

Wainford did similar tests on salt-sensitive rats, and with a more drastic measure of removing the animals' renal nerves entirely, severing all communication between the brain and the kidneys. Surprisingly, this kept the rats' blood pressure low and seemed to have no other ill effects. (Similar trials on humans have had mixed results.)

"Clearly the impact of the renal nerves on blood pressure regulation in human subjects is complicated," says Wainford. "I think the removal of the renal nerves is a very powerful technique; it just needs to be done right, and studied right, and in the right population. Ultimately, our goal is to more fully understand the mechanisms of how the brain and the kidney interact to regulate blood pressure. The more we understand that, the better we can treat patients."

Oversimplified dietary messages have persuaded people to cut out protein.



effect as we did," says Moore. "There may be other mechanisms that we're not even aware of. It's still an active area of investigation."

Doctors and nutritionists don't usually tell people with high blood pressure to avoid protein per se. But our culture's pervasive (and oversimplified) low-fat dietary message may have caused some people to inadvertently cut out protein.

"Fat was considered sort of an evil thing for many years," says Moore. "The message became: don't drink milk, don't eat eggs, don't eat meat—that way you would reduce your fat intake. The belief was that if we reduced the fat in the diet, obesity would go away and heart disease risk would dramatically decline. But there's good evidence that protein is beneficial throughout the life span. In older adults, it's important in maintenance of muscle strength, and there's no evidence that it's harmful in terms of blood pressure."

Digging in the Shadow of Death

CAS ARCHAEOLOGIST WORKS TO KEEP ARTIFACTS OUT OF THE CLUTCHES OF ISIS / BY AMY LASKOWSKI



ALLISON CUNEO

Archaeologist Michael Danti was digging high in the jagged Zagros Mountains of Iraqi Kurdistan in June when Kurdish workmen gave him the news: the Islamic State, also called ISIS or ISIL, had stormed the northern city of Mosul. Tens of thousands of people were fleeing for their lives.

"I started to immediately contact my friends in Mosul," says Danti, a College of Arts & Sciences assistant professor of archaeology, who in 2012 started a joint program with Iraqis to revitalize archaeological education in the country. "The rumors came in that ISIS had seized armories and were now armed to the teeth, and then that they had seized the major gas refinery in Baiji. There were lines of cars on the

In 2013, the Kurdistan Regional Government awarded CAS' Michael Danti (standing, above; below) and his Rowanduz Archaeological Program a five-year permit for archaeological surveys and excavations in two ancient cities carved out of rock in the Zagros Mountains. The Zagros stretch from Iran to Iraq and link northwestern Iran to northern Mesopotamia.



JACQUE RICCIARDI

roads that stretched for miles....When you're living and working in the mountains, you don't have a lot of information."

Months later, Danti says the Iraqi professors he worked with on the Mosul Archaeology Program (MAP) still feel threatened by ISIS. "MAP had been the number-one archaeology program in Iraq," he says. "It was designed to set the standard of how archaeologists in the country would be trained."

Danti, a codirector at the American Schools of Oriental Research, a Boston University-based consortium of institutions dedicated to Near Eastern archaeology, has devoted his career to archaeological pursuits in the Middle East—and that hasn't been easy. Wars and political upheaval

have rendered much of Iraq off limits to archaeologists for decades. In fact, archaeology in Iraq has taken some giant steps backward: the looting of Baghdad's National Museum of Iraq in 2003 resulted in the loss or destruction of more than 15,000 artifacts and manuscripts covering 10,000 years of a civilization that invented mathematics, writing, and the wheel. Despite the tumult, Danti and his colleagues have attempted to draw attention to archaeology in Mesopotamia, the area between the Tigris and Euphrates Rivers, which is often called the cradle of civilization.

Much of that work, which employed US archaeologists to develop curricula and teach online courses for their Iraqi counterparts and students, was conducted through MAP, which was funded by the US Embassy in Iraq. The plan was to one day sponsor cultural study programs in both the United States and Iraq.

"ISIS is purposely targeting, stealing, and sometimes destroying the cultural property," says Danti. "It's a very important source of revenue for them. They especially like to loot cultural heritage [sites] and property of religious and ethnic minorities, because they feel—within their vision of Islam, which is very unique—that their religion justifies what they are doing. That is frightening."

While ISIS held Mosul, Danti and his team of 17 archaeologists and a large contingent of their crew continued their dig in Iraqi Kurdistan, a relatively unexplored area in the northeastern part of the country near the Iranian border. In 2013, the Kurdistan Regional Government awarded Danti and his Rowan-

duz Archaeological Program (RAP) a five-year permit for archaeological surveys and excavations in Soran-Rowanduz, two ancient cities carved out of rock in the Zagros Mountains. The Zagros, which stretch from Iran to Iraq and link northwestern Iran to northern Mesopotamia, have yielded many archaeological treasures. Neanderthal skeletons, the oldest barley beer and grape wine, and evidence of the first domesticated goats were all discovered there, where remote sanctuaries, rock inscriptions, and monuments are dedicated to ancient storm and mountain deities.

RAP field director Darren Ashby (CAS'08), a PhD candidate at the University of Pennsylvania, says the area has lots of greenery and resembles Wyoming and the Bighorn Mountains. "When people think of Iraq, they're thinking it's dirt and dusty, but it's mountainous in this area," he says. "There is a huge gorge and streams."

The RAP dig began by mistake: a construction crew, widening a paved road in 2013, inadvertently unearthed the cemetery of Ghabrestan-i Topzawa (which dates to 400 BCE) and the long-ago burned settlement of Gund-i Topzawa, occupied from 1000 to 700 BCE. Archaeologists explored the site further this year.

Danti believes the area was once the ancient kingdom known as Musasir, and that the blaze can be linked to an attack by the Assyrian king Sargon II, who sacked the kingdom's capital city in 714 BCE, plundering the countryside as he went. This "sacrilegious" attack is well known to historians of the region, Danti says, but the exact location of the kingdom is unknown. "People have thought that this area may be Musasir for a long time, but we need definitive proof," he says. "I think we may find it next season."

A Star Is Born


UNRAVELING THE MAGNETIC MYSTERIES OF STELLAR BIRTH / BY BARBARA MORAN

How are stars created?

Today, we know the basics: a star begins as a huge, swirling cloud of gas and dust that gradually spins into a disk. The spinning disk, which will eventually become a new solar system, gathers a dense ball of matter at the center, with mass flowing from the disk onto the ball in a process called "accretion." If the ball becomes massive enough to fuse atoms of hydrogen, then a star is born, powered by the nuclear fusion at its core.

Researchers still don't know exactly how or why the clouds collapse to form stars, and how it accretes the mass through the disk. But Ian Stephens, a post-doctoral associate at BU's Institute for Astrophysical Research, has brought science one step closer to understanding the process of star formation.

For the first time, Stephens has directly observed the magnetic field in the disk of a baby star—thought to be critical for a star's birth—and found its shape to be more complex than anyone expected. The discovery, published on October 30, 2014, in *Nature*, gives new clues—and raises new questions—about how stars are born. And because the baby star that



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