Our Club

RCSI is a nonprofit 501(c)(3) group open for membership to anyone interested in computers and new technology. Established in 1981, our aim is to provide an exchange of information between users of digital devices. We are not in any way affiliated with any computer manufacturer or software company, and *we do not sell your data or email address*.

Program Meetings

No admission fee for non-members. Everyone is welcome! Second Tuesday of every month, except July and August, from 6:30pm – 8:30pm.

Help's Half Hour (Q & A) 6:30pm – 7:00pm. *Members and Guests are welcome to attend and bring their computer related questions with them to get answered*.

7:00 – 7:15, Club Business

7:15 – 8:30+, Main Presentation

Come and join in the fun and enjoy a snack! **You are welcome to bring a guest**.

Become a Member

The club would like to have you as a member, and your subscription will help to keep us going. Go to our website, www.rcsi.org, and download a printed form for use by the Post Office mail, **or** enter your info online and pay with a credit card or PayPal, **or** attend a meeting.

The Rochester Computer Society, Inc.

a computer/tech club open to everyone

M NIT R

**September 13, 'Robocall Defense'
by John Krout via Zoom**

**October 11, Annual Security Presentation
by Bob Gosticha, via Zoom**

In This Issue

If I Leave My Computer Always On, Am I More Likely to Be Hacked?

It's what you do that matters.

by Leo Notenboom, https://askleo.com/
Making Technology Work For Everyone

Leaving your computer on 24 hours a day rarely increases risk significantly, as long as you follow a couple of simple guidelines. Does leaving your computer on all the time make it more likely it can be hacked? In general, no, but there are exceptions. Whether your computer is on or off is rarely the issue. There are other things that matter more.

"Your Computer User Group of the Air", Saturdays from 12:00 pm to 2:00 pm, with Nick Francesco, Dave Enright, and Steve Rae. Broadcasting on JAZZ 90.1 FM (WGMC) from Rochester, NY. Call 966-JAZZ (585-966-5299) or 800-790-0415, **www.jazz901.org** *Sound Bytes is the longest running computer call-in show in the known universe.*

We have stopped printing the Monitor newsletter. Digital copies can be emailed or obtained from **www.rcsi.org** or my **Pcloud** storage at **https://tinyurl.com/tonydel-rcsi** (*this link works in PDF version only*). Also includes presentation slides and articles too large for this newsletter.

Some Past Presentations:
The New Space Race, 2021
Tech of South America
Autonomous Cars and Robots
Open Source and Free Software
Protecting Your Identity
Tablets, the Programs and Uses
Personal Finance Software
Amazing Browser Tips
Linux is Like Cars
Drones and Their Many Uses
Gifts and Gadgets for the Holidays
Cut the Cord, Streaming Services
Keeping Mobile Devices Secure
3D Printing, ENABLE project
Internet Security and Privacy
Flash Drives-Not Just for Storage
Features, Mac OS X & Windows

Is always-on more dangerous?
As long as you're behind a router to prevent random outside attacks from reaching your computer, and as long as you're running software you trust from sources you trust, then running your computer 24 hours a day does not significantly increase your vulnerability to hackers. Using your computer securely protects you whether you're actively using it or not.

Get thee behind a router
You probably have a router, as that's the device that allows you to share your single Internet connection among all of your Internet-connected devices. A router acts as a fantastic firewall, preventing outside threats from reaching your computer uninvited. Even if you have only one Internet-connected device, I still recommend using a router for this reason alone.

If your computer is not connected to a router — meaning it's connected directly to the Internet — then yes, you are at higher risk of compromise for every moment your computer is running. Theoretically, the security software on your computer will protect you, but this is also where unpatched vulnerabilities really come into play. If an outside attacker can reach your machine and exploit such a vulnerability, your machine can be hacked.

Use a router. The good news is that you probably already are.

It's what you do that matters most
Note that I said a router prevents outside threats from reaching in to your computer *uninvited*. That last word is critical.

Most malicious software gets to your machine because you invite it in. For example, a router can't protect you from downloading and opening a malicious email attachment. Your security software might; in fact, it probably should, but there's no guarantee.

You probably understand that. The real question is whether your machine is more vulnerable while you're *not* using it. It depends on what the machine is configured to do while you're away.

It's what your machine does that might surprise you
You may think that when you leave your computer, it just sits there quietly waiting for you to come back, but it's not that simple. Your machine may do things like download software updates and sync data with other devices using tools like Dropbox or OneDrive. Those actions could download malware.

Having your machine off doesn't really prevent it, as it would happen the next time you turned your machine on. Ultimately, it really comes down to making sure you use only software you trust from sources you trust, because anything you install has the potential to download more without your knowledge.

Do this
I leave my machine on 24 hours a day. Yes, leaving it on all day means that it's more 'available' for malicious activity than if I turned it off when

not in use. But, honestly, if malicious activity is going to happen, it is just as likely to happen while the machine's in use as it is when not.

I secure myself by:

- Having a router between my computer and the Internet.
- Only running software I trust.
- Only getting software from sources I trust.
- Backing up regularly so that if something happens I can easily recover.

I recommend you do the same.

I also recommend you subscribe to Confident Computing! Less frustration and more confidence, solutions, answers, and tips in your inbox every week.

End of Article # #

Online Privacy Is a Myth: What You Can and Can't Do About It
by Chris Hoffman, Editor-in-Chief of How-To Geek

We all want to recover (and maintain) our online privacy. There are lots of features and industries built around fighting for privacy, from private-browsing modes and tracker blockers to private VPNs. But online privacy is a myth—and offline privacy might be one, too.

Yes, a Myth
Myths are stories (or narratives) that are often foundational to a society's beliefs. The myth of online privacy is like that: Privacy feels foundational in our society. To the extent we accept we don't have privacy online, it feels like something we've lost—something that we can perhaps recover with the right software tweaks, behaviors, or perhaps regulations.
When you think about it, the myth of online privacy is even beneficial to those industries that benefit from the lack of it. We all might agree that there's no privacy online, but leave us to a search engine, and we'll search an endless list of everything that comes into our minds, including potentially sensitive topics like medical questions. Police even dig through those search histories to look for criminals.

Breaking the Privacy Illusion
We may all agree that online privacy isn't something we have. But do you realize how little privacy you actually have?
First of all, when you go online, your Internet service provider—whether that's a home Internet connection or a cellular data connection—can see all the websites you're accessing. In the USA, they can even sell your browsing data. Your mobile carrier may even be tracking and selling your app usage activity.
When you visit a website, it can see your IP address and use that to track you across visits. But it likely loads a lot of tracking scripts, too. Those tracker networks can track your activity across multiple websites. That's one reason you see shopping ads chase you across the web after

you look up a particular product. Even if you're clearing cookies, there are a lot of ways to fingerprint your web browser.

"The cloud" is just someone else's computer. If you upload your files to the cloud without using end-to-end encryption—something most services don't offer—your files can be viewed and accessed by the company that owns the cloud service. The same goes for messages and emails, which generally aren't encrypted either.

Okay, you might know all that—but did you know that advertisers can tie your in-store purchases and visits back to ads you see? For example, Google has a product that does this, and one of the data sources it uses is the nebulous "transaction data uploaded by the advertiser or aggregated and anonymized data from third parties." Your credit card usage is being used to track you, too.

Did you know that Facebook's advertising tools are so granular that you can target ads so narrowly that you can show them to only one individual?

Government surveillance is a given: Edward Snowden famously drew attention to massive warrantless government surveillance of Internet and phone data. The NSA's XKeyScore software reportedly allows real-time search and access to the massive amount of data being logged about online activity.

The online world isn't something completely separate from the real, physical world, of course. The USA is full of automatic license plate readers, and many of them are now linked together in a big network. Even if you get off the computer and go for a drive, your movements are being tracked and logged. Amazon may be handing videos from your Ring doorbell camera over to the authorities without your explicit consent. Your cell phone location data is being used to track you, too.

What Can You Even Do?

An article like this one could go on and on with examples. Do a little digging, and you can find many more examples. The amount of data being collected, crunched, and analyzed about us at all times is tough to conceptualize.

There are no perfect fixes. Private browsing will stop your browser from remembering your history and give you a fresh set of temporary cookies, but your IP address is still out there. You can avoid using Facebook, but Facebook has a shadow profile on you anyway. You can use a VPN, but you're going to sign into something eventually—which will tie your identity to your browsing in the VPN—and you're placing your trust in a VPN that hopefully doesn't keep logs.

So what can you do? Well, you can still make a dent in it. If you're currently broadcasting your life as a 24/7 live stream, turning off the camera means less data is out there.

You can use a VPN along with private browsing mode to disguise your browsing—but don't just rely on a VPN alone, and understand that you're trusting the VPN. You could use Tor—though there have been vulnerabilities in Tor, too. You can use more private, encrypted services —for example, chatting on Signal instead of plain-old SMS messages. You can keep your sensitive files more private, storing them locally or securely encrypting them before uploading them to online storage.

Tidbits of probably useless information

There are thirty thousand known species of wasps. Social wasps employ their stingers and venom for defense, whereas solitary wasps utilize them for hunting. Only female wasps possess stingers, which are modified egg-laying organs. A deodorant containing aluminum may be used to cure a common sting.

Every fish needs oxygen as much as any animal in this world does. They have gills that are used in extracting oxygen from the water. Fish uses gills to allow water in and extract oxygen out of water. The blood vessels on the surface of gills absorb oxygen into the body. So, basically, gills act as lungs.

Did you know that for the first three weeks after birth, mother dogs will lick their pups to encourage them to eliminate and clean up their excrement by eating it? Puppies will naturally indulge in this activity as well, eating their own feces (autocoprophagia), feces from other dogs (allocoprophagia), as well as feces from cats and other animals. While eating their own excrement is OK, eating other animals waste is not. They may get a variety of diseases.

Squirrels are present in almost every continent except Antarctica. They can live in almost every habitat like tropical forests, temperate forests, semi-arid deserts, etc. However, they avoid deserts and polar regions. They eat seeds, nuts, conifer cones, fungi, fruits, green vegetation, etc. However some squirrel species eat meat when there is acute food shortage. They can eat small young birds, small snakes, insects, bird eggs, etc.

And yes, you can go further: Using cash, for example, and putting together facial accessories that will stop facial recognition cameras.

What's the Point? Threat Modeling 101

But as you're sitting there using Tor on a computer running Tails trying to figure out how to go off the grid without actually going off the grid, you might want to ask yourself: What's the point?

No, we don't mean give up—we mean consider what you're actually defending against.

- You might not care if Facebook realizes you're interested in seeing the latest movie. But you might want to fire up that VPN and private browsing mode when you're searching for information about a medical issue.
- You might be fine with storing photos of your vacation unencrypted in the cloud, but you might want to keep sensitive financial documents more secure.
- You might be fine chatting with your plumber over SMS, but you might want to have a private conversation with your spouse on Signal.

It's all about your threat model—what are you actually trying to defend against? Once you know what you care about keeping private, you can take steps to keep that individual sensitive thing private rather than be overwhelmed with all the data collection going on all the time.

Unfortunately, that's not a recipe for "online privacy." There's no easy way to flip a privacy switch and regain a mythical state of privacy. But there are things you can do to better shield specific things and keep them more private.

This article was copied from
https://www.howtogeek.com/819686/online-privacy-is-a-myth-what-you-can-and-cant-do-about-it/.

* * * * * SOFTWARE and HARDWARE * * * * *

Tech Essentials for Windows
Everyone Should Know These TOP-25

By Jim Cerny, Forums Coordinator,
and Class Instructor

We get comfortable on our sofa while technology keeps marching on. Here is what I would consider being the absolute BASIC knowledge you need to enjoy your Windows computer. I do not include tablets or smartphones here, but I bet you can guess which of these would apply to them as well. Ok, can you check all these off your "must know" list? Try rating each of these as to your knowledge level – "confident," "so-so," or "need to know more." If you have doubts, please Ask Google about it or ask people at your computer group.

1. Turn your device on and off, including totally off, so you don't use the battery.

Windows & Android Tips

HOW TO EDIT WEBPAGE WHILE SAVING TO PDF – Do you occasionally want to save a webpage as a PDF or print it? This simple implementation works in Mozilla Firefox and any Chromium-based browser such as Google Chrome, Microsoft Edge, and Brave. It should work in any Windows browser. These instructions are illustrated for Google Chrome because it is a very popular browser. However, it's a very similar procedure in any browser.
Dave's Computer Tips has the How-To here. http://bit.ly/38zYiiW

HOW TO CLEAN YOUR COMPUTER KEYBOARD –
From a simple chassis shakedown to removing all the keycaps and the outer shell and bathing certain bits, these tips will help you banish that keyboard grime. Gather your cleaning supplies and learn how best to spruce up a keyboard, here.
https://bit.ly/3l2URq4

4 BEST APPS TO MAKE YOUR ANDROID WORK LIKE NEW AGAIN – Missing the performance of your brand-new Android? We can't take you back in time, but we can show you a few apps that can speed things up again. Running a cleaner is one way to boost your phone's performance. It can help improve your device's speed and help declutter by removing junk files. We've rounded up four excellent options you can count on to get your Android squeaky clean and back to its original, speedy self. Kim Komando has the 4 apps explained here.
https://bit.ly/2OgjSCm

2. Mouse use – left-click, right-click, and scroll wheel.

3. Camera, speakers, earbuds, microphone, and other such plug-ins.

4. Printer hookup, text, change ink cartridges.

5. Internet modem test, restart, and know you are on the Internet.

6. Open an app in a window. Change the size of a window, minimize and maximize it.

7. Move a window on your screen, work with more than one window open at the same time.

8. Closing a window.

9. Touchscreen skills – swiping, dragging, touching, enlarging, shrinking the screen, etc.

10. Log in to an account and log out after you are done.

11. Security app or software, know that it is working, scanning your computer for possible problems.

12. Keep ALL your passwords and logins in a good place.

13. Basic Windows settings – personalization, screen text size, and other options you can set for the way you use your computer.

14. Download a new app.

15. Search the Internet for anything.

16. Find all the apps on your computer (Windows "start" button) and delete an app you no longer want.

17. Basic email skills – send a new email, maintain your CONTACT LIST, forward an email to others, add an attachment file.

18. Text editing – enter text, correct text, highlight text, copy and paste text.

19. Copy and paste other files and things such as a photo from the Internet.

20. Browse the Internet, going to different web pages, bookmark web pages, etc.

21. Use File Explorer to work with files and folders – rename, delete, create new folders, organize, etc.

22. Use a plug-in memory device, such as a small "pocket" drive, backup drive, or disc.

23. Create a new icon on your desktop, delete icons you no longer want.

24. Do online banking at your bank.

25. Taskbar functions and areas – Windows icon, search bar, quick-launch, notifications, etc.

PC Maintenance & Utility Software

www.davescomputertips.com

[Aomei Partition Manager Standard](#) – Excellent comprehensive partition manager. Free for both home and commercial use.

[MiniTool Partition Wizard Free](#) – Comprehensive partition manager which includes all major functions.

[EASEUS Partition Master Home Edition](#) – Another excellent free and comprehensive hard disk partition manager; Resize, move, create/delete, hide/unhide, format, copy, merge, wipe, convert.

[Rufus](#) – Create bootable USB flash drives. Easy to use, free and portable. The best!

[Ventoy](#) – Create multi-boot USB flash drives for multiple ISO files. Free and portable, simple to use. Extremely effective.

[Wise Disk Cleaner](#) – Free and portable hard drive cleaner, very effective at cleaning useless junk files and safe to use.

[PrivaZer](#) – Excellent free cleaning and privacy tool. Deep cleans many areas. Securely erases all traces for enhanced privacy. Best in its class. Portable version available.

[CCleaner](#) – Very popular free privacy and cleaning tool. Removes temporary files, internet traces, and includes basic registry cleaner. Very safe and easy to use.

[Recuva](#) – Recuva is free software which helps recover accidentally deleted files from hard drive, camera card, MP3 Player or flash drive.

Remember when you used a mouse for the first time? I bet you haven't realized how much technology you have learned in the past ten years or so. Don't forget to Ask Google if there is anything on this list you are unsure about; it is a great way to learn. Don't be left behind -- you'll miss out on some fun stuff now and what's coming in the future.

Reprinted from https://thestug.org/, jimcerny123@gmail.com.

Logic Game Apps for Android and iPhones

By [Dorothy Fitch](#), Editor, Green Bytes

I seem to have become addicted to logic games on my Kindle (and sometimes my phone). I guess of all the possible addictions, this one would rank low in being troubling. However, these games can be time-consuming when I should be doing more productive things. So, I figure it might let me know if my mental faculties start to wane if I happen to notice.

How do I choose a logic game? I look for free games and read reviews. After downloading a game, I see how easy it is to learn to play it, whether it has a tutorial, and if there are either no ads or non-intrusive ones. These three games passed those tests. Beware, they can be addictive, and you may (as I did in one case) spend a tiny amount of cash to get more levels. However, because they are logic puzzles, you can generally play the same puzzle multiple times because you won't remember the layout or solution.

Here are my favorite three

Thermometer Puzzles

Download to your Kindle from Amazon.
**Download a version for your phone at the Play Store.**
Download a version for your iPhone.
This puzzle comes with 260 games, but I'll confess to spending $5.99 for another 900 games. Nevertheless, it offers a good tutorial and a handy "undo" option.

The object is to fill the thermometers with mercury to have the correct number of red squares as indicated by the labels at the top and left sides. Unfortunately, the mercury starts at the "bulb" end of a "tube" and can't reappear after an empty cell. The difficulty ranges from grid sizes of 4x4 to 11x11 (or 13x13 if you purchase all the levels).
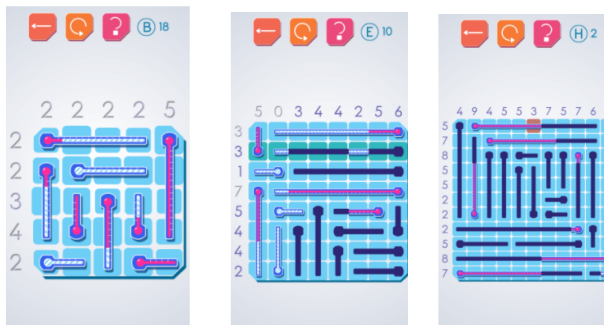
Click to enlarge any of these images.

Interesting Internet Finds
By Steve Costello
scostello@sefcug.com

Internet Problems? Here's How To Tell If It's Your ISP's Fault
https://www.howtogeek.com/740382/internet-problems-heres-how-to-tell-if-its-your-isps-fault/
It is a matter of when not if you will have internet problems. Do you know how to tell if it is your ISP's fault or your fault? Check out this article to find out how to know whether it is you or them.

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https://techviral.net/downloaf-foxit-pdf-reader/
I have been using Foxit PDF Reader (free) for years. It is lightweight and can notate PDF files. My main use today is to download lists of books by authors I read and notate as to where they are stored and if read or not. If you would like to learn more about Foxit PDF Reader and get the online installer for Windows or macOS.

How To Improve Your TV's Speech And Get Rid Of Muffled Dialogue
https://www.cnet.com/tech/home-entertainment/how-to-improve-your-tvs-speech-and-get-rid-of-muffled-dialog/
As we age, it seems dialog gets increasingly muffled from TV. For me, things improved when I got a soundbar. However, I don't have a soundbar on the spare TV. Things improve after following steps in this post.

The puzzles are untimed, and you can get unlimited hints. A row or column highlighted in green shows where you can make a move (but doesn't tell you what to do). An orange box indicates an error.
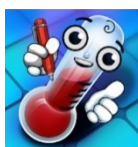
The phone version for Android or iPhones is from the same manufacturer but is slightly different. For example, it sometimes omits numbers that tell you how much mercury you need, which is an interesting twist. However, it has loud and long ads to wait through. So I use it in a pinch.

Real Einstein's Riddle

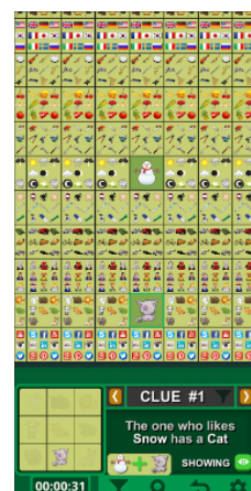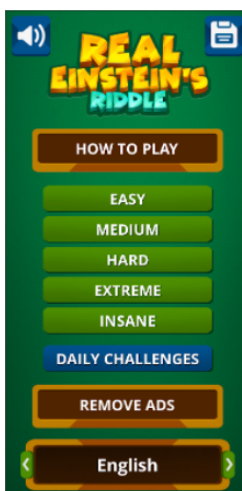**Download from the Google Play Store to a Kindle or phone.**
Learn how to play (video).
Download from the Apple Store.

This puzzle collection comes with 5000 puzzles and 15 daily challenges, all for free.

The goal is to follow clues, eliminate the impossible combinations (shown in brown), and keep the good ones (in green) by tapping icons in the grid at the lower left. Although the text clues are initially helpful (it is fun to play the game in a foreign language!), you will eventually use the background colors of the boxes as your guide.

The "How to Play" tutorial is excellent, and the video (link above) is good, although it doesn't show that you can hold down (long press) on an image to remove all other occurrences of it in that row. Start with the easy levels, and you'll soon want to try the larger grids. You can save your position and later restore the puzzle to that point if you had to guess (which does happen in larger grids), and the path you initially took didn't work out.

Click to enlarge any of these images.

Sudoku

Download to your Kindle from Amazon.
Download to your Android phone at the Google Play Store.
Download to your iPhone from the Apple Store.
I probably don't have to introduce you to Sudoku.

Around the World

Last month **Africa, Ageing, AIDS** and **Climate Change** were listed.

Atomic Energy

More than 30 countries worldwide are operating 444 nuclear reactors for electricity generation and 66 new nuclear plants are under construction. In 2014, 13 countries relied on nuclear energy to supply at least one-quarter of their total electricity.

Children

Every child has the right to health, education and protection, and every society has a stake in expanding children's opportunities in life. Yet, around the world, millions of children are denied a fair chance for no reason other than the country, gender or circumstances into which they are born.

Decolonization

The wave of decolonization, which changed the face of the planet, was born with the UN and represents the world body's first great success. As a result of decolonization many countries became independent and joined the UN.

Democracy

Democracy is a universally recognized ideal and is one of the core values and principles of the United Nations. Democracy provides an environment for the protection and effective realization of human rights.

Although you put numbers into the grid (a different number from 1 to 9 in each row, column, and section), there is no math involved, just logic.

I like this particular version of Sudoku because there are no ads, there are unlimited puzzles, and many difficulty levels. In addition, you can add multiple numbers to each cell to aid in solving the more challenging ones. You can also save a game and complete it later.

W E B
S U D
O K U

I also use this version on my Android phone.

I recently read that the man credited with creating Sukodu and introducing it to the world has died. His story is here.

I hope you enjoy some of these puzzles as much as I do!

This article was reprinted from the GVR Computer Club, https://www.ccgvaz.org/.

Enacfire A9 Active Noise Cancelling Wireless Earbuds

By George Harding, Treasurer
Tucson Computer Society

These earbuds include active noise cancellation and smart noise-detect mics that distinguish ambient noises and offset them before they reach the ear. As a result, they reduce outside noise up to 80%.

An extra feature allows users to hear external sounds when desired, without pausing music or taking the earbuds out. This safety feature lets you hear vehicle noise, sirens, etc., when you want to.

The innovative microphones can pick up cell phone call voices with crystal clear audio quality, including deep bass and extra loud sound if desired.

The earbuds are designed to stay secure even during intense exercise yet provide hours of comfortable wear. The stylish charging case provides 32-hour playtime, accompanying you for long-haul flights across the continent. They keep you from all the chaos throughout the way.

The case charges the earbuds but, itself is charged with fast USB-C technology. The Bluetooth facility is built-in, and it allows quick and easy pairing with your devices.
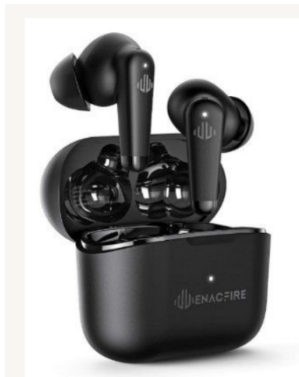
ENACFIRE A9 active noise canceling wireless earbuds:
https://enacfire.com/collections/enacfire-wireless-earbuds/products/enacfire-a9-wireless-earbuds
Priced at about $60.

Reprinted from the **https://aztcs.apcug.org/**, **actuary110@yahoo.com**.

* * Jokes Stolen from Everywhere * *

Richard Pryor

You can tell a lot about a woman by her hands. For instance, if they're placed around your throat, she's probably upset.

I'm not addicted to cocaine. I just like the way it smells.

I went to penitentiary one time, not me personally, but me and Gene went there for a movie. Arizona State Penitentiary, population 90 percent black people. But there are no black people in Arizona. They have to bus them in.

Marriage is really tough because you have to deal with feelings... and lawyers. I believe in the institution of marriage, and I intend to keep trying until I get it right.

I went to the White House, met the president. We in trouble. (on Reagan)

There was a time in my life when I thought I had everything - millions of dollars, mansions, cars, nice clothes, beautiful women, and every other materialistic thing you can imagine. Now I struggle for peace.

I'm not for integration and I'm not against it.

I'm for human lib, the liberation of all people, not just black people or female people or gay people.

I went to Zimbabwe. I know how white people feel in America now; relaxed! Cause when I heard the police car, I knew they weren't coming after me!

> **Editor's Note**: To continue reading the following articles, you may copy the long URL at the end of the article and enter it into a web browser **or** click on the URL in the PDF or web versions of this newsletter.

Stretchy computing device feels like skin—but analyzes health data with brain-mimicking artificial intelligence

University of Chicago
Pritzker School of Molecular Engineering
By Sarah C.P. Williams

It's a brainy Band-Aid, a smart watch without the watch, and a leap forward for wearable health technologies. Researchers at the University of Chicago's Pritzker School of Molecular Engineering (PME) have developed a flexible, stretchable computing chip that processes information by mimicking the human brain. The device, described in the journal *Matter*, aims to change the way health data is processed.
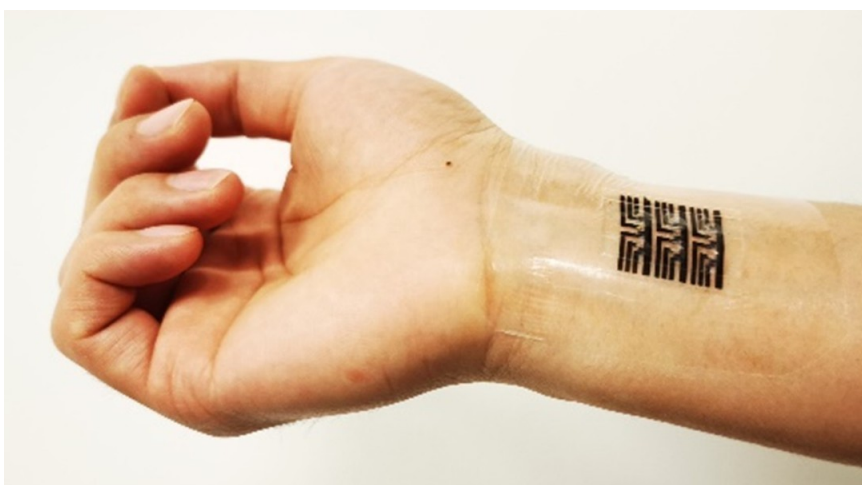
"With this work we've bridged wearable technology with artificial intelligence and machine learning to create a powerful device which can analyze health data right on our own bodies," said Sihong Wang, a materials scientist and Assistant Professor of Molecular Engineering.

Today, getting an in-depth profile about your health requires a visit to a hospital or clinic. In the future, Wang said, people's health could be tracked continuously by wearable electronics that can detect disease even before symptoms appear. Unobtrusive, wearable computing devices are one step toward making this vision a reality.

Find the rest of this article at https://pme.uchicago.edu/news/stretchy-computing-device-feels-skin-analyzes-health-data-brain-mimicking-artificial.

Odds and Ends

Robotic motion in curved space defies standard laws of physics

by [Georgia Institute of Technology](#)

When humans, animals, and machines move throughout the world, they always push against something, whether it's the ground, air, or water. Until recently, physicists believed this to be a constant, following the law of conservation momentum. Now, researchers from the Georgia Institute of Technology have proven the opposite—when bodies exist in curved spaces, it turns out that they can in fact move without pushing against something.

The findings were published in *Proceedings of the National Academy of Sciences* on July 28, 2022. In the paper, a team of researchers led by Zeb Rocklin, assistant professor in the School of Physics at Georgia Tech, created a robot confined to a spherical surface with unprecedented levels of isolation from its environment, so that these curvature-induced effects would predominate.

"We let our shape-changing object move on the simplest curved space, a sphere, to systematically study the motion in curved space," said Rocklin. "We learned that the predicted effect, which was so counter-intuitive it was dismissed by some physicists, indeed occurred: as the robot changed its shape, it inched forward around the sphere in a way that could not be attributed to environmental interactions."

The full article may be read at https://phys.org/news/2022-08-robotic-motion-space-defies-standard.html.

How hot is too hot for the human body? Our lab found heat + humidity gets dangerous faster than many people realize

By [W. Larry Kenney](#)

July 26, 2022

Heat waves are [becoming supercharged as the climate changes](#) – lasting longer, becoming more frequent and getting just plain hotter. One question a lot of people are asking is: "When will it get too hot for normal daily activity as we know it, even for young, healthy adults?"

The answer goes beyond the temperature you see on the thermometer. It's also about humidity. [Our](#) [research](#) shows the combination of the two can [get dangerous faster](#) than scientists previously believed.

Scientists and other observers have become alarmed about the increasing frequency of extreme heat paired with high humidity, measured as "wet-bulb temperature." During the heat waves that overtook South Asia in May and June 2022, Jacobabad, Pakistan, recorded a [maximum wet-bulb temperature](#) of 33.6 C (92.5 F) and [Delhi topped that](#) – close to the theorized upper limit of human adaptability to humid heat.

People often point to a [study published in 2010](#) that estimated that a wet-bulb temperature of 35 C – equal to 95 F at 100% humidity, or 115 F at 50% humidity – would be the upper limit of safety, beyond which the human body can no longer cool itself by evaporating sweat from the surface of the body to maintain a stable body core temperature.
It was not until recently that this limit was tested on humans in laboratory settings. The results of these tests show an even greater cause for concern.

The PSU H.E.A.T. Project

To answer the question of "how hot is too hot?" we brought young, healthy men and women into the [Noll Laboratory at Penn State University](#) to experience heat stress in a controlled environment.

These experiments provide insight into which combinations of temperature and humidity begin to become harmful for even the healthiest humans.

Is your curiosity peeked? Read the answer at
https://modernsciences.org/how-hot-is-too-hot-for-the-human-body-our-lab-found-heat-humidity-gets-dangerous-faster-than-many-people-realize/.

A 'nano-robot' built entirely from DNA to explore cell processes

By INSERM (Institut national de la santé et de la recherche médicale)

Constructing a tiny robot from DNA and using it to study cell processes invisible to the naked eye... You would be forgiven for thinking it is science fiction, but it is in fact the subject of serious research by scientists from Inserm, CNRS and Université de Montpellier at the Structural Biology Center in Montpellier (France). This highly innovative "nano-robot" should enable closer study of the mechanical

forces applied at microscopic levels, which are crucial for many biological and pathological processes. It is described in a new study published in *Nature Communications*.

Our cells are subject to mechanical forces exerted on a microscopic scale, triggering biological signals essential to many cell processes involved in the normal functioning of our body or in the development of diseases.

At present, our knowledge of these molecular mechanisms involved in cell mechanosensitivity is still very limited. Several technologies are already available to apply controlled forces and study these mechanisms, but they have a number of limitations. In particular, they are very costly and do not allow us to study several cell receptors at a time, which makes their use very time-consuming if we want to collect a lot of data.
In order to propose an alternative, the research team led by Inserm researcher Gaëtan Bellot at the Structural Biology Center (Inserm/CNRS/Université de Montpellier) decided to use the DNA origami method. This enables the self-assembly of 3D nanostructures in a pre-defined form using the DNA molecule as construction material. Over the last ten years, the technique has allowed major advances in the field of nanotechnology.

Reported in https://www.sciencedaily.com/releases/2022/07/220728075911.htm.

* * * * * CLUB and REGIONAL NEWS * * * * *

RCSI

The club is having it's first **'Pot Luck'** video night. Just like pot luck dinners, where everyone brings a dish to pass around, each member can bring a 5 to 10 minute video to show. You do not need to explain the video, but just show something that interests you. The video should be technology or computer related. This could be an eye opening night, since each person has different interests and backgrounds. This event will take place at our December 13th meeting.

Help's Half Hour   Notes by Jan Rothfuss

Q: A member has a couple of older 4 GB computers. Shall he load on Chromebook or Linux?
A: Both should work. One might work better, depending on the system speed. Linux Mint is recommended. Another option is Leenix as a starter program. He may bring the laptop along next month.

Q: A member has Windows 10 on a flash drive and wonders if he will need a license code when he attempts to install?
A: Microsoft is not giving as much credence to license codes lately. Windows 11 is available for those with Windows 10.

Got Questions?:
Send an email to either person below and they will get back to you. The questions can be related to the OS (Operating System) or hardware related issues. Please give them time for a response, as they do this service on a volunteer basis. Thank you.

Windows OS: . . . . . Arpad Kovacs, podcomputer@gmail.com

Linux & some Mac: Carl Schmidtmann, unixgeek@faultline.com