



## FINAL FOUR

SAN DIEGO STATE WILL BE DANCING IN THE FINAL FOUR FOR THE FIRST TIME EVER AS THE NO. 5 AZTECS ENDURED A TOUGH TEST FROM NO. 6 CREIGHTON BEFORE PULLING OUT A 57-56 WIN. **B1**

### SCIENCE

## Empathy goes back a long, long, long way, study suggests



A zebrafish, bottom, is monitored to see its reaction to a video of another at a lab in Portugal. Zebrafish may have their own version of empathy, enabled by a chemical pathway thought to drive human behavior. *Rui F. Oliveira via Associated Press*

*Researchers find an evolutionarily ancient signaling pathway when they look at fish that sense fear in one another.*

**Christina Larson** *Associated Press*

Our capacity to care about others may have very, very ancient origins, a new study suggests.

It might have been deep-rooted in prehistoric animals that lived millions of years ago, before fish and mammals like us diverged on the tree of life, according to researchers who published their study Thursday in the journal *Science*.

“Some of the mechanisms that under-

lie our ability to experience fear, or fall in and out of love, are clearly very ancient pathways,” said Hans Hofmann, an evolutionary neuroscientist at the University of Texas at Austin, who was not involved in the research.

Scientists are usually reluctant to attribute humanlike feelings to animals. But it’s generally accepted that many animals have moods, including fish.

The new study shows that fish can detect fear in other fish, and then become afraid too — and that this ability is regulated by oxytocin, the same brain chemical that underlies the capacity for empathy in humans.

The researchers demonstrated this by deleting genes linked to producing and absorbing oxytocin in the brains of zebrafish, a small tropical fish often used for research. Those fish were then essentially antisocial — they failed to detect or change their behavior when other fish were anxious.

But when some of the altered fish received oxytocin injections, their ability to sense and mirror the feelings of other fish was restored — what scientists call “emotional contagion.”

“They respond to other individuals being frightened. In that regard, they behave just like us,” said University of Calgary neuroscientist Ibukun Akinrinade, a co-author of the study.

The study also showed that zebrafish

will pay more attention to fish that have previously been stressed out — a behavior the researchers likened to consoling them.

Previous research has shown that oxytocin plays a similar role in transmitting fear in mice.

The new research illustrates “the ancestral role” of oxytocin in transmitting emotion, said Rui Oliveira, a behavioral biologist at Portugal’s Gulbenkian Institute of Science and a study co-author.

This brain processing “may have already been in place around 450 million years ago, when you and me and these little fish last had a common ancestor,” explained Hofmann.

Oxytocin is sometimes thought of as a “love” hormone, but Hofmann said it’s actually more like “a thermostat that determines what is socially salient in a particular situation — activating neural circuits that may make you run from danger, or engage in courtship behavior.”

That could be fundamental to the survival of many animals, especially those who live in groups, said Stony Brook University ecologist Carl Safina, who was not involved in the study.

“The most basic form of empathy is contagious fear — that’s a very valuable thing to have to stay alive, if any member of your group spots a predator or some other danger.”

### NEW YORK CITY

## Protests erupt, but they are not for Trump

**Bobby Caina Calvan** *Associated Press*

Throng of protesters gathered at the courthouse steps, chanting for freedom for their embattled hero. Police kept watch as passions flared and voices roared. Squad cars and television trucks encircled the commotion.

It’s a scene New York City authorities have been bracing for as prosecutors consider an indictment against former President Donald Trump, who has invited followers to rally on his behalf. But on Saturday, it was just a movie shoot — for the

“Joker” sequel to be precise.

The roars faded and the crowds dispersed — on command — when the director yelled, “Cut!”

The New York City shoot for the upcoming “Joker” sequel had been planned for months; but in recent days, production crews wrestled with the possibility that filming could be disrupted by real-life protests over the Trump case — none of which have so far materialized.

In the end, film workers forged ahead, said Leo Maniscalchi, a production assistant, who was taking a break at a nearby

coffee house.

“They needed to do what they needed to get this done,” he said.

In the film, the Joker, played by Joaquin Phoenix, inspires protests against Gotham’s elites.

In real life, Trump has inspired protests, too. In recent weeks, the former president has called on his supporters to protest what he said was an impending indictment accusing him of paying \$130,000 to buy the silence of porn actor Stormy Daniels.

**SEE PROTESTS, A8**

### ALBANY

## Hochul gets new list of candidates

*The governor now has 30 days to choose a chief judge nominee.*

**Denis Slattery** *Tribune News Service*

Gov. Kathy Hochul has a new list of seven candidates from which to choose a nominee to be the next chief judge of New York after Senate Democrats rejected her first pick to lead the state judiciary last month.

The governor now has 30 days to choose a nominee to lead the state Court of Appeals, New York’s highest court, from a shortlist released Friday by the Commission on Judicial Nominations.

Hochul must weigh the panel’s recommendations after the Democratic-led state Senate shot down her initial nominee, Justice Hector LaSalle, in an unprecedented rejection that followed weeks of conflict over his background, questions about constitutional duty and a Republican lawsuit over the process.

LaSalle’s nomination drew opposition from progressive lawmakers as well as labor unions and other groups who viewed him as too conservative to lead the state’s sprawling court system.

Among the new recommendations from the commission are Justice Anthony Cannataro, the acting chief judge of the Court of Appeals, as well as two other judges currently serving on the state’s highest bench: Justice Shirley Troutman and Justice Rowan Wilson.

Two appellate court judges made the list: Hon. Elizabeth Garry, the presiding justice of the 3rd Appellate Division and Hon. Gerald Whalen, the presiding justice of the 4th Appellate Division.

Additionally, Caitlin Halligan, a lawyer and former general counsel for the Manhattan district attorney’s office who also served as solicitor general for the state from 2001 until 2007, and Corey Stoughton, an attorney with The Legal Aid Society, both made the list.

“I am gratified by the extraordinary quality and diverse backgrounds of the applicants received by the Commission,” E. Leo Milonas, chair of the commission, said in a statement. “That so many exceptional candidates were motivated to apply demonstrates the remarkable strength and depth of the legal profession in the State of New York.”

LaSalle, presiding justice of the 2nd Appellate Division in Brooklyn, was initially nominated by Hochul in December following the resignation of former Chief Judge Janet DiFiore last summer.

Initially, Senate Democrats refused to grant his nomination a full floor vote and rejected LaSalle during a committee hearing in January. That prompted a lawsuit from Republican lawmakers which resulted in a Long Island judge determining that future nominees must get a vote by the full chamber. LaSalle was formally **SEE CHIEF JUDGE, A8**

### PERSONAL FINANCE

## Budget busters

From groceries to utilities to gasoline, prices have been rising. Here are some ways to reduce your spending on more than grocery bills. **A3**

### NATION

## Recovery underway

At least 25 people were killed and dozens of others were injured in Mississippi as a massive tornado ripped through several towns late Friday. **A4**

