



Sentry



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LOCAL NEWS...

16-year-old killed, 3 injured in Pompano Beach Shooting

Broward Sheriff's Office V.I.P.E.R. (Violence Intervention Proactive Enforcement Response) detectives and Pompano Beach Crime Suppression Team (CST) deputies arrested three suspects who were wanted for a fatal shooting that occurred in Pompano Beach.

Around 5 p.m. on Monday, March 25, Broward County Regional Communications received reports of a shooting in the 1800 block of Dr. Martin Luther King Jr. Boulevard in Pompano Beach, BSO deputies and Pompano Beach Fire Rescue responded. On scene, deputies located a male on the sidewalk suffering from gunshot wounds and immediately began life-saving measures. Pompano Beach Fire Rescue transported the victim, John Robinson, to Broward Health North where he died. Deputies also learned that three additional shooting victims were taken to a nearby hospital by a private vehicle. They sustained injuries that were not life-threatening.

According to detectives, the preliminary investigation revealed that the victims were in front of a business at 1780 Dr. Martin Luther King Jr. Blvd. prior to the incident when they were approached by multiple subjects who began shooting.

Detectives with BSO's Crime Scene and Homicide units were notified and responded to the scene to investigate. Through their investigation, detectives determined three suspects were responsible for the homicide and obtained arrest warrants for Christian Moore, Devonte Lowe and Kyle Robinson.

On April 6, Pompano Beach CST located and arrested Moore. On April 7, V.I.P.E.R. detectives arrested Lowe and Robinson. All three were booked at BSO's Main Jail and face one count each for first-degree murder with a firearm and three counts of attempted first-degree murder with a firearm.

N. Lauderdale man fatally shot

Detectives with the Broward Sheriff's Office Homicide Unit have arrested 32-year-old Brandon Neville Shane Roberts for the murder of DeAndre Major.

At approximately 2:41 a.m. on Sunday, March 24, Broward County Regional Communications received a call reporting a shooting in front of the Player's Sports Bar & Grill located at 5280 N. State Road 7 in North Lauderdale, BSO District deputies responded to investigate.

During the preliminary investigation deputies learned three shooting victims were transported to two hospitals by individuals at the scene. Emergency personnel pronounced Major deceased later that morning. Brandon Pinkney and Clarence Hall sustained injuries listed as not life-threatening. BSO Homicide detectives responded to investigate.

Through investigative means detectives identified Roberts as the suspect, and a warrant was issued for his arrest. Roberts was arrested on Friday, March 29. He was booked at BSO Main Jail and faces one count of first-degree murder with a firearm and one count of attempted murder with a firearm.

The investigation into the shooting is ongoing.

Anyone with information on this fatal shooting is asked to call Homicide Detective Louis Bonhomme at 954-321-4377 or submit a tip through the SaferWatch App. If you wish to remain anonymous, please contact Broward Crime Stoppers at 954-493-TIPS (8477), online at browardcrimestoppers.org, or dial **TIPS (8477) from any cellphone in the United States.

BSO investigates fatal shooting in Lauderdale Lakes

Detectives with the Broward Sheriff's Office Homicide Unit are investigating the circumstances surrounding a deadly shooting in Lauderdale Lakes.

At approximately 11 a.m. on Sunday, April 7, BSO deputies and Broward Sheriff's Fire Rescue responded to a shooting call near the 3100 block of Northwest 41st Street. On scene, emergency crews

Florida "steep odds" but in play for Biden

Democrats continue to face significant headlines in Florida as passage of the abortion ballot initiative continues to face an uphill battle. A recent poll shows that 50% of Florida voters said they would be in favor of such an amendment - below the 60% majority required to pass it in November.

The poll shows Democrats face a substantial enthusiasm gap about the 2024 election compared to Republicans and former President Donald Trump, who calls Florida



Gov. DeSantis plans to fundraise for Trump

his support for Donald Trump as well as all republicans up a d b a l l o t this year. After he was effectively in a political war with Trump, it remains unclear if Trump and his team want DeSantis to help them, or have him as an ally, even though the governor did endorse Trump in January.

The two men were longtime political allies after Trump's endorsement helped DeSantis become governor in 2018. As it became clear DeSantis was considering running against Trump in 2024, the relationship publicly soured, and toward the end of DeSantis' campaign, both sides regularly trashed each other.

DeSantis will keep Florida front and center in the conservative movement with more than 2 and a half years left as governor.

In a speech to donors on Friday night, DeSantis once again hit familiar themes, boasting about Florida's low taxes, "freedom" and "law and order," according to donors who attended.

In Florida, Gov. DeSantis is concentrating on eliminating "grooming" children. "In Florida, we let kids be kids, and we protect children from those who seek to harm them," DeSantis said. "Today's anti-grooming legislation punishes those who seek to prey on children and rob them of their innocence. Florida will continue to be the best state in the country to raise a family."

One of the bills, SB 1224, was "inspired by Gabby Petito," who was killed by her fiancé, Brian Laundrie, in 2021. Her parents have said officers in a domestic violence stop involving the two ignored their daughter's injuries and should have taken action. DeSantis said part of the bill would create an assessment for law enforcement officers who respond to a domestic violence incident to "determine

whether domestic violence victim is at a higher risk of death or serious injury."

Reproductive rights were among the top issues for Democratic voters, behind inflation or cost of living, and housing. For Republicans, the issue dropped far down the list, below things like crime and immigration.

guage in the legislation, as well as higher risk of death or serious injury."

DeSantis signed a bill last week that tackles the rising crimes in Florida, increasing penalties. "If you order something and come back home... the package is going to be there and if it's not, someone will have to pay for it," DeSantis said.

The bill reduces the minimum threshold amount for an offense of grand theft of the third degree.

DeSantis criticized laws in other states, such as California. "This retail theft ring is a total scam," DeSantis said. "You have liberal laws and these people are exploiting that to basically further themselves, knowing that they can loot a certain amount without really facing any significant penalties."

"In Florida, we've seen a decline in retail theft in the past four years," said DeSantis. "We're going to make sure our retailers are able to sell products, that consumers are able to benefit and that people are held accountable when they break the law." The bill is part of his effort to make Florida a "law and order state" he said.

After several days of not seeing the gator, he passed by one day on his motor car and there was the gator, again on the bank in almost the same place. This time he had the picnic with him after stopping the car, got off and again made his way to almost the same place he shot from before only this time getting several feet closer to the huge gator.

He had already decided to aim where he thought it would be, right behind the left foreleg where the skin was much thinner and softer than on the top side of the gator. Cocking his pistol, he took careful aim at a spot he thought would be the heart area and prepared himself to try and get off several shots if possible. The first shot made the gator jump and in quick succession Dad got off three more shots as the gator was then into the water and making a big commotion.

The gator submerged and after waiting around for some time, and upon seeing fine bubbles coming to the surface he knew the gator was still there and might not come up for quite a while and he left with his men and went home.

Going back to the bridge early the next afternoon to see if the gator was there, he climbed under the bridge and there half in and half out of the water lay the gator and by the flies buzzing around its head, he knew it was dead.

Dad was elated, he had thought about the skin of the gator, he wanted it and now it was dead. He had killed it and it was his. Little did he know of the effort it would be to get this gator to a place to skin him which would be at the railroad section house where we lived, located on North Flagler, between 6th and 8th St.

He would hang him from the large mangro tree behind the house and skin him out. He got his men together along with ropes, shovels, hoers, rakes and pitch forks and they went to work trying to get the gator out of the canal and upon the bank.

This gator weighed close to four hundred pounds and it was almost impossible to drag once out of the water. Nothing they could do would get the gator from under the bridge and up the bank. Dad went to Powell Ford

REWARD

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THAT OCCURRED ON APRIL 11, 2024 AT APPROXIMATELY 1:17 A.M. AT THE EXTENDED STAY AMERICA HOTEL AT 1200 S.W. 11TH WAY DEERFIELD BEACH, FL.

(PHOTO OF THE VICTIM)

ANYONE WITH INFORMATION ABOUT THE IDENTITY OR LOCATION OF THE SUSPECT(S) IS ASKED TO CALL CRIME STOPPERS. WE DO NOT WANT YOUR NAME, JUST YOUR INFORMATION!

CRIME STOPPERS

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

38th Annual Pompano Beach Seafood Festival

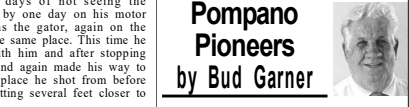
Offering Lower Admission Prices Pompano Community Park 1660 NE 10th Street - Saturday, April 20th

The 38th Annual Pompano Beach Seafood Festival returns to Community Park on Saturday, April 20th and Sunday, April 21st. Throughout its long history, the Seafood Festival has been a favorite of locals and visitors featuring a mix of seafood, music and retail vendors. The Seafood Festival hours are Saturday from 11:00 a.m. until 10:00 p.m. and Sunday from 11:00 a.m. until 7:00 p.m. Admission for a weekend pass is \$20.00. A single day admission is \$15.00.

The non-profit festival has its roots in the local community and is a primary source of revenue for many local charities and civic organizations, who oversee and operate the festival. Participating organizations include Pompano Beach High School, Blanche Ely High School, the Boy Scouts of America, Soroptimist, Pompano Lighthouse Rotary, Kiwanis of Pompano Beach, Kiwanis West Side, Pompano Proud, Women in Financial Services, Shipwreck Beach and the Greater Pompano Beach Chamber of Commerce.

The festival returns to its traditional Saturday and Sunday format but has eliminated Friday night. Admission prices have been cut in half, from \$20.00 per day to \$20.00 for the entire weekend, with single day admission reduced to \$15.00. All parking within the park, a \$10.00 fee last year, will be free. There will still be preferred \$10.00 parking at Pompano Beach High School adjacent to the entrance.

Several new seafood vendors are participating this year, giving the food court an even greater va-



riety of both seafood and non-seafood items with plenty of seating for dining on the top of the Amphitheater overlooking the festival. More than 120 vendor booths will feature everything from arts and crafts, to clothing, to commercial vendors and boat and car displays.

The festival is headlined by a great line-up of top bands featuring many South Florida favorites, along with a few new twists to spice things up.

On Saturday, The Hahrah's Main Stage will come alive with a special "Blues Jam" at 1:15. Saturday's line-up also includes "Vibes Farm", "The Flyers", "Shaw Davis and the Black Ties", "Crazy Fingers", and will end the evening with Tampa based "Home Grown" A Zac Brown Experience. Sunday features "Killbills", "Tasty Vibrations", "The Boss Project" (Springsteen Tribute), and back once again to close out the day is St. Pete based Funk/Rock Band "Ajeva".

Broward Health's Pompano Jacks Tent / Stage, new this year, is designed with a more laid-back atmosphere. With so much to see and do at the festival, this will be a place where visitors can simply relax and listen to live music in the shade or on the grass, while enjoying their food and a cold beverage. Throughout the weekend, enjoy local favorites including Andrew Morris, Mark Zaden, Shannon Battle, and more.

Complete information with full music schedules, frequently asked questions, directions, parking information and on-line tickets can be found at www.pompanobeachseafoodfestival.com.

Composting Kit Giveaway Event

1660 NE 10th Street Saturday, April 20th 9:00 am - 2:00 pm

The City of Pompano Beach Environmental Services Department is offering its residents a free composting kit on Saturday, April 20th from 9:00 a.m. to 2:00 p.m. at 1660 NE 10th Street. The event will be held rain or shine. Do your part to keep waste out of the landfills! The composting kit includes "The Earth Machine" and a collection basket for use in your kitchen. The Earth Machine is an 80-gallon durable backyard compost bin designed to compost food and yard waste, effectively diverting it from landfills.

Composting is the natural process of recycling organic matter, such as leaves and food scraps, into a valuable fertilizer that can enrich soil and plants. Composting is a great way to recycle the organic waste we generate at home. Food scraps and garden waste combined make up more than 28 percent of what we throw away, according to the U.S. Environmental Protection Agency. Not only is food waste a significant burden on the environment, but processing it is costly.

There are various ways to use your finished compost. You can sprinkle compost on top or mix it into your flower and vegetable beds, gently rake compost into tree beds, blend it with potting soil to revitalize indoor plants, or spread it on top of the soil on your lawn as a soil amendment. Adding compost to your garden helps improve the structure and overall health of your soil. Compost will help the soil retain moisture and will increase your overall earthworm and microbial population, which serve as biological controls against unwanted pests. In addition, compost will provide a slow release of macronutrients, which means that your plantings will get a steady supply of nutrients as needed.

There is no cost to residents of Pompano Beach for the composting kit. Proof of Pompano Beach residency is required. One Earth Machine per single family residence.

Battling The Troll-Gator

The tracks of the Florida East Coast Railway cross-over many rivers and canals in the 350 miles or so of its North-South span. The track crosses over Cypress Creek and the Pompano Canal in the section designated mile post and section 333 in a 5 mile stretch from Sample Road to the North and South of Cypress Creek in the Pompano area.



The bridges that spanned these waterways were of great concern to the railroad and where road. Any large amounts of water running under these bridges posed a constant threat to the railroad bed on and at each end of the bridge, therefore great care was taken to maintain and keep it clear of debris and grass in the water passage channels under these spans to prevent a washout and consequently creating a train-wreck hazard.

The section foreman and his track crew were held responsible by the railroad for the maintenance of these places. This story relates one of the many problems that was encountered in the course of fulfilling these obligations. My Dad, J.E. Garner Sr., was the track foreman for this section designated "333" in the year 1937 when this story occurred. The area under the bridge at Dixie highway and where Atlantic Blvd. now meet was a wide, but low span with heavy 12" x 12" pilings driven into the canal bed and on top sat the heavy timbers that the dual tracks were bolted to.

The area at normal water levels on both sides and under the bridge had a gravel/sand slope from the water's edge about eight or ten feet to the top and kept clean and clear of weeds and trash. The area under the bridge was also used as a temporary "hobo" hangout while waiting for or just resting from a freight train ride.

alligator lying on the bank in the sun or swimming in the canal and some of them were concerned for this was an extremely large gator and being in such close proximity to it was unnerving to say the least.

One day a hobo told him that he suspected the gator had attacked a North end with one of the Bos' after dark, he said he heard a large splash and then noticed one of the men that had been camping under the bridge was missing and no one had seen or heard of him after that.

Dad started watching for the gator and he eased down under the bridge on one of the warm afternoons he saw him sunning himself on the bank. He went back to the house where he got out his long Smith/Wesson 38 caliber pistol with his old barrel, put six rounds in it and set off for the canal.

The gator was still lying on the bank and he eased down under the bridge on one of the warm afternoons he saw him sunning himself on the bank. He went back to the house where he got out his long Smith/Wesson 38 caliber pistol with his old barrel, put six rounds in it and set off for the canal.

When the gun fired, the gator went almost straight up spun around and into the water, and was gone. After waiting around for some time, Dad figured he must have missed or had only wounded him. (Later examination of the gator showed that indeed he had been hit but the bullet only broken his thick hide and not penetrated his skull.)

Pompano Pioneers by Bud Garner

which was about two blocks away and a salesman for Powell, Gene Spear, had their wrecker go over and backed it as close as they could to the edge, put a chain around the gator, put the hook on the end of the cable in the chain and winched the gator out.

Taking the gator through the middle of town hanging on the back of the wrecker created quite a stir and several people followed to the place they would hang him. This proved to be a chore, finally with the aid of all the extra help and the winch of the wrecker, the gator was hung in the tree by his tail.

The gator measured fourteen feet long, many of the people there said it was the largest gator ever seen in these parts.

Also, of the five shots Dad fired from the old S&W all of them hit the gator. Of the last four, three of them went into the area. Dad thought he hit. They must have been effective to kill a gator of that size with a pistol.

Once again, my dad was faced with a dilemma, how would he ever get this thing skinned, and the carcass disposed of. The gator hanging in the tree was too close and too long to be reached and furthermore, the hide was as tough as "wheat leather." What to do? What had seemed a good idea had now become a monumental problem. The solution appeared in the form of a Seminole Indian driving an old model A Ford truck with a flat bed. He had heard of the huge gator and was coming to see my Dad about making a deal.

His proposition, he would take the gator to his place in the Everglades, skin him, keep the meat for himself and return the skin to Dad, as simple as that.

This was just too good an offer to refuse, CONTINUED ON PAGE 2

NEWS...

CONTINUED FROM PAGE 1

located Justus Whittle and Shakeil Brown suffering from multiple gunshot wounds. Paramedics pronounced Whittle deceased on scene and transported Brown to an area hospital, where he died. According to witnesses, Whittle attempted to fight Brown over an ongoing feud. During the altercation, another subject attempted to defuse the fight when Whittle pulled out a gun and fired multiple shots. The subject, who was also armed, then pulled out his weapon and returned fire.

The subject was taken into custody for questioning and later released. Detectives say, upon completion of their investigation, the case will be presented to the Broward County State Attorney's Office for review.

The investigation continues.

March hit-and-run kills motorcyclist

The motorcyclist struck by a hit-and-run driver last month in Deerfield Beach has died from his injuries. The Broward Sheriff's Office Traffic Homicide Unit is continuing to seek clues to locate the driver who struck him.

According to investigators, around 10:23 p.m. on Monday, March 11, Broward County Regional Communications received reports of a hit-and-run crash involving a car and a motorcycle in the intersection of Southwest 10th Street and South Dixie Highway in Deerfield Beach. BSO deputies and Broward Sheriff Fire Rescue responded.

The preliminary investigation reveals that the driver of a silver 2016-2019 Hyundai Elantra sedan was traveling eastbound on Southwest 10th Street as Clifford Jackson, the driver of a 2006 Honda CRF 1000 motorcycle, was heading westbound on the same road. When the driver of the Hyundai entered the intersection and struck a left turn, he drove north on South Dixie Highway, the driver turned directly into the path of the motorcyclist.

The motorcyclist struck the passenger side of the car in a sideswipe collision, and Jackson was thrown to the ground. The driver of the vehicle continued north on South Dixie Highway. Paramedics transported Jackson to the hospital. On March 23, doctors pronounced Jackson deceased at Broward Health North.

Anyone with information on the driver or vehicle involved in this hit-and-run crash is asked to contact BSO THH Detective Michael Wiley at 954-321-4341 or submit a tip through the SaferWatch 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.

MEDIA NOTE: Members of Clifford Jackson's family and the

Bud Garner

CONTINUED FROM PAGE 1

the gator would be gone. Dad would get the skin and with no more effort on his part. He quickly agreed to this. He called out his men they lived alongside the tracks adjacent to the foreman's house.) The Indian backed his truck under the gator, cut him down, positioning him on the truck. The Indian led, driving South on Flagler, crossed the tracks at NE 6th St. turning South on Dixie Highway.

"That was the last time the Indian or the gator was ever seen." This didn't rid the Pompano canal of gators, far from it, but I believe this gator is the biggest one ever seen there and one that size could easily kill and eat anything that ventured too close to the water's edge. Like The Troll that lived under the bridge in the story "Three Billy Goats Gruff" this huge gator stalked out his territory under the Pompano bridge and had to be dealt with for the safety of others.

Wings n' Things

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lead detective will be available for interviews at 11 a.m. on Thursday, April 11, at BSO's Public Safety Building, located at 2601 W. Broward Blvd. in Fort Lauderdale.

Man arrested in fatal shooting of 13-year-old

Broward Sheriff's Office Homicide Unit detectives arrested a man on Thursday in connection with a shooting that left a North Lauderdale teen dead.

At approximately 10:42 p.m. on Monday, Aug. 21, 2023, Broward County Regional Communications received a report of shots fired near the 7400 block of Southwest 12th Court in North Lauderdale. BSO district deputies responded to the scene and located a female juvenile suffering from a gunshot wound. Deputies immediately started life-saving measures. North Lauderdale Fire Rescue responded, and BSO Aviation Unit transported the victim, Samyah James, to Broward Health Medical Center, where she was pronounced deceased at 11:31 p.m.

BSO Homicide Unit and Crime Scene detectives responded to the scene to investigate. The preliminary investigation revealed there was an argument between James and occupants of a vehicle outside of a residence on Southwest 12th Court. At some point, a subject inside of the vehicle shot James. The suspect vehicle then fled from that location. Through investigative methods, detectives identified the shooter as 22-year-old Christopher Marc.

On Thursday, April 11, detectives located Marc in Pompano Beach and arrested him for manslaughter with a firearm. He was transported to the Broward County Main Jail.

BSO investigates deadly shooting in Deerfield Beach

A man died from his injuries after being shot in Deerfield Beach early Wednesday morning, and the Broward Sheriff's Office Homicide Unit is investigating the case.

At approximately 1:17 a.m. on Wednesday, April 10, Broward County Regional Communications received a report of a shooting victim at 1200 S.W. 11th Way in Deerfield Beach. BSO deputies and Broward Sheriff's Fire Rescue responded. On scene, deputies located an adult male, Bobby Abernathy, in a parking lot who had been shot. Paramedics took Abernathy to Broward Health North hospital with life-threatening injuries. Later that day, doctors pronounced Abernathy deceased.

BSO's Violent Crimes and Crime Scene units initially responded to investigate. Following Abernathy's death, BSO's Homicide Unit took over the investigation.

Anyone with information on this incident is asked to contact BSO Homicide Unit Detective Kristina Luna at 954-321-4210 or submit a tip through the SaferWatch app. If you wish to remain anonymous, please contact Broward Crime Stoppers at 954-493-TIPS (8477), online at browardcrimestoppers.org, or dial **TIPS (8477) from any cellphone in the United States.

Everything you need to know about traveling in the summer of 2024

Summer travel in 2024 will be "expensive in every way," says Katharine Nohr. And she should know.

She's planning a two-week adventure to Europe in June, which starts with a marathon flight from Honolulu to Zurich, where she'll speak at a conference. Then she's hopscoching across Europe -- to Vienna, then on to the Olympics. She's made plans to be in Nantes, France, to watch a soccer game, Lille for basketball and Paris for gymnastics, boxing and swimming.

All told, it'll set her back five figures despite her best efforts, which include flying economy class and staying in the lowest-priced hotels.

"The trip is pricey, even with my efforts to economize," says Nohr, an attorney from Honolulu. "But it's a once-in-my-life adventure."

Summer travelers are pursuing exciting expensive vacations. Nohr is part of a wave of travelers that are making big plans for this summer. The itineraries are exciting -- and expensive.

Pretty much every barometer of travel intent is up for the summer travel season. Inflation and unemployment are low, and consumer sentiment and curiosity are high, fueling an unprecedented interest in travel during the summer of 2024.

"Bookings are rising," says Susan Sherren, who runs Couture Trips, a travel agency. "Unfortunately, hotel, tour, and air prices are not falling. So, if you air on hitting the road this summer, make sure you are willing to splash some cash."

Travel companies say they're overwhelmed with summer reservations.

"The travel economy is booming," says Joe Iacaci, owner of Vacat Hampton Boating Club, a company that rents yachts in Sag Harbor, N.Y. He's seeing a 40 percent increase in rentals this summer compared to last year as Americans shift some of their vacation dollars to domestic destinations.

Prices aren't the only thing trending higher. People's expectations for their summer vacation are also higher than at any time since the pandemic, says Sangeeta Sadarangani, CEO of Crossing, a multinational travel agency headquartered in London.

"They're embracing the unknown," she says.

And one of the great unknowns is travel prices. How much higher will they be?

What will prices be like this summer?

It depends on where you're going. There's good news if you're traveling within the U.S.: flights and hotels are a little less expensive than last summer. But they're rising elsewhere. Here's the breakdown:

Airfares are mixed. Domestic roundtrip airfares for summer are averaging \$325 per flight, which is down 5 percent from last year, according to the travel platform Hopper. Flights to Europe are cheaper, too. They've fallen 12 percent from last year to \$1,012. But flights to South America are up 4 percent and flights to Canada have risen 5 percent. You'll pay an average of \$759 to fly south of the border and \$430 to head north.

U.S. hotel rates are down. Domestically, they're down 7 percent to an average of \$304 per night. Internationally, they're up 2 percent to \$314 per night, according to Kayak.

Car rental prices are rising. Average domestic car rental rates are up 10 percent this summer to \$113 per day, according to Kayak. Last summer, rates dropped 14 percent after the car rental shortage ended. Internationally, rates are up 3 percent to an average of \$88 per day.

But you can avoid the high prices with a little strategic planning, experts say.

What to avoid this summer

American travelers are becoming more predictable in their summer vacation choices, says John Lovell, president of Travel Leaders Group. Immediately after the pandemic, they embarked on "revenge" vacations to far-flung locations. Now they're returning to more conventional vacations.

"We continue to see U.S. travelers heading back to the more traditional locations across Europe this year, like London, Rome, Athens and Munich," he says.

There are places that will be exceptionally busy -- and exceptionally pricey -- this summer.

Paris during the Olympics. The Olympic Games are taking place -- in Paris this summer. Rooms are more than double the normal rates, which is typical of the Olympics.

Paris is already crowded with tourists during the summer, so you can probably imagine what it will be like with the Olympics. Zut, alors!

Taylor Swift is touring Europe this summer. Prices will be pretty much the better. Hopping, recommending, buying your airfare two to three months before your departure for domestic flights, and for international -- well, it's probably too late to get that rock-bottom deal on your flight to Germany in June. There's the Tour de France in July, which begins in Florence and finishes in Nice. France is also hosting the Paralympic Games in August and September, which will take place in Paris, Nice, Marseille and Bordeaux.

When is the best time to book a 2024 summer vacation?

Once this is going to be a busy one, the sooner you book, the better. Hopper recommends buying your airfare two to three months before your departure for domestic flights, and for international -- well, it's probably too late to get that rock-bottom deal on your flight to Germany in June. There's the Tour de France in July, which begins in Florence and finishes in Nice. France is also hosting the Paralympic Games in August and September, which will take place in Paris, Nice, Marseille and Bordeaux.

Also, if you're going overseas, remember the calendar is different. For example, half of Europe shuts down during August for summer vacation. It's worth a look-up, otherwise, you could face some real disappointments.

Strategies for traveling better during the summer

One tactic that consistently works is splitting your getaway into two sections. Take that required summer vacation and split it into two. It's less expensive during the high season. Then, wait until shoulder season for the big trip.

That's what Ross Copas, a retired electrician from Tweed, Canada, is doing during the summer of 2024. It's a road trip across the northern U.S. by motorcycle -- New York to Washington State, and then back east through Canada.

Then he's heading to Amsterdam in September for a 23-day European river cruise. He says the late summer getaway will be costly, but he doubts fares will fall anytime soon. "So price be damned," he adds.

Actually, that's pretty smart. I took the same cruise he's planning on Viking River Cruises many years ago, and it was worth every penny.

With hotel rates rising in some places this summer, this is the right time to consider alternatives. Monica

Fish, a writer from Glen Rock, N.J., is headed to Ireland to catch one of Taylor Swift's performances. She says hotel rooms in Dublin are overpriced if they're even available. But Fish found an affordable vacation rental.

"We just had to book it farther in advance than we normally would," she says.

Go ahead, follow the crowds this summer

I think it's fine to follow the crowds this summer. I'll be doing it. I'm planning to rent an apartment for a month in Switzerland with Blueground, a long-term apartment rental company. Then I'm crashing on a friend's sofa in Spain, then heading to Sweden to see other friends and visiting my brother in Finland. Yes, travel writers know people everywhere.

But don't follow the crowds off a cliff. There are places even I won't go. I might take the four-hour train trip from Zurich to Paris in June to check out my favorite patisseries, but I wouldn't go anywhere near the City of Lights during the summer games in July unless I made a reservation a long time ago.

And Taylor Swift? Pub-leeze. I'm more of a jazz guy.

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

Jiffy Lube ruined my car's engine. Why won't it pay for the repairs?



Illustration by Dustin Elliott

The engine in Ali Cotton's Nissan Altima is damaged after he brings it to Jiffy Lube for an inspection. Does the company have to pay his \$12,998 repair bill?

Q: I went to Jiffy Lube for an inspection. They somehow removed my oil plug and drained all my oil out, which ultimately ruined the engine.

I had my car towed to the dealership, which confirmed that the oil plug was missing and the engine was ruined. The repairs on my 2016 Nissan Altima will cost \$12,998. Can you help me get Jiffy Lube to compensate me for the damage? -- Ali Cotton, Chapel Hill, N.C.

A: Jiffy Lube should have inspected your car -- not drained the oil without replacing it.

You had some compelling evidence that Jiffy was at fault, which you sent to the company in writing. It looks like you gave Jiffy Lube every chance to respond to your request. You sent an email to the corporate office, which deferred to the franchisee. Then you contacted the franchisee but did not hear back.

This isn't the first Jiffy Lube case involving a damaged engine. My advocacy team and I resolved a similar problem for one of our readers a few months ago.

Jiffy Lube offers a limited repair warranty that should cover your damage. It covers "Engine performance, drivability services and repairs" for 12 months or 12,000 miles, so it looks like it would apply to your damaged engine.

One of the problems with making a warranty claim is proving that the damage happened when you had your car serviced by Jiffy Lube. How can you prove that it wasn't something else? In your case, it appears Jiffy Lube inspected your Nissan Altima and gave it a green light, meaning that your car was in good shape. Immediately after that, your engine light went on and you sustained \$12,998 in damage to your engine.

Jiffy Lube should have responded to your request, but it looks as if it didn't, based on the paper trail you provided. When that happens, you need to escalate your case to a higher level. I publish the names, numbers and email addresses of the customer service executives at Jiffy Lube on my consumer advocacy site, Elliott.org.

You reached out to my advocacy team for help. I negotiated Jiffy Lube on your behalf. A manager called you, and after some negotiation, Jiffy Lube agreed to cover \$9,000 of your repair bill, which you accepted.

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

How to reverse insulin resistance



Gerald I. Shulman, MD, PhD, George R. Cowgill Professor of Medicine (Endocrinology) and Cellular and Molecular Physiology, Investigator Emeritus of the Howard Hughes Medical Institute, and co-director of the Yale Diabetes Research Center, studies the molecular basis for insulin resistance, a condition found in approximately 40 percent of U.S. adults.

"One of the major threats to global health in the 21st century, insulin resistance is a key factor in the development of type 2 diabetes, cardiovascular disease, fatty liver disease, neurodegenerative disease, and obesity-associated cancers," Shulman said. "Understanding the molecular basis for insulin resistance can lead to novel therapies that help prevent these diseases."

Shulman is the recipient of numerous awards, including the American Diabetes Association's Banting Medal for Scientific Achievement, the European Association for the Study of Diabetes-Lilly Centennial Anniversary Prize, the American Society of Clinical Investigation's Insulin-Resistant Korsmeyer Award, and the Endocrine Society's Outstanding Clinical Investigator Award. Most recently, he was selected for the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist award, which recognizes a member of the American Physiological Society who has made outstanding contributions to research and to training the next generation of physiologists.

In a Q&A, Shulman discusses the basics of insulin resistance, how the condition impacts our health, and the steps we can take to reverse it.

What is insulin resistance?

FDA authorizes COVID drug Pempgarda for high-risk patients

The Food and Drug Administration (FDA) granted an emergency use authorization (EUA) to a medicine meant to protect certain immunocompromised people against COVID-19.

The medicine, pemivbart (brand name Pempgarda™), is for people who are at least 12 years of age, weigh more than 88 pounds, and are moderately to severely immunocompromised.

An EUA is a tool the FDA uses to expedite the availability of drugs, vaccines, and other products during a public health emergency. It should not be confused with the public health emergency for COVID officially expired in May 2023, the FDA can still issue EUAs related to it.

"This medication provides important protection for immunocompromised, a population that is more likely to have serious COVID illness and a higher mortality rate," says Scott Roberts, MD, a Yale Medicine infectious diseases specialist.

Being immunocompromised means your immune system doesn't work as well as it should to protect against infection because of a medical condition, such as cancer, that weakens immune function or because you receive medicines or treatments, such as immunotherapy, that suppress the immune system.

"The population identified as moderately to severely immunocompromised includes solid organ transplant recipients, stem cell transplant recipients, and those who are on chemotherapy for cancers such as lymphoma and leukemia, among many others," Dr. Roberts explains. (The Centers for Disease Control and Prevention (CDC) provides a more detailed list.) Approximately 3% of adults in the United States are immunocompromised.

"This group is also less likely to build enough protection against COVID after vaccination. For these patients, the pandemic is not over," says Dr. Roberts. "Hopefully, this new treatment will help the vulnerable feel safer."

Below, we talk more about Pempgarda with Dr. Roberts.

Why isn't COVID vaccination as effective in immunocompromised individuals? Those who are not

The hormone insulin, which is produced by the pancreas, regulates blood glucose or sugar from the food we eat, by allowing it to enter the body's cells, where it is used for energy. Insulin resistance—found in both lean and overweight individuals—is when the body's cells don't effectively respond to insulin and take in glucose, leading to high blood sugar levels.

My lab has found that insulin resistance in liver and skeletal muscle, the organs where insulin normally promotes glucose storage as glycogen, is linked to increased ectopic lipid accumulation, or fat accumulation inside the liver and muscle cells.

Why has evolution preserved insulin resistance, something we think of as a deleterious process? It turns out insulin resistance is activated during starvation. During starvation, your body breaks down stored lipid in the white adipose tissue, which becomes mobilized and leads to fat accumulation in liver and muscle cells. These organs become insulin-resistant, which in turn preserves glucose in the bloodstream to fuel brain metabolism and other obligatory glucose-requiring cells in the body (e.g., red blood cells). In this way, insulin resistance is a normal physiological process that has promoted survival from starvation in mammals throughout evolution.

But now, insulin resistance is activated by overnutrition in our toxic food environment.

Insulin resistance is the major reason people go on to develop type 2 diabetes. The condition also results in metabolic dysfunction-

associated steatotic liver disease, in which the body stores excess fat in the liver, and steatohepatitis, which can progress to end-stage liver disease and liver cancer.

Muscle insulin resistance also leads to increased plasma triglycerides and LDL, the bad cholesterol, which are major contributors to heart disease.

Insulin resistance is also associated with obesity-related cancers. When you're insulin resistant, your pancreas produces more insulin, which promotes tissue growth. In preclinical studies, my collaborators and I have shown that insulin resistance promotes the growth of breast and colon cancers.

Finally, insulin resistance is likely a major driver of Alzheimer's disease.

Our research has shown that modest weight reduction due to caloric restriction to about 1,200 calories a day leads to a reduction of liver fat and reversal of liver insulin resistance and type 2 diabetes. You don't have to get down to the weight you were in high school—a 10% weight reduction can make a major difference. This is also likely the major mechanism by which the new GLP-1 agonist medications are working to reverse type 2 diabetes.

We have also learned that exercise opens the door for glucose transport into the muscle cells by bypassing the block in insulin action. If you have muscle insulin resistance, you can normalize the storage of ingested carbohydrate into the muscle as glycogen, decreasing the conversion of carbohydrate to fat in the liver. This, in turn, leads to protection from the development of fatty liver disease and improvement in the plasma lipid profile, which will protect against the development of atherosclerosis.

I encourage my patients with diabetes or prediabetes to find a physical activity they like to do every day and stick with it. As we deepen our understanding of the molecular basis of insulin resistance and develop new drugs to target this mechanism, I'm optimistic about the future of treating insulin resistance and improving cardiometabolic health.

Yale School of Medicine's Section of Endocrinology and Metabolism works to improve the health of individuals with endocrine and metabolic diseases by advancing scientific knowledge, applying new information to patient care, and training the next generation of physicians and scientists to become leaders in the field. To learn more, visit Endocrinology & Metabolism.

immunocompromised most likely have a strong mix of "hybrid" immunity to COVID at this point,

individuals after vaccination," says Dr. Roberts.

It is given as an infusion in a medical setting and takes about an hour to complete. Patients can get a dose of the medication as often as every three months.

A previous mAb treatment, Evusheld™, was authorized by the FDA in 2021 to prevent COVID in immunocompromised patients. However, the medication proved ineffective against newer COVID variants and was taken off the market in January 2023.

Pempgarda was granted an EUA based on data from an ongoing Phase 3 CANOPY clinical trial, as well as efficacy data from previous clinical trials of adintrevimab, the parent mAb for pemivbart, and other monoclonal antibody products.

In trials, adintrevimab was associated with an approximate 70% risk reduction of developing symptomatic COVID-19 compared to a placebo, according to Invivyd, the company that makes the drug. The CANOPY studies were done when the JN.1 subvariant was circulating. JN.1 is still the predominant coronavirus subvariant.

In the trial, 623 participants received at least one dose of the drug. The most common side effects included skin reactions at the infusion site, cold and flu-like illness, headache, fatigue, and nausea. For people who had anaphylaxis (a severe allergic reaction),

"For patients who are worried about the trade-off, I think it requires a risk-benefit analysis," says Dr. Roberts. "I think in most cases the benefit is going to outweigh the risk of anaphylaxis, especially if doctors can mitigate it by having medications such as an Epi-pen on hand in case a patient does have a severe allergic reaction."

Immunocompromised people who are interested in taking Pempgarda should talk to their doctor. "It might be better for some patients to talk to a specialist first—for instance, if an individual has cancer, it might be best for them to talk to their oncologist about whether this drug is right for them," Dr. Roberts advises. The medication is expected to be available in April. For people who are not yet insured, but Medicare and private insurance plans are expected to cover it, according to news reports.

Why your cardiologist may prescribe Semaglutide (Wegovy)

Can a popular anti-obesity medication lower your chances of a heart attack, stroke, or cardiovascular death? In March, the Food and Drug Administration (FDA) approved semaglutide (brand name: Wegovy®) for just that purpose after a study published last November showed that the medication lowers the risk of people's risk for those events by as much as 20%. People can now take this medication if they have obesity and have cardiovascular disease. A separate study by Yale researchers showed that as many as 6.6 million Americans fit these criteria.

Semaglutide attracted considerable attention in 2017 when the medication, given under the brand name Ozempic®, received FDA approval for lowering blood sugar in people with type 2 diabetes. Later, its label was expanded, though an FDA approval, to include a reduction in the risk of major heart events in the same group. In 2021, the FDA gave the green light to Wegovy to help people with obesity or overweight lose weight (Ozempic and Wegovy are both in the same molecule—semaglutide—and are made and sold by Novo Nordisk.)

In 2023, clinical trial called Semaglutide Effects on Cardiovascular Outcomes in People with Overweight or Obesity (SELECT) showed that Wegovy can significantly reduce the risk of major heart events—this time in people with extra weight and a cardiovascular disease. Now, the FDA has expanded Wegovy's approval to help this group.

"The SELECT trial is a major breakthrough," says Yale Medicine cardiologist Dr. Krumholz, MD, SM, explaining that while semaglutide [given as Ozempic] was already known to lower the risk of heart disease in people with diabetes, the SELECT trial was the first to show that Wegovy, which contains a higher dose of semaglutide, also lowers the risk even in people who don't have diabetes.

There is an enormous number of Americans who are eligible for this," says Dr. Krumholz, who is also director of the Center for Outcomes Research and Evaluation (CORE).

A majority of people with cardiovascular disease do not have diabetes, adds Ania Jastreboff, MD, PhD, a Yale Medicine endocrinologist, who is an expert in obesity medicine and director of the Yale Obesity Research Center (Y-Weat). "The lifetime risk of

cardiovascular disease in people with obesity but without diabetes is about one in two women and about two in three men," she says. "The results from the SELECT trial are a call to action."

study also did not show whether semaglutide can reduce cardiovascular risk associated with overweight and obesity in people who do not already have a cardiovascular condition. "But future studies may show that people with obesity, even without heart disease, have meaningful reductions in their risk for major cardiovascular disease," Dr. Krumholz says.

2. How many people could benefit from the cardiovascular effects of Wegovy?

A follow-up study by Yale, published in *Circulation: Cardiovascular Quality and Outcomes*, estimated that 6.6 million Americans with obesity and cardiovascular conditions, but not diabetes, could benefit from semaglutide, Dr. Krumholz estimates. The researchers combed through national registries, looking for people with the same characteristics as those in the SELECT trial and extrapolating that representative group to the population of the entire nation.

Because Wegovy has the potential to help such a large number of people, making it more available and accessible could change how cardiovascular disease is treated, Dr. Krumholz explains.

"We've been stymied over the last decade in cardiology," Dr. Krumholz says. "Our progress against heart disease slowed and even reversed, and the obesity epidemic has been a main contributor to that. But we lacked a way to target it directly."

As a result, doctors focused on treating heart disease with conditions like high blood pressure and high cholesterol. "Now, we may be able to treat obesity directly, which could turn the tide on the current trends in heart disease."

3. Are there any side effects associated with Wegovy?

The FDA cautions that Wegovy carries the risk of such side effects as nausea, diarrhea, constipation, and vomiting; low blood sugar in people taking other medications for diabetes; pancreas or gallbladder problems; eye problems in people with diabetes; and suicidal behavior or thinking. About a third of the SELECT trial participants reported serious side effects, and about 17% in the group that took Wegovy and 8% of those who received a placebo left the study for that reason.

However, Dr. Krumholz says most people tolerate the drug well when administered gradually, increasing the dose a little every week. "The trial data is strong and convincing, and there's already a long line of safety and effectiveness data from people with diabetes who have taken the drug," he says.

How anti-obesity medications can help with surgery

Wegovy®, Zepbound®, and similar medications continue to gain attention for effectively treating obesity, and now there is discussion—by research—understanding about their potential for improving certain surgical outcomes.

The brand-name medications mentioned above belong to a class called GLP-1 (glucagon-like peptide-1) agonists. GLP-1 mimics the actions of the GLP-1 hormone, which is secreted in the gut and sends an "I'm full" signal to the brain after you eat.

GLP-1 medications aren't new. Ozempic (the brand name semaglutide) received approval from the U.S. Food and Drug Administration (FDA) to treat type 2 diabetes in 2017. After its weight-loss effects were studied, Wegovy (the higher dose and sold under the name Wegovy) was approved by the FDA as an anti-obesity medication in 2021, and others have since followed.

Most recently, the FDA approved Wegovy for patients with cardiovascular disease and obesity or overweight after a study showed that those taking the medication had a lower overall risk of major cardiovascular events, such as heart attack, stroke, or cardiovascular-related death.

Now, some Yale Medicine surgeons believe, based on their ongoing research, that taking anti-obesity medications before and sometimes after total joint replacement and bariatric surgery can be beneficial.

"These medications have been transformative, in terms of expanding the number of people who can safely undergo joint replacement surgery," says Daniel Woznia, MD, a Yale Medicine orthopaedic surgeon and co-director of the Avascular Necrosis Program. "These anti-obesity medications are game-changers; they are changing the way people practice medicine."

Often, patients who need a total hip or knee replacement must delay surgery until they lose enough weight to meet specific body mass index (BMI) standards. This is important in protecting the patient's health. "Weight increases a patient's risk of postoperative complications, including pneumonia, stroke, heart attack,

blood clots, and infection," he says.

However, having patients take a GLP-1 medication before surgery, as well as improving their diet, has allowed more patients to reach safe preoperative BMI, Dr. Woznia says.

Likewise, John Morton, MD, MPH, medical director of bariatric surgery at the Yale New Haven Health System, says he has found that putting patients on GLP-1s before weight-loss surgery helps them achieve better results.

Still, there are many unknowns, including whether patients will need to stay on anti-obesity medications after surgery and whether insurance will cover the cost of the drugs.

Below, we talk more with Drs. Woznia and Morton about the use of anti-obesity medications before surgery.

How are anti-obesity medications used to help people who need joint replacement surgery?

Someone might need a total hip or knee replacement if they have arthritis, broken bones, or other orthopaedic conditions, and more conservative treatment options (such as medications or modifying daily activities) have not helped.

In the United States, more than 790,000 total knee replacements and more than 450,000 total hip replacements are performed each year, and those numbers are expected to grow as the Baby Boomer population ages. Obesity, which affects about 42% of adults, is also believed to be a major factor in driving up the number of total joint replacements. That's because excess weight puts additional stress on weight-bearing joints.

Because people with obesity have a higher risk of complications during and after surgery, some surgeons, hospitals, and insurance carriers have BMI cut-offs for patients undergoing elective joint replacement surgery. For example, institutions may require that patients have a BMI within a certain range, such as between 35 and 40, in order for their joint replacement surgery to be covered by insurance. (BMI is determined by dividing your weight by the square of your height. Obesity is defined as 30 and above.)

"If I am operating on someone with obesity, the surgery is far more complex—for instance, we will need special implant devices, closure devices, and surgical tools," Dr. Woznia says.

If a patient with obesity needs joint replacement surgery, Dr. Woznia says he works with them to explore weight-loss options, including a referral to a Yale Medicine Center for Weight Management to consider anti-obesity medications or bariatric surgery.

"I tell my patients that if they can get to a certain weight, we can do the joint replacement surgery with a potentially lower risk of complications. Some patients want to start by working on their diet; some want to try medications. I can also refer them to a nutritionist, or they can work with a dietitian or a physician or an endocrinologist," Dr. Woznia says.

Can anti-obesity medications and bariatric surgery work together?

When it comes to weight loss, it doesn't have to be a choice between anti-obesity medications and bariatric surgery—the two can work together, says Dr. Morton, who is also board-certified in obesity medicine.

"We know that losing weight before an elective surgery can decrease the risk of complications. Because of this, we have been advocating for weight loss prior to orthopaedic and hernia procedures," Dr. Morton says. "I treat hernias, which often occur in patients who are heavier and sicker. We want to prepare them for surgery and get them to a weight that's a little before surgery. We have data showing that people who lose weight before surgery do better after surgery."

Bariatric surgery patients with a BMI higher than 50 are at higher risk for complications, Dr. Morton says. "So, we find that having patients use the GLP-1 medications before surgery helps."

Do patients need to stay on anti-obesity medications after surgery?

Because obesity is recognized as a chronic metabolic disease, patients who start taking anti-obesity medications for weight loss should expect to stay on them for a long time, possibly for life.

Shaping the future of artificial intelligence

"At Yale Law School we don't just teach students the law, we teach students how to teach artificial intelligence models the law," said Scott Shapiro '90, Charles F. Southmayd Professor of Law and Professor of Philosophy.

Shapiro's students are building an AI model for use in media law with the DoeProject, a program of the Media Freedom and Information Access (MFIA) clinic that provides pro bono legal representation for documentary filmmakers.

Shapiro teaches courses on the philosophy of law, cybersecurity, and AI. With support from the Tsai Leadership Program, he plans to lead an AI program in which students, programmers, and computer scientists will train "jurisprudentially responsible" AI models or use in legal clinics.

"One of the things people always say with AI is that data is sovereign and it's hard to get good data. Our students produce incredibly high-quality data that gets thrown away. We're trying to figure out how to recycle it and use it to train models," said Shapiro. "What if we could take this data and use it to handle more documentaries — because each student is building on the work previous students have done?"

AI poses risks for lawyers and the legal profession — including "privacy and cybersecurity risks, the generation of inaccurate content, copyright infringement, and other intellectual property issues," as noted by the office of the president of the American Bar Association. But it also represents tremendous opportunity. Long before ChatGPT became a household name, Yale Law faculty were immersed in learning about legal pathways to regulating AI — as well as the technology's potential to introduce efficiencies in legal education research and widen access to legal services.

Jack Balkin, Knight Professor of Constitutional Law and the First Amendment and founder and director of the Information Society Project (ISP), has been working on issues surrounding digital technology since the 1990s. He points out that the way people talk about AI now echoes the way they talked about the internet during its infancy. Balkin does not consider AI

as an "existential risk ... [although] it's not surprising that it's been treated that way because of the



great uncertainty surrounding it," he said. "When the internet was born, 'nobody could clearly see all of its potentials and dangers.' This is true of AI, too, he said.

Scott Shapiro teaching class of his courses. Professor Scott Shapiro takes a hands-on approach to using AI in legal education to better comprehend how it intersects with law.

But under the leadership of Dean Heather K. Gerken, Yale Law School has created physical and virtual space to explore the possibilities of AI for the legal profession, said Shapiro.

The Tsai Leadership Program is poised to take a leading role in AI at the Law School — hosting visits from leading AI experts, supporting faculty-led ventures, and enhancing the curriculum. For Shapiro, it's very good news. "Everyone is focusing on the bad things. [But] being able to service low-income households and clinics so they could handle more clients that's intellectually exciting and challenging. That's what motivates academics and scholars to solve problems people have always dreamed of solving," he said.

Everyone is focusing on the bad things [about AI]. But being able to service low-income households and clinics so they could handle more clients — that's intellectually exciting and challenging."

As AI technology has continued to evolve, Yale Law School's educational offerings. In a given week, students might attend a workshop on AI or seek library assistance with an AI product.

The discussions on AI are as interdisciplinary as the Law School itself. At the Solomon Center for Health Law and Policy at Yale Law School, a conversation that began with a groundbreaking conference in 2018 has continued to spotlight

legal, ethical, and equity issues surrounding AI in healthcare through panel events and faculty research.

Technology and Research Librarian Nor Ortiz shows the excitement of trying out virtual reality headsets.

Several classes at the Law School dig into problems posed by AI in different legal contexts. "Liability and Regulation at the Frontier of AI Development," taught by Associate Professor of Law Ketan Ramakrishnan '21, considers regula-

tory licensing and tort liability rules for harms caused by AI. In "Artificial Intelligence, the Legal Profession, and Procedure," a seminar led by Alexander M. Bickel Professor of Public Law William Eskridge '78, students consider whether AI is a course to automate legal procedure.

In the MFIA clinic, which Balkin founded and co-directs, students work on matters related to agency accountability and competition, participate in impact litigation, shape policy, and contribute to conversations on safe technology and the health of digital markets.

In 2021, MFIA began hosting the Tech Accountability & Competition project at the Law School with faculty supervision from Visiting Clinical Lecturer in Law David Dussel.

The project is dedicated to reducing harms caused by excessive use of power in digital markets. In Shapiro's AI classes and clinics, cross-disciplinary partnerships add depth to the subject. In 2016, Shapiro partnered with Gerard C. and Bernice Latrobe Smith Professor of International Law Oona Hathaway '97 and Professor John Feigenbaum, chair of the Computer Science Department at Yale, on a cross-disciplinary "Cyber Conflict" course. Shapiro later teamed up with Sean O'Brien, Lecturer in Law and the founder of the Privacy Lab initiative at ISP, to teach the first iteration of his Cybersecurity course (which is now available online, hosted by Lawfare) — in which students learned to hack, so as to understand how to approach cybercrime in their practice.

In 2022, Shapiro and his collaborator, Yale Associate Professor of Computer Science Rufa Piskac, won an Amazon Research Award for their proposal, "Formalizing FISA; using automated reasoning to formalize legal reason-

ing." The award became a Yale College course entitled "Law, Logic and Security," offered in fall 2022. Shapiro audited Piskac's course on software verification, and the two "learned each other's languages," he said.

"We prize interdisciplinary at the Law School a great deal, but this was truly interdisciplinary in a very deep sense. Lillian Goldman Law Library leadership and research instruction librarians have also taken a proactive approach to AI.

Femi Cadmus, Law Librarian and Professor of Law at the Law School, teaches a course called "Technology in the Practice of Law" in which students experiment with AI-driven platforms like Lexis+ AI, Kira, and Relativity, as well as virtual reality headsets and other tools.

"You can't teach every possible technology, but you can teach approaches to critically evaluating and assessing technology, [and] you can give them a framework so that when they're entering a situation using technology they're asking the right questions," said Cadmus.

In one class, she said, a student asked how lawyers using AI can be sure they are safeguarding the client's data, privacy, and confidentiality. The right question, Cadmus said, "You have to check — is it secure? Where is the data coming from? Is it clean? Has it been reviewed?"

What I want them to understand is that technology is great, but it's prone to misuse by bad actors," Cadmus said.

An AI-generated image of Justice Eisenman sitting in the law library.

This is not Jason Eisenman, Director of Library Technology and Planning at the Lillian Goldman Law Library, but a still from an AI-generated video of Eisenman. Eisenman is a frequent speaker at Practical AI workshops with AI-generated video introductions to illustrate the ease with which it's possible to obtain a convincing deepfake — and to show what the technology can do.

Key to harnessing light waves? First do the math



Hot bodies emit light waves in a process scientists call "thermal radiation" — exemplified in the light we see through night vision goggles or in the glowing embers of a fire. Now thermophotovoltaic devices capture these energy waves, offering the potential for more efficient and sustainable electricity than offered by conventional solar cells.

But until now scientists have been unable to measure the maximum rate at which thermal energy can be transferred from a hot body to a cold photovoltaic.

Scholars at Yale's Energy Sciences Institute have for the first time developed a mathematical model that effectively predicts a maximum rate of thermal energy transfer. Published in Nature Communications, the new theory sidesteps the requirement for endless checking of every possible permutation, instead revealing upper limits to what is possible.

"We realized that there's a different way of viewing wave scattering that's mathematically analogous to how we interpret electrical circuit response, or scattering by atoms and molecules" said Owen Miller, an assistant professor of Applied Physics at Yale and primary author of the study.

First author Lang Zhang, a graduate student in the Miller group, has dedicated her studies to developing new ideas in radiative energy transfer. Last year, the team collaborated with scholars at the University of Michigan to experimentally demonstrate record-breaking "near-field" energy transfer.

Their new theoretical framework reveals an otherwise hidden structure in complex wave scattering. As well as establishing crucial understanding for next gen energy-harvesting technologies, the framework is also expected to have an impact on wide-ranging challenges in optics and photonics, from isolators that protect laser systems to better designs for augmented-reality technologies.

The theory may also be useful in resolving open questions in other areas of wave scattering, including acoustic, fluidic, and quantum phenomena.

In addition to Miller and Zhang, Francesco Monticone of Cornell University collaborated on the study, which was funded by the Air Force Office of Scientific Research and by the Army Research Office under a MURI (Multidisciplinary University Research Initiatives) program.

Can AI Help design a more appealing car?

Designing a new car is expensive and time-consuming—and there's always a risk that a vehicle's design won't connect with consumers. In a new study, Yale SOM's Alex Burnap shows how machine learning can identify promising models and help designers generate new designs to iterate on their ideas.

In 2022, Burnap and his collaborator, Yale Associate Professor of Computer Science Rufa Piskac, won an Amazon Research Award for their proposal, "Formalizing FISA; using automated reasoning to formalize legal reason-

streamline and augment that process. "Could we do it better, faster,



staples. First, the researchers had to make due with "small" data: 7,000

images was not nearly enough to train a machine to reliably and accurately predict how images of designs translate into human ratings. To address this issue, Burnap and colleagues beefed up their training data using a separate set of 180,000 unrate

How could unrate images help predict consumer ratings? As Burnap explains, "the idea is to let the 'big' unlabeled data do the heavy lifting of 'learning' how a product looks, while letting the 'small' labeled data focus on how consumers would respond to that product." For example, before the neural net could learn which body shapes tend to be viewed as appealing or innovative, "first it had to learn that body shapes like SUVs or sedans even exist."

The next obstacle: Even a single average-sized image is comprised of millions of pieces of information—and all of those variables need to go into a predictive or generative algorithm.

For example, a 1,000 pixel x 1,000 pixel grayscale image is a matrix of 1,000,000 variables, far too many to put into conventional predictive models. With so much data, algorithms struggle to discern which features matter and which don't. To solve this, the team developed a novel encoding algorithm that boiled down each image to a more manageable size without losing key features.

By bolstering and encoding the training data in this way, the researchers' neural net was able to draw meaningful connections between vehicle attributes and focus group ratings. In fact, their predictive model correctly predicted how consumers would rate an image 30-40% better than other state-of-the-art models.

Beyond predicting consumer ratings, the algorithm is geared towards generating "new to the world" conceptual designs that could bolster the vehicle design process. Designers often run the risk of "design fixation" in which only narrow subset of possible design concepts is explored and focused on. The idea, Burnap says, is to give designers a tool that improves how they develop products by allowing exploration and early feedback on potential market acceptance.

While plenty of existing AI tools can take a group of pictures and spit out new images that are visually similar, Burnap and colleagues sought to go further, building a generative engine that would incorporate live input from human designers. "Most machine-learning advances in this area focus on generating as realistic-looking images as possible. This turned out not to be the actual need of designers," says Burnap. "The goal was not to make pretty-looking car pictures."

Astronomers find a tiny star system with a tantalizing story to tell

Yale astronomers have helped identify a tiny star system orbiting the Milky Way which they say hints at the existence of a new class of faint, satellite star systems that orbit around large galaxies.

An international team led by researchers at Yale and the University of Victoria in Canada recently announced the discovery of Ursula Major III.

UNIONS 1 (UMa3/U1), the faintest and lowest-mass star system ever found.

The newly discovered system is only 20 light years across (more than 58.7 trillion miles) and contains only about 60 "mature" stars — mature in this case meaning more than 10 billion years old. Its mass is 15 times less than the mass of the dimmest dwarf galaxy.

The researchers discovered UMa3/U1 and studied it in detail using the WM Keck Observatory's Deep Imaging Multi-Object Spectrograph (DEIMOS) in Hawaii, the Ultraviolet Near Infrared Optical Northern Survey (UNIONS) at the Canada-France-Hawaii Telescope, and Panoramic Survey Telescope and Rapid Response System (Pan-STARRS) at the University of Hawaii's Institute for Astronomy.

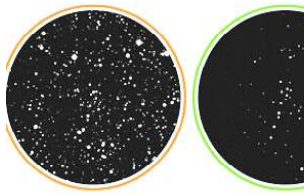
"There are so few stars in UMa3/U1 that one might reasonably question whether it's just a chance grouping of similar stars," said Marla Geha, a professor of astronomy and physics in Yale's Faculty of Arts and Sciences and co-author of a new study published in The Astrophysical Journal.

"Keck was critical in showing this is not the case," Geha said. "Our DEIMOS measurements clearly show all the stars are moving through space at very similar velocities and appear to share similar chemistries."

For now, the new star system has two names, due to the fact that astronomers can't yet confirm whether it is a dwarf galaxy (named for its constellation Ursa Major) or a star cluster (named after the survey in which it was discovered,

UNIONS).

At the heart of this question is



If confirmed as a galaxy, the system would be the faintest galaxy ever discovered — and may suggest that many others remain hidden within this deep sky image is UMa3/U1, a tiny group of stars in orbit around the Milky Way.

the possible involvement of dark matter, a mysterious matter that is thought to be the invisible "scaffolding" of the universe.

"Excitingly, a tentative spread in velocities among the stars in the system may support the conclusion that UMa3/U1 is a dark matter dominated galaxy, a tantalizing possibility we hope to scrutinize with more Keck observations," said William Cerny, a Yale graduate student in Geha's research group and second author of the new study.

"The object is so puny that its long-term survival is very surprising," Cerny added. "One might have expected the harsh tidal forces from the Milky Way's disk to have ripped the system apart by now,

leaving no observable remnant. The fact that the system appears intact leads to two equally interesting possibilities. Either UMa3/U1 is a tiny galaxy stabilized by large amounts of dark matter, or it's a star cluster we've observed at a very special time before its imminent demise."

The answer may have ramifications well beyond the star system's eventual name.

The standard cosmological model of the universe, known as the Lambda Cold Dark Matter model, predicts that when galaxies such as the Milky Way formed, they exerted enough gravitational pull to attract hundreds of smaller satellite star systems down to very small masses, which continue to orbit the larger galaxies.

If UMa3/U1 is a galaxy, its existence implies that many such faint satellite galaxies remain to be discovered.

"Whether future observations confirm or reject that this system contains a large amount of dark matter, I'm very excited by the possibility that this object could be the tip of the iceberg — that it could be the first example of a new class of extremely faint stellar systems that have eluded detection until now," Cerny said.

The economic consequences of climate change

What are the economic consequences and opportunities of climate change? How do you integrate economic analysis with the science of climate change?

These questions are at the heart of Nobel laureate William Nordhaus' career, and in research released this week in the Proceedings of the National Academy of Sciences (PNAS), he and coauthor Lint Barrage (PhD '13) present new findings from the updated DICE-2023 model, with major implications for global climate policy. The DICE model (the Dynamic Integrated model for Climate and the Economy) is one of the first integrated assessment models or IAMs. This approach provides policy-relevant insights into global environmental issues through quantitative

descriptions of key processes in human and earth systems. IAMs model the climate problem from end to end, from economy to emissions to atmospheric chemistry to climate dynamics, then on to impacts such as sea-level rise, wildfire, and health impacts, and finally closing the loop by including policies to bend the curve of CO₂ emissions. The outputs of these models play a key role in understanding key relationships and formulating efficient policies to slow or reverse the trends.

One important finding is that international climate policy that sets ambitious goals but has failed to implement them. Additionally, we estimate that current policies will lead the global mean temperature

increase (above pre-industrial levels) to pass the 1.5°C target later in this decade, while without major policy changes, the globe will surpass the 2°C goal of the Paris Accord by mid-century."

The original DICE model was developed and published at Yale in 1992 and is the most widely used climate-change integrated assessment model. The US and other governments employ it to calculate the social cost of carbon as well as to create consistent scenarios and evaluate policies and uncertainties. The new study updates the 2016 DICE model with revised treatments of the carbon cycle, damages, discounting, and also includes results on the Paris Accord and temperature-limited scenarios.

While working with design teams, Burnap saw an opportunity for to improve this process. The idea has two parts, he explains: first, train an algorithm to predict how a human focus group would rate a given design, allowing designers to eliminate the less viable concepts before the theme clinic, "so that you don't have to kill them further down the process," and second, use the algorithm to also generate new approaches, to help designers create and explore the space of possible designs.

To create the algorithm, the researchers set up a deep neural network to determine how features of an image translate into ratings. GM spent huge amounts of money on images of 203 vehicles, plus consumer ratings from focus groups where those vehicles had been evaluated, which they could use to train the neural net.

But there were some major ob-