**The Path to Dark Matter**

The path to dark matter and other fundamental enigmas may be through a warped extra dimension, according to a new study that proposes a new theory of the universe. Scientists want to search for a hypothetical particle that can act as a portal to a warped fifth dimension that mediates the cosmic realms of light and dark.

You would be forgiven for assuming that sentence is a science fiction synopsis, but it is actually the mind-boggling upshot of a recent study that seeks to illuminate some of the most persistent enigmas in science.

The existence of this speculative particle could “provide a natural explanation” for the abundance of dark matter, an unidentified substance that accounts for most of the universe’s mass, and resolve intractable problems about subatomic particles known as fermions, according to the new research, which [was published last month](https://link.springer.com/article/10.1140/epjc/s10052-021-08851-0) in *The European Physical Journal C*.

The study adds that “the presence of new physics” can explain these fundamental mysteries by presenting a model of the universe with a fifth dimension that can be traversed by particles.

The study was authored by Javier Castellano and Matthias Neubert, theoretical physicists at the PRISMA+ Cluster of Excellence at Johannes Gutenberg University Mainz, and Adrián Carmona, an Athenea3i fellow at the department of theoretical physics and the cosmos at the University of Granada.

“We have been working on a similar topic for quite some time,” said the team in an email.

“Our initial motivation was to explain the possible origin of fermion masses in theories with a warped extra dimension.”

“We knew that the masses of these constituents had some special features, which were crying out for an explanation,” they said.

The researchers are part of a long scientific tradition that questions whether the four dimensions that humans can comprehend—3D space and time—are really all the universe has to offer. This line of research has produced 5-dimensional field equations that express the implications an extra dimension would have on the universe, and reality itself.

While researching these equations in relation to fermion masses, the team sketched out the existence of a new scalar field associated with a speculative particle that is roughly similar to the Higgs field associated with the famous Higgs boson particle.

“We found that the new scalar field had an interesting, non-trivial behavior along the extra dimension,” the team explained. “Since this new particle has very similar quantum properties as the Higgs boson, it was very natural to assume that the two particles should mix with each other, meaning that their quantum-mechanical wave functions are intertwined.”

“Studying this mixing was one of the original motivations of this work,” the researchers added.

As they probed this hypothesis, the physicists realized that the heavy particle could offer “a unique window” into dark matter because it would be able to mediate a new force connecting dark matter and its more familiar visible counterpart, which takes the form or stars, planets, and everything else we can detect with traditional light-based astronomy.

“If this heavy particle exists, it would necessarily connect the visible matter that we know and that we have studied in detail with the constituents of the dark matter, assuming that dark matter is composed out of fundamental fermions, which live in the extra dimension,” the physicists explained.

“This is not a far-fetched idea, since we know that ordinary matter is made of fermions and that, if this extra dimension exists, they will very likely propagate into it,” they noted.

Models of the hypothetical particle did not conflict with real observational evidence of dark matter abundance in the universe. This general agreement with empirical evidence, along with the hefty mathematical work in the study, demonstrates that the particle could be “a possible new messenger to the dark sector,” the researchers said.

“Therefore, confirming the existence of such a new scalar particle will open an exciting path towards the possible discovery of dark matter,” the team said. “This will give us in particular very useful information about the possible mass range of dark matter and its interactions with the particles we know nowadays.”

Now that scientists have a lead on this hypothetical particle and its 5th dimension, they have to actually look for it. The Higgs boson was eventually spotted by the Large Hadron Collider (LHC) in Switzerland in 2012, an achievement that earned the Nobel Prize in Physics. However, the LHC would not be equipped to search for the particle proposed in the new paper, as it would be too heavy to be generated in any current facility.

Though the particle might be detectable for a new generation of proposed colliders, such as the International Linear Collider, the Compact Linear Collider (CLIC), and the Future Circular Collider, the researchers said that “due to its large mass the prospects for such a direct discovery seem very challenging even at the high energies discussed for such a machine (100 TeV).”

Even so, the researchers believe that the particle could be detected more indirectly, such as through observing gravitational waves, which are ripples in spacetime.

“Another possibility, which we did not explore yet, is that this new particle could play an important role in the cosmological history of the universe, and might produce gravitational waves that can be searched for with future gravitational-wave detectors,” the researchers added.

Future studies of dark matter could also help to constrain the odds of the particle’s existence, so the team is optimistic that their 5th-dimensional concept will develop alongside advances in particle physics and cosmology. Beyond its implications for understanding dark matter, the particle, if it exists, could shed light on longstanding scientific dilemmas such as the flavor puzzle or the hierarchy problem, while also opening a new window into the early universe.

“One could study the potential role played by the new scalar particle in stabilizing the extra dimension,” the team said. “This could also eventually lead to an interesting cosmological history of the universe and might lead to the production of gravitational waves. This is an interesting line of research, which we plan to follow in the months ahead.”

“One could also try to find new ways of probing this particle at future hadron colliders,” the researchers concluded. “As you can see, there are really plenty of things one can think of!”

**Still Winning**

Of late, I’ve felt more and more like I am back in Communist China. A place where every day, no matter what channel you turn on, what radio broadcast you listen to, or what online news service you subscribe to (except LifeSiteNews and a couple of others), the same dreary party line spews out.

The oligarchy is so confident that they can manipulate our very thoughts – after all, they control the search engines, the Twitter feeds, and the trending news – that they no longer even bother to hide what they do. Deleting President Trump’s account made it clear to the world what devious little Jack Dorsey spends his days doing: maniacally deleting accounts that deviate from his “truths.” And who doesn’t know by now that Mark Zuckerberg specializes in devising algorithms that are the hi-tech version of the mushroom treatment – keeping us in the dark and feeding us horse manure.

The party line with regard to the 2020 presidential election, aggressively promoted by America’s corporate media and Big Tech, is this: There was no election fraud because the courts have said so.

Both claims are false. Not just questionable, but dead wrong.

By now, most people know that America’s corporate media and Big Tech have aggressively and punitively suppressed an open discussion of possible election irregularities.

But have you noticed that – to prop up their version of reality – they’ve simply stopped reporting on the dozens of ongoing lawsuits that are slowly wending their way through the court system? At most, they will simply make a blanket statement along the lines of “Trump has lost all the lawsuits that have come before the courts.”

Top of Form

Bottom of Form

Sometimes they will go further, and suggest that our justice system has thoroughly and impartially examined the claims of election fraud made in those suits, and have ruled that they are completely unfounded.

Top of Form

Bottom of Form

Nothing could be further from the truth, as Physicist John Droz has discovered. Droz assembled a team of his fellow scientists and engineers – all volunteers – to take a close look at the lawsuits that have been filed, all of which are a matter of public record, and to summarize the results. This is no easy task, since there have been 80 lawsuits filed in connection with the 2020 presidential election by Trump or on his behalf, and each of these lawsuits consists of dozens of pages of filing and decisions.

The summary report, called “[2020 Presidential Election Lawsuits Related to Election Integrity](http://wiseenergy.org/Energy/Election/2020_Election_Cases.htm),” strips the excess verbiage of which lawyers are so fond, leaving the bare essentials of the lawsuits: What issues were at stake, how each case was treated by the courts, what evidence was objectively analyzed and, finally and most importantly, who won and who lost.

So what did Droz and his team find?

First, of the 80 total lawsuits, 34 have either been withdrawn, consolidated with other suits, or dismissed due to legal technicalities such as lack of standing, timing, or jurisdiction. Those judges who dismissed suits never heard the actual evidence of election irregularities and/or fraud, since they did not allow it to be presented in their courtrooms. Such cases cannot be counted as a loss for Trump. If anything, they are evidence of a failure of our judicial system to – at a moment of national crisis – actually address election fraud.

Of the 46 remaining lawsuits, 25 cases are still ongoing, so that the winner and loser of these cases is yet to be determined, while 21 have been completely adjudicated. These are cases where the court heard arguments, considered any relevant evidence, and then issued a formal ruling on the merits.

You may be surprised to learn that, of these 21 cases, Trump has won 14 and lost 7.

In other words, *Trump has won two-thirds of the cases to date that have been adjudicated by the courts*.

Don’t expect to hear this on the evening news.

John Droz [notes](https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwiseenergy.org%2FEnergy%2FElection%2F2020_Election_Lawsuits.pdf&data=04%7C01%7Ccchretien%40lifesitenews.com%7C6bb366777ec54eaaedd908d8c9574126%7Cb1de1e02454440878df20244507fd8e6%7C1%7C0%7C637480723891016473%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000&sdata=O4SSjH%2FWEGnJrjNZiNj8siVNWsSZJagERcsRzXm0Tzc%3D&reserved=0) separately that, despite the widespread allegations of massive voter fraud:

“… only three (3) of these lawsuits materially dealt with voter illegalities (citizens voting twice, votes from deceased persons, etc.). Interestingly, all three of these cases are still open.”

“Further, just three (3) lawsuits addressed voting machine inaccuracies (purposeful or accidental). One of these was dismissed (due to jurisdiction), one was ruled against (although no discovery was granted), and one is still open (discovery was granted).”

“The likely explanation for so few cases in these two areas is that legally proving fraud or voting machine manipulations are very time-consuming processes, that require substantial investigative work and documentation. There simply wasn’t enough time to do this prior to key points in the process (like the Electoral College).”

Kudos to John Droz and his team for helping to educate the public about the ongoing legal efforts in ensure election integrity.

I think everyone understands that, if we can be defrauded of our vote, we no longer live in a democracy.

**The End of the Teacher’s Unions**

On Saturday’s broadcast of the Fox News Channel’s “America’s News HQ,” Sen. Marsha Blackburn (R-TN) criticized the White House for breaking with the CDC on returning students to in-person learning and said that “it seems that the left is concerned about COVID in the classroom. They are not concerned about COVID at the border crossings.”

Blackburn said, [relevant remarks begin around 1:00] “The White House has one opinion. CDC had already said that children could go back to school, taking the proper mitigation strategies, getting those in place, and that is your PPE, making certain you’re using masks, you have dividers, and every — the teachers are on the list for getting vaccinations. Here’s the deal, it seems that the left is concerned about COVID in the classroom. They are not concerned about COVID at the border crossings.”

**What’s Going On?**

In the current academic climate, teaching social justice has become more important than content. This is especially true in the fields of history and civic education. For example, teacher training at the University of Illinois is centered around social justice, as more than one student teacher has related to me during informal interviews. Where once the emphasis was on such topics as Bloom’s taxonomy and classroom management, social justice topics seem to have taken precedence.

If alarm bells are not going off in your head right now, they should be.

Those of us who teach history or civics, whether at the high school or collegiate levels, are at the forefront of this battle. (Yes, it is not incorrect to call this a battle.) History is oftentimes in conflict as those who want to forward a political agenda are often pitted against those who seek to teach honest historical inquiry so that students, through prudent study, can arrive at their own conclusions.

History is not wrong. Those who teach it with a bias in order to forward a set of political ideals are.

Historiography, the way history is researched and told, has tentacles of different stripes based largely on time period. The Ancient Greeks and Romans told their histories in an effort to influence morality and what they considered to be the qualities of *good men*. Eventually, days and dates were included so as to preserve the great deeds of kings and queens for posterity’s sake, with critical histories being published only after the death of a monarch.

The 19th century saw the rise of a new kind of history with the advent of the Prussian School. It featured such luminaries as J.G. Droysen, Max Duncker, and the bombastic Heinrich von Treitschke, whose “History of Germany in the 19th Century” is entertaining due to his naked devotion to Prussia and Greater Germany at the expense of historical objectivity.

The Prussian School sought to teach history in such a way as to influence German unification so that it aligned with Prussia, the powerful militaristic state of the 19th century, rather than Austria, the state that dominated Central Europe dating back to the Golden Bull of 1356. Histories authored by Prussian School adherents were biased in every way, emphasizing the greatness of the Prussian model of state and society, along with a consistent message of Germanic greatness. In the end, through a complicated political process begun by Otto von Bismarck, the fertile ground of German consciousness planted with Prussian School seeds was eventually harvested to create modern Germany in 1871.

Bottom of Form

Today, we are facing a similar movement at all levels of education in our nation, with the profession dominated by those who profess to be “Left” in thought and action. According to the Washington Times, liberal professors [outnumber](https://www.washingtontimes.com/news/2016/oct/6/liberal-professors-outnumber-conservatives-12-1/) conservatives 12:1, with similar studies indicating even higher percentages.

The aim of self-professed trade magazines like the American Educator is to expound critical race theory and social justice agendas at the expense of true historical inquiry and civics education. This is tantamount to indoctrination of unsuspecting students and, in some cases, undercutting the parents’ role in the education of their children.

This tidal wave of wokeness has also made its way into the professional development of teachers. Mandatory seminars on implicit bias, critical race theory, and social justice are now commonplace in high schools and colleges, even seeping into grade schools. The art of teaching is being colored by the aims of the social justice movement at the expense of content, fairness, and critical thinking skills. The Prussian School is alive and well, but now, rather than teaching German unification under Prussia, it is professing social justice. This movement is training an entire generation of students and teachers using biased and historically inaccurate history such as the New York Times’s “1619 Project” for nakedly political ends.

Currently, an Illinois proposal entitled “Culturally Responsive Teaching and Leading Standards” has been approved by the Illinois Board of Education. Should it be approved by the Illinois General Assembly, Illinois teachers will be required to teach both history and civics according to what amounts to “woke” standards. Failure to do so could result in a teacher losing his teaching license in Illinois. Should it pass, this mandate would be likely implemented nationwide. This is exactly what President Thomas Jefferson warned us about.

If federal lesson plans take over our classrooms, the death knell will have been sounded for honest historical and civics inquiry and teaching, something that Americans cannot and should not tolerate. As soon as the ink dries, all textbooks will be reprinted with the new federal standard woke history. The standardized tests will demand it. We have already seen the result of 2 generations of Marxism in our schools. Wait until you see the new students.

Can you say Home School?

**The Marxist End Game – Woke is Broke**

Sportswear giant Under Armour is dumping its licensing contracts with the National Football League, according to Front Office Sports.

The company axed its deal for NFL players to wear its products on the field, making the coming 2021 season the first in years that Under Armour logos will not appear on the field for years.

Under Amour’s move comes on the heels of the company’s exit from several other high-profile sports leagues, as well.

Under Armour asked to end its $85 million deal with the University of California (Cal), and also cut ties with UCLA after [ending](https://www.bizjournals.com/baltimore/news/2020/06/27/under-armour-terminates-deal-with-ucla.html) its 15-year, $280 million deal with that school. The company also paid off the University of Cincinnati to exit is 10-year, $50 million deal.

That is not all. Under Armour also backed out of its $50 million deal with Major League Baseball.

Under Armour has re-affirmed its contract with Super Bowl-bound superstar Tom Brady, but other athletes are reportedly re-evaluating their individual deals with the sportswear company.

The company says that it is retooling its reputation, veering away from expensive professional sports league deals, and looking to burnish its reputation as a “performance brand.”

They are not alone. Several multi-billion dollar advertisers, who once saw the value in TV sports, are now seeking going somewhere else? The move comes on the heels of several years of cratering TV ratings across all professional sports. Why? Because they need customers, and you have also gone somewhere else. Not only are the bleachers empty, which started long before the Made-4-TV virus came to town, the TV coverage is empty as well.

2020 was a [disastrous](https://www.breitbart.com/sports/2020/12/31/pro-sports-suffer-ratings-disasters-lose-billions-in-revenue-in-2020/) year for TV ratings for nearly every pro sport. The U.S. Open lost 56 percent of its viewers over 2019. Basketball suffered greatly, as well. The NBA finals were down 49 percent over last year. Tennis’ Open also cratered, losing 45 percent over 2019’s games. But the worst of all was Hockey’s Stanley Cup. The NHL’s big game lost a whopping sixty percent over the 2019 championship series.

The NFL has also suffered collapsing TV viewership and was down at least seven percent over last year. It has been so consistently bad this year that advertisers are starting to rise to demand concessions for their high advertising spending since viewership has been falling each week.

**The Grand Division**

*The corruption of the Renaissance Church prompted the Reformation, which in turn sparked a Counter Reformation of reformist and more zealous Catholics.  The cultural excesses and economic recklessness of the Roaring 20s were followed by the bleak, dour, and impoverished years of the Great Depression.*

The Global Syndicate has been hard at work chopping up the world into smaller and smaller factions and teaching each one that all the other factions are trying to kill them. The 1960s counterculture led to Richard Nixon’s landslide victory in 1972, as “carefree hippies” turned into careerist “yuppies.”

Yes. My friends cut their hair, finished school, got jobs, and the people of the world were shorn again and again by the radicals chanting love live love. Give peace a chance quickly became peace through superior firepower. Wanna see? No problem. Take a look at Hillary’s little 90-day war on Kosovo, or her assassination of Qaddafi or her creation of ISIS.

**So social, cultural, economic, and political extremism prompt reactions - and sometimes counterreactions.   If it feels like you’re being walked around like a puppet on a string, just look up.**

Once the Global Syndicate had drawn enough lines in blood around enough new zip codes, they knew no one was large enough or organized enough to stop them. The Bush-Clinton-Obama continuum of 24 years (from 1993 through 2015) cemented what conservatives called the Establishment Party. Trump and his “Make America Great Again” agenda crashed that Party, daring to let common Americans into the buffet of the Middle Class. Thousands of Party officers retired, resigned, or committed suicide as their empire built from human slaves crumbled around them.

**The counter-reaction to the populism of the Trump reset—or Trump himself—was driven from the very top down. The Global Syndicate knows one truism. Winning is everything.**

Virtual-Joe’s appointment as leader of the free world may symbolize the Establishment Party’s ultimate victory over the people. Or more likely, it has uncovered the Syndicate’s bloody fist for all to see. I don’t know what is more frightening. Is it the fact that the Establishment is more daring and powerful than 75 million armed Americans? Or, is the fact that apparently they don’t care enough to do anything to stop it from putting everyone in solitary confinement, erasing their websites, and robbing them of everything else?

**Either way, it seems that Virtual-Joe is intent on provoking just such a pushback by his record number of early and often radical executive orders—a tactic candidate Virtual-Joe actually condemned during his campaign against Trump.**

On almost every issue—open borders, blanket amnesties, canceling the Keystone XL pipeline, promoting the Green New Deal, and hard-left Cabinet appointees—Virtual-Joe is touting positions that will never earn 50 percent public support. It doesn’t matter. He won the not-Trump vote with the rest stuffed into the right ballot boxes.

When **Virtual-Joe made a Faustian bargain with his party’s hard-left wing** of Bernie Sanders (I-Vt.), Kamala Harris, Elizabeth Warren (D-Mass.), and Alexandria Ocommunist-Cortez (D-N.Y.) to win the election, he took on the commitment to absorb some of their agenda and to appoint their ideologues.



**But he also soon became either unwilling or unable to stand up to them.**

Now they - and the country - are in a revolutionary frenzy.

* **The San Francisco school district has canceled over 40 schools honoring the nation’s best** - Washington, Jefferson, and Lincoln - largely on racist grounds that they are dead, mostly white males.
* **Statues continue to fall.**Names change.
* The iconic dates, origins, and **nature of America itself continue to be attacked to meet leftist demands.**
* And still, it is not enough for the Global Syndicate’s effort to erase America from history.
* **Social media are banning tens of thousands**.
* Silicon Valley and Wall Street **monopolies**go after smaller upstart opponents who allow free speech and dissent; hitherto protected by the Constitution.
* **Post the wrong article, and your social media presence is evaporated by thought police Mine was about COVID being a made-4-TV virus** and the dangers of wearing the same mask all day. I was suddenly a danger to the community.
* Famous pundits like Lou Dobbs cancelled while they are in the makeup room.
* **Tens of thousands of federal troops** militarized Washington, D.C. in what looks more like a true dictatorship than a free and shining city on a hill.

**If Trump’s pushback tried to return to traditions ignored during the Obama years, Virtual-Joe’s reset promises to become far more radical than Obama’s entire eight years.  In fact, it is Obama off the chain. Run for your lives.**

Trump likely lost his second pushback term for two reasons - neither of which had anything to do with his reset agenda.

**First**, the made-4-TV virus was weaponized into a national lockdown smashed the unstoppable Trump economy that was launching the entire planet into a new era of freedom from government oppression and open entrepreneurship. It placed 187 countries into solitary confinement and ended free speech in a matter of weeks. Add to that sudden, illegal, radical changes in voting laws that ensured that 100 million ballots were not cast on Election Day, but were tallied weeks after Election Day behind closed doors with no Republican observers.

**Second**, Trump underestimated the multitrillion-dollar power and furor of The Global Syndicate and its four pillars of strength: The IMF and the World Bank as the financial pillar. The Global Media Empire, which consists of 6 individuals and four tech giants. The CCP and their cyber army. The Establishment Party, mostly made of a lockstep Democrat Party and a few dozen Republicans placed in office with CCP money. Those forces all coalesced against him and swamped his outspent and outmanned campaign.

With 24/7 blanket ads, news coverage, endorsements, and social media messaging, Trump sometimes was easily caricatured as a twittering disrupter. The inert and mute Virtual-Joe in his basement was reinvented as the sober and judicious Washington “wise man” antidote to Trump’s unpredictability.

The truth is chilling. Reading scripts and signing ceremoniously, Executive Orders written by Syndicate think tanks, he has become as dangerous as any dictator in history.

Pundits thought Virtual-Joe’s prior hints of a single four-year term would make him a weak lame duck the day after the inauguration.  Instead, the idea of just one term has liberated the 78-year-old Virtual-Joe. We forget that septuagenarians can be as reckless as 20-year olds; especially when they are losing their minds to dementia. Some old guys can feel their careers only have a few remaining years and might as well go out with a bang. No one gets out of this alive anyway.

For now, Virtual-Joe enjoys a congressional majority for the next 24 months. He has no plans to run for reelection. He sees both realities as a liberating blank check to accomplish what the much more heralded rockstar Barack Obama never could.  And if you think it ends there, just watch Kamala slobber as she looks at her watch.

***Remember when experts assured voters that Virtual-Joe would work on a bipartisan consensus and bring back “normality.”***

He would “unite” the country.

**That will not happen.**How ironic that Virtual-Joe will not just be pushed and pressured by the radicals whom he brought to power, but he may be leading them forward to cement an even harder Left legacy.

Will there be a reaction to this extremism?

**The Left is assured** that radical changes in voting laws and demography, the use of the Made-4-TV virus, the Antifa-Black Lives Matter urban military, and anger at Trump over the media’s characterization of the January 6 Rally to Save America into the Capitol riot have all permanently changed the electorate - and pushed it far leftward.

**If they are wrong, they have instead alienated and insulted the American people, and will reap the whirlwind in 2022 of the wind they are now sowing. That is, if the vote has not already been printed and counted by Syndicate forces. Remember when Pelosi said, “He’s already lost. He just doesn’t know it yet.”?**

**The Currency Pendulum**

You know I like to discuss the financial forces of the world. It is a fascinating global effort of herding the chaos of greed and fear into a checkout line. For every action, there is an equal and opposite reaction. In the case of international trade and global payments, President Trump made aggressive and unprecedented use of sanctions and tariffs. These actions leveled the playing field for global trade or punish bad global actors. In a matter of just a few months, the deals conjured out of bribery, murder, blackmail, and secrecy were replaced with open trade, rewritten treaties, and a lockout of lobbyists and bag men.

**But a series of equal and opposite reactions are occurring as The Global Syndicate moves to remove the role of the U.S. dollar at the center of global trade and finance.**



**This will have a long-lasting structural impact in ending the dominance of the dollar as the world’s reserve currency.**

Over the past years, Trump set out to address inequities in the global trade environment by imposing tariffs and sanctions on various countries from China to Mexico and Canada with the rewriting of the North American Free Trade Agreement into the United States-Mexico-Canada Agreement. Even the countries in the European Union were affected. In addition, Trump implemented sanctions against Russia in 2017, and more recently against Iran, China, and Venezuela, effectively using the dollar’s role at the center of global trade and finance to force compliance of other nations. These actions impacted nations beyond those directly targeted by the U.S. action, and today many governments around the world are taking countervailing steps to remove their reliance on the dollar-based global trade and finance system that has reigned since 1944. That is the result of victory, not cooperation. In case you haven’t noticed, since Trump was removed from office by the Global Syndicate—they actually are not concerned that you know that fact—this is not your grandfather’s America. The country that won World War II no longer exists.

In November, 15 Asian countries, comprising 30% of global GDP, signed the **Regional Comprehensive Economic Partnership** (RCEP), creating a free-trade zone among the signatories. This agreement attempts to provide gains to trading within the regional partnership through reduction of trade and investment barriers, and increased incentives for economic integration. It is noteworthy that RCEP came about without participation of either the U.S. or Europe, and has effectively created the world’s largest trading super-bloc, according to the Rand Corp. It is all done without going through or utilizing dollars.

Beyond the obvious benefits for economic growth in the region, most people overlook the bilateral settlement of trade, without using the dollar as the standard unit of transaction for regional trade. Economist and geopolitical analyst Peter Koenig, a veteran of more than 30 years with the World Bank has made their intentions clear enough.

Liu Xiaochun, deputy dean of the Shanghai New Finance Research Institute, recently furthered this idea, stating, “Under RCEP, currency choices for regional settlement in trade, investment and financing will increase significantly for the yuan, yen, Singapore dollar and Hong Kong dollar.” Liu’s comments were posted to the China Finance 40 Forum, a think tank comprising senior Chinese regulatory officials and financial experts. These think tanks are the policy engines for Virtual-Joe as well. He even publicly stated that China is not our enemy. He believes working with them and supporting them is good for America.

Asia is not the only region taking steps to disentangle itself from the U.S. dollar standard in global trade and payments. The European Commission, the executive branch of the 27-country European Union (EU), released a communication explicitly stating the goal to strengthen the “international role of the euro.” Maybe you missed the resignation of Angela Merkel, the leader of Germany?

The Global Syndicate is finalizing the international monetary system, a more stable and diversified global currency system, and a broader choice for market operators. This document outlines specific action items to help move the EU away from depending on the US dollar for multi-national transactions.

How will they do this? Will they print new money? No. The implementation of a digital finance strategy will be a key component of this new EU strategy, including work on a retail central bank digital currency available to the general public. No more Euros in paper. No more dollars. No more Swiss francs or Rubles.

The Society for Worldwide Interbank Financial Telecommunication (SWIFT), the largest global payment settlement network, has already experienced drop-off in dollar transactions in its most-recent readings. Any time you wire money, you utilize SWIFT codes. There is a transaction fee, which is part of the way they become wealthy and powerful. It is interesting that this occurred after the implementation of RCEP, although the timing also comes in the wake of the Made-4-TV virus and resulting economic disruptions. Sort of puts a new light on the forces behind converting the flu into a deadly pandemic, now doesn’t it?

An additional element to watch will be the allocation of global central banks’ foreign currency reserves to the dollar. Non-dollar currencies recently have strengthened as the dollar has sold off. This has given many nations the opportunity to start to intervene to help stop the appreciation of their currencies and to rebuild their reserves buffers.

Historically, the bulk of international reserves has been in the dollar. Today, a close eye should be kept on these allocations. In fact, data published by the European Central Bank (ECB) and the International Monetary Fund (IMF) show a drastic decline in the dollar as a percentage of total currency reserves since about 2016. That doesn’t sound like America first, does it? No. That sounds like America last. Welcome to the presidency of Virtual-Joe.

**The dollar is facing headwinds. The Game Stop stock standoff between investors and hedge funds is just a skirmish compared to what is really happening.**

These billion-dollar funds are cutting down small companies with naked shorts and bad press to delist these companies. Yes, they are scavenging; picking off the weak and stripping them to the bone while they reap trillions in profits. This devalues the dollar. Gold has shown the effects better than silver, but that is because silver is also being shorted by Morgan Stanley. It does have the largest silver vault in the world, but it has sold those bars a hundred times over. They simply cannot be delivered to the owners. It will take an act of Congress to deliver them from judgement day. It doesn’t matter. The brokers have made their cash and left for green new deals. The Bank will go under, but no one will be on board.

**The pendulum is swinging in the direction of a new, multipolar world.**Countries are reclaiming autonomy in global trade, payments and finance. With the implementation of more regional trade agreements with local currency settlements, the dollar’s once-dominant role in global finance likely will continue to erode.

As the global trade-and-payments systems move away from a single-currency standard, the U.S. dollar, to a digital exchange framework, countries that are the most productive, will be the most at risk, with much more to lose. Of course, without a military force capable or willing to act, the Global Syndicate will soon control the world from a thumb drive. As I stated in 2004 in the Ark of Millions of Years Volume One, t**his change is coming, and we should be ready for the change as it comes.**

**The Way to Safety**

Many people ask me if there is a way for small communities to save themselves from the Global Syndicate. The key word here is small. Or, to put it another way, local. It is not that easy to do, especially if you live in places like Idaho or New Mexico. The stuff you need is so far away. You have to order everything you use to do your business. Nothing is made or grown locally.

But, here are several ways Americans can win. I did not say America. That, I am afraid is all but lost. But you can survive. ***Here are some ways that conservative communities can stop the Reset agenda…***

**Localization**

On a smaller scale, conservatives can accomplish a lot by simply changing their buying habits. If you do 80% of your retail spending with big box stores and online outlets like Amazon and only 20% at local small businesses, then try to switch that ratio. Spend 80% at local businesses and 20% at corporate outlets. Yes, small businesses tend to cost a little extra, but who do you really want your money going to? Do you want your money filling the pockets of Chinese corporate moguls that are working to destroy your freedoms and undermine your economy? Or, do you want your cash to circulate locally? By the way, that includes banking. Open an account at a local credit union and the money will stay in your community and not be vacuumed to New York or London every night to be gambled on the monetary funds.

Individuals can also start their own business from home focusing on production of necessities or necessary skill sets. They can establish a small business co-op and encourage the community to buy locally. Many hands make light work. Often, people just don’t know how many services are available from small businesses in their area, so they automatically go to big box providers. Small businesses must work together to change the dynamic. It means you will have to read the local Penny Saver or bulletin board, instead of Google to find these companies. It has been done this way for centuries before we even used the word click for anything other than a toy.

This strategy also extends to local farms. Consumers and grocery stores need to buy more of their produce from farms in the area and less from chains which ship in produce from other countries. There are millions of acres of farmland in the U.S. that do not grow food at all because these [farms are paid by the federal government](https://www.washingtonpost.com/archive/politics/2006/07/02/farm-program-pays-13-billion-to-people-who-dont-farm/607aecab-caa0-4b2e-832e-a5da6a57a3c3/) **not** to. Encouraging local food production is paramount to remaining free from centralized control.

**Organized Refusal To Comply**

The problem with conservatives is that we tend to be so independent that we avoid organization. This is a problem because it leads to self-isolation. Wearing a mask makes it even more difficult to communicate. During the lockdowns in blue states, some conservative-owned businesses refused to comply, but they were left mostly to fend for themselves with no aid from the wider community. Many lost their licenses, or went to jail rather than comply. If more businesses were to ally with each other and protested in tandem, dozens or hundreds of defiant businesses working together would be a lot harder to shut down than just a few. There would still be casualties. Remember the gym that had their $165,000 legal defense fund stolen by the State of New Jersey for refusing to close their doors? I lost my Twitter, Linkedin, and Facebook business accounts last month for even speaking about these things.

By extension, it’s not enough for conservatives to merely argue against the lockdowns and demand businesses stay open, we need to also **defend** those businesses that take action. We need to support them with our dollars and stand in the way of anyone trying to close them down. They are taking a big risk for us, so we need to be willing to take risks for them.

Imagine if Biden tried to assert a national lockdown order and more than half the businesses in the country ignored him? It’s a little like the National Guard turning their backs on his Washington motorcade and refusing to salute as he passed by. What if patrons refused to allow federal agencies to intimidate those businesses? The lockdowns would be nullified, and Biden would have little recourse.

We already know that our vote was cancelled. That option is no longer available to us.

**Establish Barter Networks**

In the event that the U.S. economy breaks down completely, we must create contingencies to prevent total trade disruption. Without trade, populations become desperate because no one has the ability to provide every necessity all the time. People have to be able to barter goods and services in an open market.

[Barter networks](https://journals.sagepub.com/doi/10.1177/0276146717696894) are a base fundamental, the universal go-to solution during economic collapse. Every society in modern history has used barter markets to stay afloat during financial crisis and to bypass government economic controls. We must be willing to do the same.

Conservatives must start organizing barter networks within their communities **now**. It does not matter if you are trading with a couple of people or hundreds; the process needs to start somewhere.

Why is this so important? Because there is a very good chance that the federal government will try to fiscally punish any state or county that opposes lockdown measures and Reset policies. This means that the government will first seek to cut off federal funding to red states. In the midst of economic crisis, many regions have become reliant on federal stimulus as a crutch, and this dependency makes them vulnerable to control.

To truly rebel against the Reset, local economies need to be free from federal oversight or consequences. With barter networks in place along with possible local scrip and alternative currencies, the public will be less fearful of economic retaliation.

**Take Back Management Of Local Resources**

We have already seen attempts by Biden to disrupt production of carbon based energy resources like [oil](https://www.foxnews.com/politics/biden-keystone-xl-pipeline-cancellation-gut-punch-small-businesses) and [coal](https://www.wsaz.com/2021/01/27/president-biden-discusses-plans-for-the-coal-industry/). Frankly, the time is long past due for states and counties to take back control of more than 624 million acres of lands seized by the federal government without payment. The government has been stifling American production for decades and this has devastated rural communities in particular.

The BLM has essentially destroyed the timber harvesting industry through unfair regulations. This has led to federal mismanagement of forests to the point that fire hazard has become a major issue. All the young men in the county used work as lumberjacks to support their families; now they have to leave, or work as wildland firefighters. It’s completely backwards. And this is happening while [U.S. lumber prices are skyrocketing](https://www.globest.com/2021/01/22/skyrocketing-lumber-prices-deal-a-blow-to-builder-confidence/).

Conservative counties and states need to take back land and resource management and allow reasonable production to return. Biden should have no say in whether or not oil wells in North Dakota stay operational, or coal mines in West Virginia stay open, or trees Montana is selectively harvesting a replating 3-4 trees for every tree cut down. As long as the bulk of wealth from the resource production stays within the state where the resources were harvested, your community will thrive.

If the federal government tries to retaliate by cutting off federal funds, it won’t matter because the states will be producing jobs and wealth for themselves independently. Stop accepting federal funds and cut the strings attached.

**Immunity From Cancel Culture**

In our current political environment, it is becoming a fact of life that the hard left can and will try to harm people that oppose their ideology. Big tech companies and government are helping them to do this. Now more than ever, conservatives that wish to remain free to voice their views and share facts that are contrary to the leftist narrative must seek protection from cancellation. But how do we do this?

For one, we can work for ourselves. Being self employed means never having to worry about being fired because of your political opinions. Or, conservatives need to work for conservatives. This means conservative companies need to focus on hiring conservative employees, and if the leftist mob tries to attack an individual, those companies can easily ignore them. Of course, this also means that conservative consumers need to start making a list of conservative companies that have proven themselves to be immune to leftist pressure. We need to support these companies.

Conservatives should also look into the possibility of campaigns to build more platform alternatives to Big Tech and social media. We need more web service providers that are owned by people who respect free speech rights. We may even need our own internet.

All of these things are possible, but it takes organization and effort. Conservative communities can become safe havens for civil liberties, but this means we cannot be isolated from each other anymore. We have to be connected by more than our principles, we must also be connected through actions. Herd immunity means that at least 50% of a community has been infected and been cured through the production of antibodies. Do not let anyone tell you it is achieved when 75% of a community is vaccinated. That is not herd immunity.

**The Greene New Deal**

Normally, a freshman Congressman, or this case Congresswoman, of the minority Party arrives they go through a bunch of orientation. Then, they are assigned to sit on various do-nothing committees where they are occupied with voting and arguing and pushing papers and then going across the street to dial for dollars for themselves and of course for the Party. If you don’t man the phones raising money, you will not be supported by the Party, and you will quickly lose your next election.

That is exactly what happened to Marjorie Taylor Greene. But then, she made the fatal mistake of winning as a MAGA convert. Democrats issued a kill order, and used their majority status in Congress to remove her from all her committees, even though she was a Republican. That’s a first. Never in history has the majority used their power to remove a minority party member of a committee; in fact all committees.

What good is it to be a Congressman and not be on any committees? What a great question. For the first time in American history, we are about to find out. This is the Greene New Deal.

After Democrats successfully ousted Greene from her committees, Congressman Matt Gaetz warned that they had made her “possibly one of the most powerful Republicans in Congress.” Not stopping there, he said that they had definitely made her “the most powerful freshman in Congress.”

“Bravo, Marjorie Taylor Greene,” Gaetz said in response to her last press conference. “That was so good I almost had to smoke a cigarette afterward. She was policy-focused; she was graceful. I think she pointed out the hypocrisy in the media.”

“Most importantly … we saw that yesterday Democrats made Marjorie Taylor Greene certainly the most powerful freshman in Congress and possibly one of the most powerful Republicans in Congress,” Gaetz added.

“What other freshman could command a press conference like that and get it carried live with the opportunity to share the views and values that emanate from their district?” Gaetz questioned.

“Marjorie is off the proverbial leash right now,” Gaetz concluded. “I think she’s going to be a major communicator.”

“And if she shows the grace and the focus and the attention to policies that matter to everyday Americans like she did in that press conference, she is going to be a very successful congresswoman,” he said.

Greene took to Twitter on Friday morning to say, “I woke up early this morning literally laughing thinking about what a bunch of morons the Democrats (+11) are for giving some one like me free time.”

“In this Democrat tyrannical government, Conservative Republicans have no say on committees anyway,” she added. “Oh this is going to be fun!”

During her press conference, Greene claimed that Democrats have “stripped my district of their voice” by removing her from the committees, according to the [**BBC**](https://www.bbc.com/news/world-us-canada-55940542). What we have now clearly is taxation without representation. That is the pure definition of tyranny. She also blasted the Democratic-run government as “tyrannically controlled” and denounced the upcoming Senate impeachment trial of Donald Trump.

Greene went on to go after the media for “addicting people to hate. She has nothing better to do with her time but stand on the House Floor and enter the truth into the Congressional Record.

**Cheney Survives, but Wyoming Justice May Still Come**

Rep. Liz Cheney's (R-WY) colleagues in the House may have been willing to overlook her impeachment vote, but Wyoming Republicans are not. On Saturday, the state's Republican Party officially censured Cheney and called for her resignation.

Sixty-six members on the state GOP's 74-member committee [reportedly](https://apnews.com/article/donald-trump-capitol-siege-censures-rawlins-wyoming-3d2a5ad3377bb748c22f632642ba23f1)agreed to the censure, accusing Cheney of voting to impeach President Trump even though the House failed to offer the president a formal hearing or due process.

Before casting her impeachment vote, Cheney said Trump "summoned the mob, assembled the mob, and lit the flame of this attack," in reference to the Capitol riot in early January.

According to a [copy](https://twitter.com/AndrewSolender/status/1358166738047746052) of the censure obtained by Forbes, the state GOP is calling on Cheney to "immediately resign" and allow the state party to nominate her replacement. They also ask Cheney to return donations made to her campaign.

Cheney is Wyoming's at-large representative in the House. And since 70 percent of Wyoming voters cast their ballots for President Trump, it's safe to say Cheney's constituents weren't thrilled when their representative led a small group of House Republicans in voting for impeachment. In fact, Wyoming Republicans were furious.

Following the vote, the Wyoming Republican Party said in a [statement](https://townhall.com/tipsheet/bronsonstocking/2021/01/14/wyoming-gop-blasts-liz-cheney-for-aligning-herself-with-leftists-n2583147) that never before has the party seen "this type of an outcry from our fellow Republicans." According to the statement, "the anger and frustration" is "palpable in the comments" the party received. The statement said the party believes it's important for elected officials to respect and represent their constituents and called Cheney's vote to impeach Trump a "true travesty for Wyoming and the country."

In an effort to share just some of the overwhelming feedback with Cheney, the party summarized some of the comments they received from angry Republicans: Cheney denied President Trump due process, she judged "evidence" before it was presented and available, she ignored Trump's comments asking his supporters to protest "peacefully," she sided with Democrats who egged on leftists rioters for months last year, aligned herself with leftists skewing facts about the Capitol riot, allowed herself to be used by Democrats to smear the entire conservative movement, and allowed another impeachment circus to distract Congress from representing the interests that truly matter to the people of Wyoming.

Cheney is now facing a primary challenge in the form of Wyoming GOP Sen. Anthony Bouchard. Several of the ten Republicans who joined Cheney in voting for impeachment have similarly been [censored](https://townhall.com/tipsheet/bronsonstocking/2021/01/24/liz-cheney-isnt-the-only-house-republican-getting-censured-for-impeachment-vote-n2583631) or find themselves facing new primary opponents.

**ISS Flyover for SuperBowl LIV**

You wanna know what’s cool? Getting the ISS to fly over on queue. Astronauts on the [International Space Station](https://www.space.com/16748-international-space-station.html) just might have the ultimate nosebleed seats for the Super Bowl.

When the Kansas City Chiefs and Tampa Bay Buccaneers face off in Super Bowl LV today (Feb. 7) in Tampa Bay, Florida, the space station — currently home to seven space travelers — will soar over the Raymond James Stadium stadium hosting the epic football game. If the weather is clear, station astronauts could try to spot the stadium from space. In fact, one astronaut already has spotted the game's host city from orbit.

"Tampa, Florida, host city of Super Bowl LV," wrote astronaut Soichi Noguchi of the Japan Aerospace Exploration Agency on Friday (Feb. 5) [as he shared the photo on Twitter](https://twitter.com/Astro_Soichi/status/1357709919428878336).

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The space station will fly over the Super Bowl at 7:15 p.m. EST (0015 Feb. 8 GMT), about 45 minutes after kickoff as the football game is in full swing, NASA officials said.

"Weather permitting, the sighting opportunity will be about the same time two NFL football teams will be competing to win the game at Raymond James Stadium," the space agency [wrote in an update](https://blogs.nasa.gov/spacestation/2021/02/05/crew-looks-to-u-s-space-record-and-super-bowl-flyover/).

The space station flyover isn't the only space connection to Super Bowl LV.

The game's first quarter will include [a commercial for a private spaceflight called Inspiration4](https://www.space.com/super-bowl-2021-spacex-inspiration4-commercial) led by billionaire Jared Isaacman, founder of Shift4 Payments. The 30-second ad will invite the public to enter two contests to win a seat on the mission, which will launch on a SpaceX rocket and Crew Dragon spacecraft later this year.

[Isaacman has bought out the SpaceX flight](https://www.space.com/spacex-unveils-inspiration4-all-private-spaceflight), which is expected to fly four people in orbit on a Crew Dragon for two to four days, and is giving away the three other seats. One will go to a cancer survivor and healthcare worker from St. Jude's Children Research Hospital. Another seat will go to the winner of an entrepreneur contest run by Shift4Shop, while the final seat is reserved for the winner of a random drawing of people [who donate to St. Jude's via the Inspiration4 website](http://www.inspiration4.com/).

The space station's current Expedition 64 crew includes four NASA astronauts, two Russian cosmonauts and Noguchi, who represents Japan. The astronauts live and work on Greenwich Mean Time, so Super Bowl LV will be occurring late at night in their schedule. (The station's flyover is shortly after midnight station time.)

It's unclear if some of the crew plan to stay up late to watch the Chiefs and Buccaneers battle it out in Tampa Bay, but it's likely NASA will have the results available to relay up to the astronauts if the crew asks on Monday morning.

**GRS 1915+105 Goes Dark**

Beginning in 2018, one of the brightest [X-ray](https://www.livescience.com/32344-what-are-x-rays.html) lights in the sky went dark, and scientists still aren't sure why.

The black hole responsible for creating the lights-out mystery lives in GRS 1915+105, a star system 36,000 light-years from Earth containing both a normal star and the second-heaviest known black hole in the Milky Way. That heavyweight is 10 to 18 times the mass of the sun and second in mass only to Sagittarius A\* (or SgrA\*), the supermassive black hole in the galactic center. The region around the GRS 1915+105 black hole typically shines with an intense [X-ray light](https://www.livescience.com/32344-what-are-x-rays.html), as it feeds on its companion star. As the material circles the cosmic drain, the particles within rub together, generating energy before dropping into the darkness at the black hole's center. That swirling material is the black hole's accretion disk, which lights up with X-rays as the black hole devours more and more sustenance.

But researchers saw something surprising beginning in July 2018: The light from the GRS 1915+105 system began to dim. Then, in early 2019, the light dimmed even more, and no one had ever seen anything like it before.

So what's going on?

"We suggest that this state should be identified as the 'obscured state,'" the researchers wrote in a new paper published Jan. 1 to the [arXiv](https://arxiv.org/pdf/2012.15033.pdf) database, which has not yet been peer-reviewed.

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In other words, something has come in between the light source and the Swift X-ray Telescope that's been monitoring the object, obscuring the telescope's view.

Plenty of light is still coming from the bright region near the black hole's event horizon, which astronomer's sometimes call the "engine," as well as the larger "accretion disk" of infalling matter. But that light isn't reaching Earth the way it used to.

"The obscuration geometry" — the precise nature of the structure that's blocking the light — "is hard to discern," said lead study author Mayura Balakrishnan, a graduate student in astronomy at the University of Michigan.

No existing telescope can resolve details of the faraway system, so Balakrishnan and her co-authors had to make inferences from how the light coming from GRS 1915+105 changed from day to day between 2018 and 2019.

Black holes with large companion stars sometimes dim because stellar winds from their companions can push clouds of gas in front of their lights.

"In the case of GRS 1915+105," Balakrishnan told Live Science, "the companion star is low-mass and does not have massive stellar winds that would create the observed obscuring gas."

The researchers concluded that "there is a lot of gas in some structure that scatters and blocks light coming from the central engine and accretion disk."

In other words, whatever's blocking the light is likely coming from the accretion disk itself.

The nature of that structure, however, is still a mystery. GRS 1915+105 is interesting to astronomers because its X-ray engine resembles a scale model of the engines that drive many supermassive black holes at the centers of distant galaxies. The difference is that the fuel for supermassive black holes comes from clouds of matter in their galactic cores, while GRS 1915+105 rips its fuel from a neighboring star. So understanding what's going on with this star-eater could shed light on what's going on in the heaviest objects in the universe.

**Where Does a Black Hole Lead To?**

So there you are, about to leap into a [black hole](https://www.space.com/15421-black-holes-facts-formation-discovery-sdcmp.html). What could possibly await should — against all odds — you somehow survive? Where would you end up and what tantalising tales would you be able to regale if you managed to clamber your way back?

The simple answer to all of these questions is, as Professor Richard Massey explains, "Who knows?" As a Royal Society research fellow at the Institute for Computational Cosmology at Durham University, Massey is fully aware that the mysteries of black holes run deep. "Falling through an event horizon is literally passing beyond the veil — once someone falls past it, nobody could ever send a message back," he said. "They'd be ripped to pieces by the enormous gravity, so I doubt anyone falling through would get anywhere."

If that sounds like a disappointing — and painful — answer, then it is to be expected. Ever since Albert Einstein's [general theory of relativity](https://www.space.com/17661-theory-general-relativity.html) was considered to have predicted black holes by linking space-time with the action of gravity, it has been known that black holes result from the death of a massive star leaving behind a small, dense remnant core. Assuming this core has more than roughly three-times the [mass of the sun](https://www.space.com/17001-how-big-is-the-sun-size-of-the-sun.html), gravity would overwhelm to such a degree that it would fall in on itself into a single point, or singularity, understood to be the black hole's infinitely dense core.

The resulting uninhabitable black hole would have such a powerful gravitational pull that not even light could avoid it. So, should you then find yourself at the event horizon — the point at which light and matter can only pass inward, as proposed by the German astronomer Karl Schwarzschild — there is no escape. According to Massey, tidal forces would reduce your body into strands of atoms (or 'spaghettification', as it is also known) and the object would eventually end up crushed at the singularity. The idea that you could pop out somewhere — perhaps at the other side — seems utterly fantastical.

Or is it? Over the years scientists have looked into the possibility that black holes could be [wormholes](https://www.space.com/20881-wormholes.html) to other galaxies. They may even be, as some have suggested, a path to another universe.

Such an idea has been floating around for some time: [Einstein](https://www.space.com/15524-albert-einstein.html) teamed up with Nathan Rosen to theorise bridges that connect two different points in space-time in 1935. But it gained some fresh ground in the 1980s when physicist Kip Thorne — one of the world's leading experts on the astrophysical implications of Einstein's general theory of relativity — raised a discussion about whether objects could physically travel through them.

"Reading Kip Thorne's popular book about wormholes is what first got me excited about physics as a child," Massey said. But it doesn't seem likely that wormholes exist.

Indeed, Thorne, who lent his expert advice to the production team for the Hollywood movie Interstellar, wrote: "We see no objects in our universe that could become wormholes as they age," in his book "The Science of Interstellar" (W.W. Norton and Company, 2014). Thorne told Space.com that journeys through these theoretical tunnels would most likely remain science fiction, and there is certainly no firm evidence that a black hole could allow for such a passage.

But, the problem is that we can't get up close to see for ourselves. Why, we can't even take photographs of anything that takes place inside a black hole — if light cannot escape their immense [gravity](https://www.space.com/classical-gravity.html), then nothing can be snapped by a camera. As it stands, theory suggests that anything which goes beyond the event horizon is simply added to the black hole and, what's more, because time distorts close to this boundary, this will appear to take place incredibly slowly, so answers won't be quickly forthcoming.

"I think the standard story is that they lead to the end of time," said Douglas Finkbeiner, professor of astronomy and physics at Harvard University. "An observer far away will not see their astronaut friend fall into the black hole. They'll just get redder and fainter as they approach the event horizon [as a result of gravitational red shift]. But the friend falls right in, to a place beyond 'forever.' Whatever that means."

Artist's concept of a wormhole. If wormholes exist, they might lead to another universe. But, there's no evidence that wormholes are real or that a black hole would act like one.  (Image credit: Shutterstock)

**Maybe a black hole leads to a white hole**

Certainly, if black holes do lead to another part of a galaxy or another universe, there would need to be something opposite to them on the other side. Could this be a [white hole](https://www.space.com/white-holes.html) — a theory put forward by Russian cosmologist Igor Novikov in 1964? Novikov proposed that a black hole links to a white hole that exists in the past. Unlike a black hole, a white hole will allow light and matter to leave, but light and matter will not be able to enter.

Scientists have continued to explore the potential connection between black and white holes. In their 2014 study published in the journal [Physical Review D](https://journals.aps.org/prd/abstract/10.1103/PhysRevD.92.104020), physicists Carlo Rovelli and Hal M. Haggard claimed that "there is a classic metric satisfying the Einstein equations outside a finite space-time region where matter collapses into a black hole and then emerges from a while hole." In other words, all of the material black holes have swallowed could be spewed out, and black holes may become white holes when they die.

Far from destroying the information that it absorbs, the collapse of a black hole would be halted. It would instead experience a quantum bounce, allowing information to escape. Should this be the case, it would shed some light on a proposal by former Cambridge University cosmologist and theoretical physicist [Stephen Hawking](https://www.space.com/15923-stephen-hawking.html) who, in the 1970s, explored the possibility that black holes emit particles and radiation — thermal heat — as a result of quantum fluctuations.

"Hawking said a black hole doesn't last forever," Finkbeiner said. Hawking calculated that the radiation would cause a black hole to lose energy, shrink and disappear, as described in his 1976 paper published in [Physical Review D](https://journals.aps.org/prd/abstract/10.1103/PhysRevD.14.2460). Given his claims that the radiation emitted would be random and contain no information about what had fallen in, the black hole, upon its explosion, would erase loads of information.

This meant Hawking's idea was at odds with quantum theory, which says information can't be destroyed. Physics states information just becomes more difficult to find because, should it become lost, it becomes impossible to know the past or the future. Hawking's idea led to the 'black hole information paradox' and it has long puzzled scientists. Some have said Hawking was simply wrong, and the man himself even declared he had made an error during a scientific conference in Dublin in 2004.

So, do we go back to the concept of black holes emitting preserved information and throwing it back out via a white hole? Maybe. In their 2013 study published in [Physical Review Letters](https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.110.211301), Jorge Pullin at Louisiana State University and Rodolfo Gambini at the University of the Republic in Montevideo, Uruguay, applied loop [quantum gravity](https://www.space.com/quantum-gravity.html) to a black hole and found that gravity increased towards the core but reduced and plonked whatever was entering into another region of the universe. The results gave extra credence to the idea of black holes serving as a portal. In this study, singularity does not exist, and so it doesn't form an impenetrable barrier that ends up crushing whatever it encounters. It also means that information doesn't disappear.

**Maybe black holes go nowhere**

Yet physicists Ahmed Almheiri, Donald Marolf, Joseph Polchinski and James Sully still believed Hawking could have been on to something. They worked on a theory that became known as the AMPS firewall, or the black hole firewall hypothesis. By their calculations, quantum mechanics could feasibly turn the event horizon into a giant wall of fire and anything coming into contact would burn in an instant. In that sense, black holes lead nowhere because nothing could ever get inside.

This, however, violates Einstein's general theory of relativity. Someone crossing the event horizon shouldn't actually feel any great hardship because an object would be in free fall and, based on the equivalence principle, that object — or person — would not feel the extreme effects of gravity. It could follow the laws of physics present elsewhere in the universe, but even if it didn't go against Einstein's principle it would undermine quantum field theory or suggest information can be lost.

Artist's impression of a tidal disruption event which occurs when a star passes too close to a supermassive black hole. (Image credit: All About Space magazine)

**A black hole of uncertainty**

Step forward Hawking once more. In 2014, he published a [study](https://arxiv.org/abs/1401.5761) in which he eschewed the existence of an event horizon — meaning there is nothing there to burn — saying gravitational collapse would produce an 'apparent horizon' instead.

This horizon would suspend light rays trying to move away from the core of the black hole, and would persist for a "period of time." [In his rethinking](https://www.space.com/24454-stephen-hawking-black-hole-theory.html), apparent horizons temporarily retain matter and energy before dissolving and releasing them later down the line. This explanation best fits with quantum theory — which says information can't be destroyed — and, if it was ever proven, it suggests that anything could escape from a black hole.

Hawking went as far as saying black holes may not even exist. "Black holes should be redefined as metastable bound states of the gravitational field," he wrote. There would be no singularity, and while the apparent field would move inwards due to gravity, it would never reach the center and be consolidated within a dense mass.

And yet anything which is emitted will not be in the form of the information swallowed. It would be impossible to figure out what went in by looking at what is coming out, which causes problems of its own — not least for, say, a human who found themselves in such an alarming position. They'd never feel the same again!

One thing's for sure, this particular mystery is going to swallow up many more scientific hours for a long time to come. Rovelli and Francesca Vidotto recently suggested that a component of dark matter could be formed by remnants of evaporated black holes, and Hawking's paper on black holes and 'soft hair' was [released in 2018](https://arxiv.org/pdf/1601.00921.pdf), and describes how zero-energy particles are left around the point of no return, the event horizon — an idea that suggests information is not lost but captured.

This flew in the face of the no-hair theorem which was expressed by physicist John Archibald Wheeler and worked on the basis that two black holes would be indistinguishable to an observer because none of the special particle physics pseudo-charges would be conserved. It's an idea that has got scientists talking, but there is some way to go before it's seen as the answer for where black holes lead. If only we could find a way to leap into one.