you receive this type of call, do not provide any personal information or money.

Instead, hang up the call and report it to the law enforcement agency in the jurisdiction where you live. If you live in a BSO jurisdiction, call BSO's non-emergency number 954-764-HELPS (4357).

Animal cruelty case investigated

The Broward Sheriff's Office Special Victims Unit is asking for the public's help to locate a subject believed to be involved in a case of animal cruelty.

According to investigators, on Monday, April 22, BSO detectives in unincorporated Central Broward near Fort Lauderdale responded to the 300 block of Northwest 28th Terrace following the discovery of a deceased known stray cat with bite marks.

The investigation revealed that surveillance video recorded the evening before, April 21, showed a subject tossing an item at a cat on top of a car, encouraging the cat to jump down.

The cat did jump down, and at that point, two dogs began chasing the cat. Hours later, the cat was

Florida joins several states law suits over Title IX

Florida Attorney General Ashley Moody announced Monday that the state of Florida is suing the Biden Administration by challenging the administration's new Title IX rule.

The state joins other states, including Texas, Louisiana, Wyoming, South Carolina and Oklahoma in their efforts to protect women's sports from men who identify as women, but have the mass and strength of the male body they were born with.

The Biden administration explains "The final rule protects all students and employees from all sex discrimination prohibited under Title IX, including by restoring and strengthening full protection from sexual violence and other sex-based harassment." The Biden Administration noted on April 19, the U.S. Department of Education released its final rule to fully put into effect Title IX's promise that no person experiences sex discrimination in federally funded education.

A growing number of Republican-led states have pledged to reject the Title IX rules finalized this month by the Department of Education.

"I am instructing the Texas Education Agency to ignore your illegal dictate," Abbott continued. "Your rewrite of Title IX not only exceeds your constitutional authority, it also tramples laws that I signed to protect the integrity of women's sports by prohibiting men from competing against female athletes. Texas will fight to protect those laws and to deny your abuse of authority."

Gov. Ron DeSantis has stated Florida will not comply with the new requirements in Title IX. A growing number of Republican-led states have pledged to reject the Title IX rules finalized this month by the Education Department.

Laws passed in more than a dozen Republican-led states prevent transgender students from using school restrooms and locker rooms that do not match their gender identity or ban teachers and students to disregard a transgender person's name and pronouns. Adhering to such laws may violate the new Title IX regulations, a senior administration official said, if doing so creates a hostile environment.

Florida argues that the new definition weakens protections for women. The Biden Administration argues that the revision provides an education free from sex discrimination.

The new federal rules mean LGBTQ students can use bathrooms and lockers that align with their gender identity, and go to prom with the date of their choice.

Title IX rules initially were put in place to ensure women would be allowed to play on sports teams at American universities and colleges. The rules took effect in the 1970s and applied to any school that received federal funding.

Stetson Law professor Peter Lake said what comes next is uncertain.

Will the Biden administration actually stand on what's known as



ATLANTA AMPIGN

"We will not comply, and we will fight back."

Governor DeSantis said last week that Florida "will not comply" with the Biden administration's new Title IX mandates.

"We are not gonna let Joe Biden try to inject men into women's activities," DeSantis continued. "We are not gonna let Joe Biden abuse his constitutional authority to try to impose these policies on us here in Florida."

The federal mandates for transgender protection take effect in August, permitting males identifying as female to participate in women's sports.

DeSantis' stand against LGBTQ advocacy has irked many in that community fostering boycotts for Florida. His past actions, including the so-called "Don't Say Gay" law that restricts discussion of LGBTQ topics in Florida public schools was the beginning of the gay community's attention to the sunshine state.

Florida Attorney General Ashley Moody is also raising against the new rules, claiming they shed protections for women and calling the move a betrayal by the White House. She promised to challenge the new regulations in court.

Florida is not alone in their stand against LGBTQ. Louisiana, Oklahoma have already taken action to thwart gay activism in their schools.

John Harris Maurer, Equality Florida's public policy director, has taken an alternative stand, saying in an emailed statement last week that DeSantis "cannot ignore federal protections designed to safeguard students and families, including LGBTQ students, survivors of sexual assault and harassment, and pregnant students."

"As a condition of receiving federal funds, all federally funded schools are obligated to comply with these final regulations and we look forward to working with school communities all across the country to ensure the Title IX guarantee of nondiscrimination in school is every student's experience" he said.

In a memo dated Thursday,

a nuclear option and deny federal funding to schools or systems that fail to comply with federal mandates? That would be a highly unusual maneuver, to say the least. But it does look like we're going to a potential standoff between the federal and state governments." But if they don't follow state mandates, administrators' and teachers' jobs could be on the line.

Florida's commissioner of education, Manny Diaz Jr., told school leaders that Florida "will fight" the changes to Title IX.

"Instead of implementing Congress's clear directive to prevent discrimination based on biological sex, the Biden Administration maims the statute beyond recognition in an attempt to gaslight the country."

try into believing that biological sex no longer has any meaning," Diaz's memo read.

Education in Florida is taking the main stage as Governor DeSantis said that any anti-Israel protesters on Florida college campuses could face expulsion for any harassing, offensive or belligerent behavior, Ivy League schools like Columbia University, Harvard and Yale have all faced pro-Palestinian protesters overtaking their campuses with encampments and intimidation towards the Jewish population. Schools like Texas, USC and the University of Minnesota have also faced challenges, with Texas and USC having more than 100 people arrested, collectively, between the two last weeks.

DeSantis told a group of people at a "Strengthening Florida" event Thursday that pro-Palestinian demonstrators are "taking over bridges, and they're taking over roads." "First of all, you don't have a right to do that," DeSantis said, adding that if someone in a medical emergency who needed to get to a hospital might get stuck in unwaranteed traffic at an inopportune time.

"Someone may need to pick up a child somewhere, and you're just going to commandeer the road because you have this [ideology]," the governor recounted when a similar group tried to do that in Miami, and "in 10 minutes they got dragged off the road where they belong."

"We're not going to tolerate that," DeSantis said, which was followed by a room full of applause. "And you know what? The minute people start to face consequences, you are not going to see this nonsense going on."

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ANYONE WITH INFORMATION ABOUT THE IDENTITY OR LOCATION OF THE SUSPECT AND/OR DOGS SHOWN ABOVE IS ASKED TO CALL CRIME STOPPERS. WE DO NOT WANT YOUR NAME, JUST YOUR INFORMATION!

CALL (954) 493-TIPS (8477) www.browardcrimestoppers.org

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CENTS

Broward man arrested for fatal crash

Broward Sheriff's Office Traffic Homicide Unit detectives arrested Kenroy Jackson Jr., the driver involved in a street takeover and fatal crash on Sunday, April 28 in Pompano Beach.

Shortly after 12:30 a.m., BSO Traffic Homicide Unit detectives responded to the 1500 block of North Andrews Avenue in reference to a fatal crash involving the driver of a vehicle and a bicyclist.

According to investigators, prior to the crash, BSO deputies received a report of a street takeover and were dispatched to the intersection of McNab Road and Andrews Avenue. Upon responding to the incident, a marked BSO K9 vehicle was struck by Kenroy Jackson Jr., who was driving a 2017 Mercedes C300 coupe.

Jackson Jr. then fled the scene northbound on Andrews Avenue. Detectives say Jackson lost control of the vehicle while attempting to negotiate a curve in the roadway.

The vehicle rotated clockwise and slid over the pavement towards the bicycle lane and sidewalk.

As Jackson lost control of his vehicle, Eric Gray was riding his bicycle traveling southbound in the bicycle lane of northbound

Andrews Avenue approaching Northwest 15th Avenue.

The preliminary investigation revealed that the rear driver's side of the vehicle struck the front of the bicycle.

The bicycle and Gray were projected northbound while the vehicle continued sliding north before rolling west backwards over the median. The vehicle came to a final stop on the median, while the bicycle

laid facing east, while the bicycle and Gray came to rest in the northbound lanes of Andrews Avenue.

Investigators say prior to the crash, deputies lost sight of the vehicle and came upon the crash scene after the fact.

Jackson attempted to flee the crash scene on foot but was taken into custody by responding deputies.

Pompano Beach Fire Rescue responded to the crash. Paramedics pronounced Gray deceased on scene. Jackson was booked into the BSO Main Jail.

He faces several charges including aggravated fleeing with serious injury or death, aggravated battery on an officer, reckless driving causing serious bodily injury and participation in unlawful race. Additional charges may be pending.

The investigation is ongoing.

Pedestrian killed in deputy-involved crash

Broward Sheriff's Office Traffic Homicide Unit detectives are investigating a deputy-involved crash that killed a pedestrian on Saturday, April 27 in Pompano Beach.

Shortly after 5:32 a.m. that morning, BSO deputies responded to a deputy-involved crash near the 1500 block of Dr. Martin Luther King Boulevard.

Pompano Beach Fire Rescue also responded. The preliminary investigation reveals that an on-duty deputy struck a pedestrian, Jamil Moreland.

The on-scene investigation revealed the deputy was responding to a lewd and lascivious report near North Powerline Road.

The deputy was traveling westbound on Dr. Martin Luther King

Boulevard in the left thru lane after proceeding through the intersection of Northwest 15th Avenue.

According to investigators, at the same time, Moreland was laying or in a crunched position in the roadway when the deputy's vehicle struck him within the left thru lane. The deputy came to a controlled stop and reported the crash. Emergency personnel pronounced Moreland deceased.

Investigators later confirmed the pedestrian was the individual related to the call for service the deputy was responding to. No other injuries reported.

According to investigators, driver impairment, excessive speed, and mechanical malfunction are not considered to be contributing factors in this crash at this time. The investigation continues.

Six man football in Pompano

(This is a portion of a story about Pompano High School of years gone by.)

The 1941 football season saw Pompano go undefeated with one tie in the Southeastern conference (six-man competition) and this was the last time many of the players would ever play football again as world war II began and some left, never to return. It is fitting I think to briefly recount that season of so long ago.

On October 9, we played Jupiter there and defeated them 66-27. This was the first game I ever played in and it was nearly the last. I was the right end and the play was an end around reverse.

To hand the ball off to either end coming around and fake to the other. At the "hike" (not called snaps then) of the ball I, along with the left end (Cecil Miller,) instead of passing each other we collided head-on, knocking both of us silly.

So much for my participation in the rest of that game. The next game was with Everglades city, (a long trip) defeating them 40-0.

The first home game of that season was against Moore-Haven, game time 3:30 PM (Never played any conference night games) score, 45-6. The outstanding player of that game was Doyle Alderman, halfback who carried the ball

seventy yards for a touchdown.

The second home game of that season was against Clewiston, they were beaten 47-18.

We traveled up to Eau-Gallie on October 31 who up until this time also were undefeated.

They led Pompano 13-6 up until the last final seconds of the game when Billy Mc Clellan recovered a fumble on our fifteen yard line and ran for a touchdown.

The extra point was good and the game ended in a 13-13 tie.

Eau-Gallie had several good Japanese descended players and their coach Carmichael, as tough as an unforgiving pasture, (could have been called "cow-pasture football" I suppose.) We always had to take a shower after playing there.

November 7 Pompano routed Jupiter for the second time by a score of 52-7.

The game was automatically stopped when our lead reached 45 points. (That rule should be re-instated today.)

On November 14 we again met and defeated

Moore-Haven by the score of 47-6

Clewiston was again defeated on November 21 by the score of 63-14. The final game of the 1941 season was with Eau-Gallie who tied us in our first meeting. They were defeated by the score of 21-7, and giving us an undefeated season. Coach Carmichael, as tough as an unforgiving pasture, he was has to be commended for the football and basketball teams he produced in the early days of competitive

Pompano Pioneers by Bud Garner

sports in Pompano high school.

Some of the seniors playing in this undefeated season was, Forrest Coe, half back, Billy Mc Clellan Half back, Harold Kerchival end, half back, Marion Fugate center, Dwight Miller end, Doyle Alderman Half back, and H.C. Rowlett Quarter back and captain of the team.

Trying to name all of the people that played six-man football in Pompano would be impossible but here are a few of them that come to mind with no one being intentionally omitted. In addition to those already mentioned they are, B.Sam Walton, Revis Mickler, Cliff Dew, Martin Reagan, Carlie Johnson, Bobby Mc Clellan, Clinton Lyons, Bud Garner, Oscar Johnson, James Mulkey, Brack Hogan, Cecil Miller, Robert Mitchell, Doug Allen, Hubert Helton, Billy Smith, Art Robinson, John Bill Johnson, Bill Cheshire, Bill Orgs, Bill Sanders, Billy Allis and Jim Hooten.

Six-man football was a tough game to play, there was no offensive team and no defensive team. Some players played the entire game and with fewer men on the field, that made for more ground to cover by fewer men, consequently it made for a more tiring game. Substitutions were usually made only for injuries, there was no unlimited substitution rule.

If you started, you were expected to play most of the entire game. Six man football was the forerunner of the many fine football teams Pompano and later Pompano Beach fielded before the High School was closed.

The trophies commemorating these accomplishments are many and hopefully someday will again be publically displayed so Pompano Beach will be reminded and proud of the great things that happened here in sports in the past, and will again in the future.

Note: (Portions of the 1941 football season scores taken from the first published Pompano High School annual, The "BEANPICKER.") BG.

NEWS...

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discovered deceased, and BSO was contacted.

Anyone with information on the identity or location of the subject involved or regarding this incident, is asked to contact BSO SVU Detective Stephanie Simmons at 954-321-4228 or submit a tip through the SafeWatch app. If tipsters wish to remain anonymous, they can contact Broward Crime Stoppers at 954-493-TIPS (8477) or online at browardcrimestoppers.org. Tipsters can also dial **TIPS (8477) from any cellphone in the United States.

Pompano Beach single-vehicle crash investigated

Broward Sheriff's Office Traffic Homicide Unit detectives are investigating the circumstance surrounding a fatal single-vehicle crash that killed a Coral Springs woman.

According to investigators, the crash occurred at approximately 9:13 p.m. on Thursday, April 18, near the 3100 block of North Andrews Avenue Extension in Pompano Beach.

The preliminary on-scene investigation revealed Solange Alves Arriero De Lima was traveling southbound in a 2016 Hyundai Accent when for unknown reasons she lost control of her vehicle and entered the grass swale where she struck a tree head-on.

Pompano Beach Fire Rescue responded and pronounced her deceased on scene.
The investigation continues.

TRAVEL TROUBLESHOOTER

BY CHRISTOPHER ELLIOTT

Expedia said it refunded my tickets, but it didn't. What should I do?

Keith Dave has been waiting for his refund from Expedia since 2020. But neither the online agency nor his airline can find the missing money. Where is it?



Illustration by Aren Elliott

Q: I need help getting a refund from Expedia. I booked two roundtrip Air Transat tickets from Toronto to Paris through Expedia back in 2020. I had to cancel the flights. Under the refund rules during the pandemic, Expedia said I could get my money back. Expedia said it would process the refund in a matter of weeks.

I waited a few months, but the refund never showed up on my credit card. I contacted Expedia in early 2022, and they told me to contact Air Transat for my refund. I did, and an Air Transat representative said the airline had already sent my refund to Expedia.

I've contacted both Expedia and Air Transat on numerous occasions since then, and I've also asked my credit card company for help. It says there's no record of a refund from Expedia or Air Transat.

I would love to get a refund. Can you help me? -- Keith Dave, Toronto

A: Expedia should have refunded your money three years ago. I believe this is a new record for the longest airline refund case. (Congratulations, Expedia!)

Air Transat is a relatively small charter airline, so that might explain the initial delay. But at some point, Expedia should have taken ownership of this problem and helped you get a refund. Instead, it looks as if you bounced between Expedia, Air Transat and your credit card company for years. Literally, years. You must be exhausted.

What happened? It looks as if Air Transat may have refunded part of your purchase with a check,

which looks like it was for taxes and fees. That left an outstanding balance of about \$1,002. Air Transat claims it sent the money to Expedia, but Expedia said it never received the money.

Here's the thing: When you buy an airline ticket through an online travel agency, it is responsible for the refund. It doesn't matter if the airline refunds it or not. So if Expedia says you're entitled to a refund, and it promises to process a refund in a few weeks, it's on Expedia.

You were way too patient with your airline and online agency. You should have received the promised refund promptly, and if not, you should have filed a credit card dispute to recover your funds.

I list the names, numbers and email addresses of the Expedia executives on my consumer advocacy site, elliott.org. A brief but firm email to one of them might have motivated Expedia to find your missing money.

I contacted Expedia on your behalf. In response, the company apologized and admitted there was "an error with the refund."

"The refund has been processed," a representative said. Expedia also added \$200 worth of points to your loyalty account as an apology for the delay.

Christopher Elliott is the founder of Elliott Advocacy, a nonprofit organization that helps consumers solve their problems. Email him at chris@elliott.org or get help by contacting him on his site.

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Free-range kids are becoming a problem at the airport. What's the solution?



Illustration by Aren Elliott

Have you noticed all the kids at the airport lately?

Not so long ago, you could only find them at the terminal playground areas or the gates, where their parents kept a watchful eye on them. But no longer.

"It's a free-for-all," says Lisamarie Monaco, an insurance saleswoman from Jacksonville, Fla. She knows a thing or two about traveling with youngsters as the mother of seven kids. And she's been appalled at what she's seen lately.

"Parents let their kids do whatever they want at the airport," she says. "It drives me crazy."

Passengers are complaining about free-range children running around the airport unsupervised. How bad has it gotten? When I lived in Santiago, Chile, last year, one young passenger jumped on a luggage belt and took a joyride. Airport workers eventually retrieved the child, who was unharmed.

The anything-goes attitude is often a preview of the flight to come. Who can forget that viral video of the toddler using her tray table as a springboard on an eight-hour flight? Or the frustrated United Airlines captain who wanted to divert his flight because of unruly schoolkids in the back of the plane?

Air travelers disapprove of free-roaming kids.

Passengers are almost unanimous about this problem: 90 percent of travelers say parents should not let their kids roam free, according to a recent survey by Kayak. After all, your fellow passengers are not babysitters.

"These encounters with kids have become a bigger issue," says Howard Pratt, a psychiatrist at Community Health of South Florida who specializes in treating children. "Not everybody traveling looks forward to interacting with kids who are not their own. So it's not just a question of protecting your kids from strangers, but also about protecting other passengers from the potential stress they may experience from having to deal with kids they don't know, yet who they may feel responsible for."

What's a parent to do? If you're flying with young kids, you may wonder if it's OK to let your kids run free anywhere at the airport. When are they old enough to let them out of your sight? What are parents' responsibilities when it comes to allowing their kids to interact with fellow passengers? And also, what if you're on the receiving end of attention from someone's unsupervised child?

Should you allow children to run free in the airport?

Yes -- and no.
"In a safe unpopulated area such as a terminal gate that is full of empty seats," says Ashanti Woods, a pediatrician at Baltimore's Mercy Medical Center. "Children need to know

play and burn energy, especially if we want them to sleep on the flight."

But there's a catch: Parents have to keep one eye on their kids and another on the departure gate to make sure the flight doesn't leave without them.

So should you let your kids run free in the airport? No, say experts. "Children should not be allowed to run free in the airport," says Bidisha Sarkar, a pediatrician at ClinicSpots, a travel medicine site. "It's essential for safety and courtesy to keep them within reach at all times."

What is an appropriate age to allow your kids to explore the airport without adult supervision?

It depends. Timon van Basten, who runs tours in Spain, says he's seen kids as young as 8 who have no trouble being independent in the airport terminal -- and behaving. But it depends on the child and the airport.

"Busy airports like London Heathrow might prove too overwhelming for some kids," he says. Sarkar says parents have to assess their kids' maturity and ensure they know all the airport protocols (no leaving the secured areas, be back in time for boarding).

Parents also have to ensure their children do not disturb others," she says.

What is a parent's responsibility when it comes to allowing their kids to interact with fellow passengers?

"I can't believe I have to say this, but parents, you are responsible for your children at the airport. "It's the parent's responsibility to keep their child from disturbing other passengers as much as possible," says Brandi Taylor, a travel concierge. "If your child is trying to strike up a conversation with a stranger, keep an eye on the stranger's reaction. If they are enjoying the interaction, then there's no need to intervene. But if the stranger would obviously prefer to be left alone, you'll want to redirect your child."

Again, it depends on the child. When my kids were toddlers, they would talk to anyone. And not everyone wanted to get talked to. I erred on the side of caution and avoid the free-range kids problem. "Parents should use the occasion to demonstrate many of the foundational etiquette skills that will serve them well their entire life, such as being mindful of others, respecting people's personal space, being polite-yet-direct, and setting boundaries," says etiquette expert Nick Leighton.

What if you have an encounter with an unsupervised child?

Don't panic. The parents can't be far away. But if you can't find the parent, track down an airport or airline employee and ensure they know the free-range child is on the

loose. Etiquette experts say -- and I agree with them -- you'll gain nothing by approaching a free-range parent angrily. They already know what they've done, and they probably don't care. A lighthearted, "Look who I found!" might be the best approach. Yelling or finger-wagging will just stress you out even more, and it won't change the parents' behavior. Those signs warning of child trafficking in the bathrooms are a good start. If that's not enough to put the fear of God into a parent, I don't know what is.

More designated areas for kids to play would help, too.

But ultimately, it's up to parents to teach their kids good manners and responsible behavior.

Christopher Elliott is an author, consumer advocate, and journalist. He founded Elliott Advocacy, a nonprofit organization that helps solve consumer problems. He publishes Elliott Confidential, a travel newsletter, and the Elliott Report, a news site about customer service. If you need help with a consumer problem, you can reach him here or email him at chris@elliott.org.

PROBLEM SOLVED

BY CHRISTOPHER ELLIOTT

ParkWhiz said it didn't charge me for parking -- but then it did!



Illustration by Aren Elliott

When Grant Erwin tries to pay for parking at Seattle's waterfront, a website called ParkWhiz charges him \$115 -- even though it claims his transaction didn't go through. Can he get a refund?

Q: A parking lot on Seattle's waterfront at the foot of Union Street ripped me off for over \$115. When you park there, you have to go to a website called ParkWhiz and give them your credit card number.

When I did that, the site told me very definitely the transaction did not go through. After repeated attempts, I gave up. When I got home, I saw \$115 in credit card charges.

ParkWhiz answered my initial request for a refund, asking me to send a receipt (which I did), but since then they have not responded at all. Their behavior is outrageous and shows Seattle's new waterfront in a very bad light. Can you help me get my money refunded? -- Grant Erwin, Kirkland, Wash.

A: I'm sorry to hear about the extra charges for parking. You were only there for a few hours and it looks like ParkWhiz charged you four times for the same spot. This should have been a no-brainer. ParkWhiz asked you for a receipt of your parking spot, which you readily provided. And that reminds me: It's not just important to keep a receipt. If a website says your transaction didn't go through, and you suspect it may charge you again, take a screenshot. That will prove that something glitched on your end of the transaction and it will make a refund easier to get.

It's unclear why ParkWhiz stopped communicating with you after you furnished it with your receipt. But I have my suspicions. ParkWhiz works through an app on your phone. It issues a mobile parking pass once you've paid for your spot. But it's difficult to verify if a car has actually used that spot. ParkWhiz, which is just an intermediary between you and the parking lot operator, would have to contact the operator to ask if it has any records that the spot was used. That might explain the wait time.

ParkWhiz parking passes are fully refundable before the start time on the pass unless otherwise noted. So you could have canceled your reservation at any time up to the start of your reservation. But since you were already past the start time, the passes would have technically been nonrefundable if they existed.

Lesson learned? If a transaction doesn't go through, contact the company or your bank before trying again -- and again. Otherwise, you could have multiple charges for the same product on your credit card and no way to get rid of them.

You contacted me 10 days after your parking fiasco, which was understandable. But you might have given ParkWhiz a little more time to resolve this. Personally, I think showing it a receipt should have been enough, and who pays for the same spot four times? But still, I think a fair amount of time would have been two weeks. You were close enough.

I contacted ParkWhiz on your behalf.

"It worked!" you said in a follow-up email the next day. "Today, they refunded all charges!"

Christopher Elliott is the founder of Elliott Advocacy (<https://elliottadvocacy.org>), a nonprofit organization that helps consumers solve their problems. Email him at chris@elliott.org or get help by contacting him at <https://elliottadvocacy.org/help/>.

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HEALTH

Curbing the Price of Diabetes and Obesity Medications



For years, Kasia Lipska, MD, MHS, associate professor of medicine (endocrinology) at Yale School of Medicine (YSM), has been advocating for affordable pricing of insulin, an essential—and sometimes lifesaving—drug for many individuals with diabetes. Now, she is turning her attention to a similar trend of soaring prices among new diabetes and obesity medications.

The implications of exorbitant prices for these novel therapies are alarming, according to Lipska, who first became aware of the drug pricing issue in 2016 when one of her patients couldn't afford to increase the dose of insulin she was taking. In subsequent research, Lipska discovered that 1.1 million Americans, or 14 percent of those who filled insulin prescriptions, reached catastrophic spending, defined as spending more than 40 percent of post-subsistence income on insulin alone.

The same insulin and other medications for diabetes and obesity are frequently priced 10 times higher in the U.S. than in peer countries, Lipska said.

In a new paper, "Lessons From

Insulin: Policy Prescriptions for Affordable Diabetes and Obesity Medications," published in *Diabetes Care*, Lipska, Reshma Ramachandran, MD, assistant professor of medicine (general medicine) at YSM, and first author Kathryn Nagel, MD, former YSM Department of Internal Medicine resident, used findings from previous research on insulin pricing to look at the issues underlying drug affordability.

Our paper highlights where along the drug development and delivery value chain there is more work yet to be done by policymakers to enable more equitable and affordable access to these medications.

"As with insulin, our patients are facing parallel challenges in accessing other new non-insulin diabetes and anti-obesity medications," Ramachandran said.

In their research and analysis, Lipska, Ramachandran, and Nagel gathered evidence about the changes needed to achieve fair pricing of new diabetes and obesity drugs, creating a blueprint that policymakers can use for potential action.

"Writing the article helped us map out the different pieces that go into the drug pricing process in the U.S.," Lipska said. "We learned more about the complex chain of events that leads from drug development and patent law to how much patients pay when the medicine gets to them."

"Our paper highlights where along the drug development and delivery value chain there is more work yet to be done by policymakers to enable more equitable and affordable access to these medications," Ramachandran added.

Ramachandran noted a key lesson learned from efforts to improve access to insulin is that there is no single silver bullet. "Our paper shows that a range of upstream and downstream policies are necessary," she said.

There are a lot of policies targeting drug affordability that have recently been proposed or enacted into law. Clinicians can give feedback about how certain solutions are playing out in practice and bring an important perspective to this conversation.

But there are challenges to policy reform, the researchers observed.

"While the recent Inflation Reduction Act includes several policies to lower prescription drug prices, including for those used in diabetes treatment, the legislation also has serious limitations in providing relief for patients, particularly for novel, transformative treatments," Ramachandran said.

Lipska pointed to the power of U.S. corporations as another obstacle to drug affordability. "Many patient advocacy groups, educational events, and even professional societies that clinicians are a part of are in some way influenced or supported by the pharmaceutical industry," she said.

Still, the issue is gaining traction, Lipska says. She notes a growing awareness of the need to address the drug pricing crisis through state and federal intervention and of the role clinicians can play in advocating on behalf of their patients.

"There are a lot of policies targeting drug affordability that have recently been proposed or enacted into law," she said. "Clinicians can give feedback about how certain solutions are playing out in practice and bring an important perspective to this conversation."

Perinatal substance use may shape how strongly mothers feel toward infants

Researchers exposed both mothers who used substances during the perinatal period [start of pregnancy until one year after birth], and those who didn't, to pictures of happy and sad infant faces and sounds of crying babies. The types of substances used among the former group of mothers varied, but the most common substance was tobacco (70%), followed by alcohol (30%), cannabis (20%), and cocaine (20%).

Mothers were presented with these stimuli while undergoing functional magnetic resonance imaging (fMRI), which measures brain activity. fMRI revealed that brain regions associated with affective empathy were less activated in response to the infant stimuli in mothers who used substances than in mothers who did not.

"Moms who use substances deserve support and help," says Li Yan McCurdy, PhD, postdoctoral fellow in Yale's Department of Radiology & Biomedical Imaging and the study's first author. "Being able to identify these similarities and differences is important for helping us find ways to support these moms in caregiving."

Empathy can be divided into subcategories including cognitive empathy and affective empathy. Cognitive empathy refers to one's ability to identify emotions that others are experiencing. This type of empathy is linked to brain regions such as the medial prefrontal cortex.

Affective empathy, on the other hand, refers to the emotions one feels in response to various cues. "This is a measure of how emotional you personally feel in relation to someone's emotions, for example how happy you feel when looking at someone who's happy," McCurdy explains. The brain regions associated with affective empathy include the inferior frontal gyrus, insula, and amygdala.

Mothers rate emotional intensity of infant cues and own feel-

ings in response. McCurdy's team used previously published data from a 2020 study led by Helena Rutherford, PhD,



associate professor in the Yale Child Study Center, who is also the study's principal investigator. The dataset included 39 mothers who had used substances during pregnancy. All of the participants looked at images of happy and sad infants and listened to sounds of infants crying while undergoing fMRI. Half of the cues were from unknown infants and half were the mother's own baby. After the scan, researchers asked the participants to provide a "think" and a "feel" rating.

For the "think" rating, the researchers asked the participants to evaluate how happy or sad they thought the infant was feeling for each cue. This was a proxy for measuring the mother's cognitive empathy. The researchers also asked the mothers to rate how strongly each cue made them feel. This was the "feel" rating, which was a proxy for affective empathy.

McCurdy's team reanalyzed this dataset to better understand how maternal substance use during the perinatal period might impact mothers' cognitive empathy and affective empathy. Based on the subjective ratings and neural activity, levels of cognitive empathy did not significantly differ between groups—the mothers' perceptions of how strongly each infant was feeling were comparable. And the brain regions associated with cognitive empathy showed similar activation.

On the other hand, mothers who used substances reported feeling less intensely in response to the infants, especially toward sad cues.

"When they heard an infant cry or when they saw a picture of a sad infant face, they reported their affective empathy as being less intense," McCurdy explains. The fMRI scans also showed that brain regions associated with affective empathy were less activated in this group.

Interestingly, however, when the cue was an image of the participant's own smiling infant, there was no significant difference in affective empathy ratings between the two groups. "It seems there's something quite unique about seeing your own happy baby that makes moms who use substances feel equally happy compared to moms who don't," says McCurdy. "In terms of developing interventions, perhaps seeing your smiling baby can be a source of reward and motivation."

McCurdy highlights that the data only include measures of how mothers feel and think about infant stimuli and does not directly measure maternal behavior. "Future studies are needed to link these responses to infant stimuli with caregiving abilities," she says.

"Based on these data alone, we also cannot ascertain whether these differences in maternal responses observed are a result of the substance use or are simply associated with it," says Rutherford. "It's possible that feeling less intensely particularly towards sad infant stimuli may actually be adaptive as it allows mothers who use substances to not feel overwhelmed when interacting with their crying baby."

McCurdy hopes these insights will help inform efforts to support mothers struggling with substance use. "There's a lot of stigma around substance use, and this stigma is unfortunately amplified for mothers who use substances," says McCurdy. "It's important that we continue studying this population because understanding how to best support their caregiving and maternal behavior is immensely important in helping them be the best moms they can be."

Understanding bacteria protection in order to break through it

Yale researchers have uncovered new details into the part of this process that prevents

on how bacteria like *E. coli* build their protective barriers, which will inform new antibiotic development. Antibiotic-resistant bacteria are a growing problem when it comes to combatting infections. Bacteria that have an additional protective layer to their cell walls—a type known as "Gram-negative" in reference to the staining method used to identify it—is especially difficult to fight.

Yale researchers have made headway in understanding how bacteria generate this protective layer through a new study that uncovers additional nuance—and additional targets for developing new antibiotics.

A critical component of this protective layer is a molecule called lipopolysaccharide (LPS). Bacteria need a certain amount of LPS; too much or too little kills the cell. Previous research from the lab of Wei Mi, assistant professor of pharmacology at Yale School of Medicine, revealed how molecular sensors in *E. coli* strike the right balance of LPS production.

In the new study, researchers delved deeper



into the part of this process that prevents direct visualization of how this part of the process happens," said Mi, senior author of the new study. "Once we saw the structure, we made changes to the molecules to see how that affected binding, which allowed us to identify what components are necessary for LapB to recognize LpXC." But the researchers also found, to their surprise, that LapB had a second role. Not only is it responsible for the degradation of LpXC, but it also inhibits the enzyme's action before degradation happens.

"Basically, LapB shuts down LpXC before it trashes it," said Mi. "We don't understand why bacteria do this, as it seems redundant, but this is what we're looking into now."

The researchers speculate that this dual role might be about flexibility. Degradation is a slow but irreversible process, whereas inhibition is prompt and reversible. Having both capabilities might enable bacteria to respond to environmental changes more nimbly. "This is all relevant for antibiotic development," said Mi. "These details will help us find new approaches and understand why others don't work."

The researchers model mental illness as a state of negative thinking and a state of rumination—the uncontrollable and repetitive preoccupation with negative thoughts—that is reinforced through behavior. In that model, they say, individuals experiencing mental illness are pessimistic about their future productivity, risky investments, and the evolution of their mental health. They also lose time while ruminating. As a result, they work, consume, and invest less while also foregoing treatment, which reinforces their mental illness.

The study typifies the cross-disciplinary approach to economic questions of major policy and societal importance that is a hallmark of the scholarship produced by Yale's Department of Economics over more than 50 years—including Yale economist William Nordhaus' pioneering work combining economic modeling with climate science to predict the costs of climate change. "Economics and psychiatry have developed over 50 years, but they don't speak to each other very much," he said. "Here, we've put them in conversation in a way that enlightens both and provides us a stronger sense of the societal costs of mental illness as well as what can be gained through policies that seek to expand and improve mental health care."

reduction mental illness by 3.1% and bring societal benefits equivalent to 1.1% of aggregate consumption. Providing mental health services to everyone between the ages of 16 and 25 experiencing mental illness would reap societal benefits equal to 1.7% of aggregate consumption, according to the study.

At the same time, their analysis found that lowering the out-of-pocket cost of mental health services does not substantially reduce the share of people with mental illness and provides only minor economic gains. The researchers suggest that the monetary costs of mental health services are relatively low, meaning that reducing costs does not lead to greater uptake in treatment nor does it significantly reduce instances of mental illness.

portfolio choices, as well as the country's labor supply, generating enormous annual costs to our economy."

Nationwide, more than 20% of adults live with mental illness and about 5.5% experience serious mental illness, according to the U.S. Substance Abuse and Mental Health Services Administration.

For the study, Tsyvinski and co-authors Boaz Abramson, of Columbia Business School, and Job Boerma, of the University of Wisconsin-Madison, analyzed the potential effects of policies aimed at improving treatment of mental illness.

They found that expanding the availability of mental health services—by eliminating the shortage of mental health professionals, among other means—would

Driver of liver cancer that could be target for treatment

Inhibiting a certain protein in mice reduced obesity-induced liver tumor

development, Yale researchers found. It could reveal future treatment route.

Metabolic diseases like obesity can increase the risk of developing liver cancer, research has shown. But how one disease predisposes to the other is unclear. In a new study, Yale researchers uncovered a key role played by a molecule called fatty acid binding protein 5 (FABP5) and found that inhibiting it blocked tumor progression in many cases.

The molecule, said the researchers, could be a target for cancer treatment in the future.

Hepatocellular carcinoma is a type of cancer that accounts for 90% of liver tumors and it's the second-leading cause of cancer-related deaths worldwide.

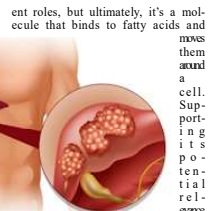
"Obesity-related hepatocellular carcinoma is also on the rise in the United States as rates of metabolic disease increase," said Carlos Fernández-Hernando, the Anthony N. Brady Professor of Comparative Medicine and professor of pathology at Yale, and senior author of the study.

Obesity can lead to non-alcoholic fatty liver disease, in which excess fat builds up in the liver. In some people, this disease transitions to more inflammatory condition called non-alcoholic steatohepatitis, which can lead to liver cancer.

To study what might be driving this disease transition, the researchers fed mice a specific diet that induces fat accumulation in the liver. Previous studies have shown that this diet over time induces non-alcoholic fatty liver disease, followed by non-alcoholic steatohepatitis, and then hepatocellular carcinoma in mice, mimicking the disease transition in humans. While the mice were on this diet, the researchers looked for any changes in gene expression across various liver cells.

"One thing that stood out to us was that this molecule FABP5 was highly elevated in liver tumor cells," said Jonathan Sun, a Ph.D. student in Fernández-Hernando's lab and lead author of the study. "We also observed that it was expressed in immune cells called macrophages localized in the tumors."

Depending on the context and the cell type, FABP5 can perform differ-



ent roles, but ultimately, it's a molecule that binds to fatty acids and moves them around a cell. Supportive research from the laboratory of Dr. Yajaira Suárez, a pathology at YSM and co-senior author of the study.

After treating a subset of mice with a molecule that inhibits FABP5, the researchers found that it blocked tumor progression. While 50% of the mice not treated with inhibitor went on to develop liver tumors, just 25% of the mice treated with the inhibitor did. The tumors they did develop were also fewer in number and smaller than those of their untreated counterparts. These findings were further substantiated in mice genetically deficient in FABP5, which were significantly resistant to obesity-driven hepatocellular carcinoma.

The researchers found two potential explanations for why inhibiting FABP5 had this effect on tumors: Inhibiting FABP5 made the tumor cells more susceptible to a cell death called ferroptosis, and it changed the tumor microenvironment.

"Inhibiting FABP5 caused macrophages to shift to a more pro-inflammatory state, which led them to activate other immune cells," said Sun. "It rewired the microenvironment to be more aggressive against cancer cells."

The findings are promising when it comes to potential treatments for liver cancer in humans, said Fernández-Hernando, who is also a member of the Yale Cancer Center and director of the Vascular Biology and Therapeutics Program at YSM. Going forward, he said, the team aims to better understand the link between FABP5 and ferroptosis at the molecular level and test how FABP5 inhibition might affect other cancers and illnesses like cardiovascular disease.

Novel study quantifies immense economic costs of mental illness in the U.S.

Mental illness costs the U.S. economy \$282 billion annually, which is equivalent to the average economic recession, according to a new study co-authored by Yale economist Aleh Tsyvinski.

The first-of-its-kind study integrates psychiatric scholarship with economic modeling to better understand the macroeconomic effects of mental illness in the United States.

The \$282 billion estimate, which amounts to about 1.7% of the country's aggregate consumption

is about 30% larger than previous approximations of mental illness' overall cost in epidemiological studies.

While those earlier studies focused on income loss relating to mental illness and the costs of mental health treatment, the new study also accounted for a host of additional adverse economic outcomes associated with mental illness, including the fact that people with mental illness consume less, invest less in a house, stocks and other risky assets, and may choose less-demanding jobs, Tsyvinski said.

"In this paper, we develop the first integrated model of macroeconomics and mental health building on classic and modern psychiatric theories," said Tsyvinski, the Arthur M. Okun Professor of Eco-

nomics in Yale's Faculty of Arts and Sciences and professor of global affairs in the Yale Jackson School of Global Affairs. "We show that mental illness alters people's consumption, savings,

and investment decisions, which in turn affects the country's labor supply, generating enormous annual costs to our economy."

Nationwide, more than 20% of adults live with mental illness and about 5.5% experience serious mental illness, according to the U.S. Substance Abuse and Mental Health Services Administration.

For the study, Tsyvinski and co-authors Boaz Abramson, of Columbia Business School, and Job Boerma, of the University of Wisconsin-Madison, analyzed the potential effects of policies aimed at improving treatment of mental illness.

They found that expanding the availability of mental health services—by eliminating the shortage of mental health professionals, among other means—would

reduce mental illness by 3.1% and bring societal benefits equivalent to 1.1% of aggregate consumption.

Providing mental health services to everyone between the ages of 16 and 25 experiencing mental illness would reap societal benefits equal to 1.7% of aggregate consumption, according to the study.

At the same time, their analysis found that lowering the out-of-pocket cost of mental health services does not substantially reduce the share of people with mental illness and provides only minor economic gains.

The researchers suggest that the monetary costs of mental health services are relatively low, meaning that reducing costs does not lead to greater uptake in treatment nor does it significantly reduce instances of mental illness.

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OPINION

Lax antitrust enforcement linked to rising hospital prices

A new study co-authored by a Yale economist provides evidence that insufficient antitrust enforcement in the U.S. hospital sector is contributing to reduced competition and higher prices for hospital care.

The study, conducted in collaboration with researchers at Harvard, the University of Wisconsin-Madison, found that of 1,164 mergers among the nation's approximately 5,000 acute-care hospitals that occurred in the United States from 2000 to 2020, the Federal Trade Commission (FTC), the government agency tasked with preserving competition in the hospital market, challenged only 13 of them — an enforcement rate of about 1%.

The researchers show that the FTC, using standard screening tools available to the agency during that period, could have flagged 20% of the mergers — 238 transactions — as likely to cause reduced competition and increase prices. If the FTC were optimally targeting enforcement, unchallenged hospital mergers should have had minimal effects on competition and prices, noted the researchers.

However, using data on the prices that hospitals negotiate with private insurers, the researchers found that mergers the FTC could have challenged as predictably anti-competitive between 2010 and 2015 eventually led to price increases of 5% or more.

"It is plainly clear that there has been underenforcement of antitrust laws in the hospital sector," said study co-author Zack Cooper, an associate professor of health policy at the Yale School of Public Health and of economics in Yale's

Faculty of Arts and Sciences. "We show that about 20% of hospital

mergers cite underfunding of the

FTC as a potential cause of its lax enforcement activity.

They estimate that the 53 hospital mergers that occurred on average annually from 2010 to 2015 raised health spending on the privately insured by \$204 million in the following year alone. Putting this increase in context, the researchers note that the FTC's average annual budget and antitrust enforcement budget between 2010 and 2015 were \$315 and \$136 million, respectively.

"We posit that much of the underenforcement is likely a function of a lack of funding for the antitrust enforcement agencies," said Zarek Brot-Goldberg, an assistant professor at the Harris School at the University of Chicago. "Mergers in the hospital sector are generating short-run harms that roughly approximate the FTC's entire budget, which suggests the agency might lack sufficient resources to take necessary enforcement action and preserve competition."

The study found that mergers in rural regions and areas with lower incomes and higher rates of poverty generated larger average price increases, often in outpatient services.

The researchers suggest this occurred because those regions — compared with higher income, urban settings — have fewer free-standing clinics that offer surgical and imaging services that compete against hospitals in the outpatient market.

chology at DePaul University, studies intuition more as an emotional gut feeling. After all, when we speak about our intuition, we often talk about it as something "feeling right" or "feeling off."

Kushal, a trader on Wall Street, had just entered one of the Twin Towers on 9/11. Orders were given to remain in the building. There was a lot going on and Kushal didn't have time to deliberate rationally about what he should do. He had to make a decision and fast. His gut feeling told him to run. Because he followed it rather than the guard's order, he saved his life seconds before the building collapsed.

Mikels' research shows that in situations — like Kushal's — where matters are complex, you'll make a better decision by following your feelings. He found this to be especially true for older adults whose cognitive faculties might not always be as sharp as younger people's, showing that intuition is even more important with age.

When I interviewed Lynn, the Turnaround Queen, for my book *Sovereign*, she shared: "I definitely moved from my intuition. But intuition without intellect is like buying a plane without any propulsion. I do the analysis, but my decision comes from my place of knowing. You can't shut off your intuition."

And because she followed her intuition, she saved hundreds of thousands of working class families from succumbing to unemployment.

Joe Mikels gives good advice similar to Lynn's. Given his research on intuition and how it can help you make a better decision in complex situations, he says he makes sure to "consult" it and take it into consideration along with all the other information he has.

How can you train yourself for intuition? Intuitive thoughts or a-ha moments are more likely to come when your brain is in alpha-wave mode, i.e. you are not concentrating on something, nor are you so relaxed that you could fall asleep. You're in a meditative state of mind. Making time and room for alpha-wave moments will help you access it.

Meditation: Research shows meditation makes you more creative and insightful. Meditation also increases your awareness.

Nature: Research shows you're more likely to come up with innovative insights after spending time in nature.

Time Off & Unplugged: Make time to be off your devices and in a more relaxed state. Although you may feel idle, your brain is actually in active problem-solving mode. Breathe: Learning to use your breaths, you can significantly reduce your stress levels and cultivate a calmer, more meditative state of mind.

Motion captured: 'Symphonic' installation draws on movement of its visitors

So declared teams of scientists from around the world last summer. As reported in *Smithsonian Magazine*, the scientists said they'd discovered a new kind of gravitational wave that the universe creates a constant, ambient hum.

The findings suggested a "tolling" in the noisy universe alive with the cosmic symphony of gravitational waves."

Those findings captured a rare moment in time. Maggie Schryner, now a Yale senior majoring in Computing and the Arts.

After reading the article, Schryner decided to create an interactive, mini universe of music for her own. Also a musician and assistant conductor of Yale's Davenport Pops Orchestra, Schryner set out to design an immersive installation that would use motion-capture technology to track visitors' movements and create a collaborative piece of music.

Motion capture technology is used to record human movement and then translate that movement into a computerized form. It is commonly used in filmmaking, animation, video game design, and sports training.

Schryner had seen motion capture tools used in combination with music, usually with dancers wearing suits fitted with sensors and producing sound in very meticulous ways. "I wanted to do something that was more accessible to anyone," she said.

The project would also serve as her senior thesis. But first, Schryner had a lot to learn.

Last semester she researched various motion capture music projects and started to familiarize herself with coding software for the audio and visual aspects of her project. She wanted to use projectors and lighting boards for the installation, something else she'd never done before.

"I was learning everything as I

was. Working with Schryner were Konrad Kaczmarek, an associate professor in the Department of

sors attached to space-themed objects around the room. The motion-capturing cameras were attached to the ceiling.

As visitors moved about the room, different musical tracks would adjust the volume and panning in their headphones according to who and what they were close to.

"The motion-tracking technology designated each person that entered the space as a new instrument, with musical lines mimicking their movement and stillness as they explored the exhibit," Schryner

The universe is awash in sound.

Music in Yale's Faculty of Arts and Sciences, Scott Petersen, a senior lecturer in Computing and the Arts, and Ross Wightman, technical manager at the Yale Center for Collaborative Arts and Media (CCAM).

As visitors moved about the room, different musical tracks would adjust the volume and panning in their headphones according to who and what they were close to.

Her efforts culminated last month in an interactive motion-capture performance staged in CCAM's Leeds Studio, which is equipped with a Vicon Motion Capture System.

Window shades blocking the light from outside twinkled with stars, a form of generative art Schryner created with code. An ever-changing galaxy-like design, also one of her programs, glowed on a large screen at the front of the room.

A low hum could be heard — a nod to the universal hum. But Schryner had also composed a soothing, nine-minute piece of music written in Logic Pro, Apple's digital audio workstation, that could only be heard by guests wearing special sets of headphones affixed with sensors. The music was split into different tracks that were assigned to the four sets of headphones as well as other sen-

said. The project was a hit. Some 60 people (mainly students) signed up for one of the 15-minute slots to try out the headphones.

It was so special to have had an opportunity to exercise full creative control over my own space in an installation, and to be able to share it.

Schryner was especially pleased at the end of the night when some friends who were laying on the floor in the studio told her how relaxing the music was and how much they wanted to hear it again.

"I assumed the biggest draw of my project would be the technological and movement aspects of it," she said. "I was pleasantly surprised that the music was the most composed for the space was received well and contributed to, rather than distracted from, the meditative atmosphere I was aiming for."

Schryner, who is from Torrington, Connecticut, isn't sure what's next in her upcoming gap year, aside from her first trip to the Philippines, her mother's native country. But she's already thinking about other projects combining music and art with technology.

"It was so special to have had an opportunity to exercise full creative control over my own space in an installation," she said, "and to be able to share it."

membranes, the researchers instead used polyester.

The choice of material is critical, as this polyester membrane allows for substantial water permeability, has a high rejection rate for sodium chloride and boron, and a complete resistance toward chlorine. The ultra-smooth, low-energy surface of the membrane also outdoes polyamide membranes in preventing fouling and mineral buildup.

Further, the team designed the membranes so that they could be easily adopted by the industry.

"The fabrication process of the polyester membrane is similar to that of the art of making polyamide membranes, so existing industrial production lines could potentially be adapted to quickly scale-up manufacturing," said Elimelech, the Sterling Professor of Chemical and Environmental Engineering.

Prof. Xuan Zhang of Nanjing University of Science & Technology, China said that after optimizing the design, their membranes could eventually outperform today's polyamide membranes in their levels of water-salt selectivity, offering a path to considerably reducing pretreatment steps in desalination.

They also noted that as water scarcity becomes a global problem around the globe, new desalination technologies are needed, and the one they've developed avoids many of the challenges that current systems face.

"Advanced membranes with resistance toward fouling and scaling hold immense promise for increasing freshwater access to those who need it," said co-author Ryan DuChanois, a former Ph.D. student in Elimelech's lab and now postdoctoral associate at Rice University.

Greater access to clean water, thanks to a better membrane



Water scarcity around the world is a bigger problem than ever, and desalination is critical to solving it. The best available technologies for separating salt from seawater, though, are costly and require a great deal of maintenance.

A team of researchers has now developed a durable and cost-efficient filtering membrane that could increase the number of people across the globe getting clean, safe water. The results of their work, from the lab of Prof. Menachem Elimelech in collaboration with Nanjing University of Science & Technology, are published in *Science*.

Reverse osmosis — a system that purifies water by pushing it through a very fine semi-permeable membrane — has been increasingly used to provide safe and clean drinking water to areas of the world where it's

most needed. The most commonly used membranes are made from polyamide, a polymer that offers excellent water permeability and salt rejection. But these membranes are also delicate and susceptible to "biofouling," when a bacterial biofilm grows on the surface and blocks the membranes' passages. Chlorine can be used to prevent membrane biofouling, but it can also deteriorate the polyamide films. To overcome these limitations, the industry has widely adopted a series of costly pretreatment steps.

With an innovative material design, the Yale and Nanjing researchers have developed a reverse osmosis membrane that not only desalates water but is also resistant to chlorine as well as fouling. Rather than using the industry gold standard of polyamide to develop these

The best leaders use intuition



In an excerpt from her new book *Sovereign: Reclaim your Freedom, Energy, and Power in a Time of Distraction, Uncertainty, and Chaos*, Yale SOM's Emma Seppälä writes that drawing on instinct as well as analysis can help you make better decisions.

When you're making decisions, should you listen to your gut or only lean on reason? Research suggests we should do both.

Lynn Tilton lost her father as a teenager and experienced firsthand what the loss of the main income provider can do to a family. She got herself into Yale on a tennis grant, married while at Yale, became pregnant shortly after graduation, and soon became a single mom. It was the 80s and she launched into a career on Wall Street to support her child. Successful financially but sexually harassed daily, she planned to retire young once she had made enough money. But when she did, she had a dream that changed everything. A vision that came to her as an intuition that had changed the course of her life and those of the hundreds of thousands of people her life would touch.

In her dream, her late father appeared to her and said, "This is not what I had in mind for you."

Lynn realized that she needed to make her life about more than herself and to dedicate the rest of her career to making sure others would not have to go through the kind of suffering she and her family had when her father, the family's primary provider, died.

So Lynn founded Patriarch Partners, a company that bought organizations on the brink of bankruptcy — companies that consulting firms and others had completely given up on — and turned them around — think Stila Cosmetics, for example.

Because she followed her intuition instead of squelching it as "magical" or "irrational" thinking, the Turnaround Queen, as Lynn came to be known, became the owner

of the largest woman-owned business in America, at one point overseeing 700,000 employees whose jobs she had saved.

Turns out Lynn isn't alone. Eighty-five percent of CEOs use intuition when making decisions. And for good reason.

While most of us have had gut feelings, instincts, or intuitions in our lives, we learn to brush them off as irrational. Yet research supports that intuition is an elegant, fine-tuned, and incredibly rapid form of perception we are wired for and that can help us make better decisions.

Staff Sergeant Martin Ritchburg was at an Internet café on a military base in Iraq, speaking to his wife back home, when he got a weird feeling about a man who walked into the café. Ritchburg saved the lives of 17 people that day because his hunch was right and the man had planted a bomb.

Because of accounts like this and others, the U.S. military is investing in the non-rational even has training programs to develop it further.

One example is a highly cognitive form of intuition you could think of as hyperawareness. Marine Corps officer Maurice "Chipp" Naylor, author of *The New Ministry of Truth*, described his experiences in Afghanistan.

He shared with me that the U.S. Marine Corps Combat Hunter training is a way the Marine Corps has formalized the instruction of honing into your gut. It involves becoming an acute observer. You train your observation skills for deviations from the norm in your environment.

When Chipp was in Afghanistan patrolling, for example, noticing that a usually busy playground was empty would indicate a deviation from the norm and be a sign of potential danger.

Another form of intuition is more of a gut feeling. Neuroscientist Joseph Mikels, professor of psy-

Harnessing the power of observability may increase climate-friendly behavior

Drive through a residential neighborhood, and if you spot one home with solar panels, chances are you will find at least one or two more. Observability, the ability to see the behaviors of others, has been known for decades as an essential driver of human actions. It is particularly important in the adoption of green behaviors and technologies and could lead later adopters to follow the lead of early adopters.

A team of researchers, including Kenneth Gillingham, professor of environmental and energy economics at the Yale School of the Environment, has found that being able to provide information to others about their green behavior could increase energy generation to cover the electricity of the neighbor.

"An exciting aspect of our study is that we have a context where people can make a pro-environmental decision by signing up for peer-to-peer solar when their rooftop is not suit-

able for their own solar system, and that decision is inherently not visible or observable to others. This allows us an opportunity to make a key decision observable, and thus test the importance of observability," Gillingham said.

When people believe that they can share information about their green decisions, this increases their proclivity to make green decisions," Kenneth Gillingham, professor of Environmental and Energy Economics.

The researchers implemented a set of randomized Facebook campaign ads in the Massachusetts cities of Cambridge and Somerville to study social media users' interest in peer-to-peer solar through clicks on the ads.

They conducted the study over a two-year period between 2018 to 2020 in partnership with peer-to-peer company MySunBuddy. The research was part of a Department of Energy funded SEDS2-SES project and coordinated with the Yale Center for Business and the Environment.