

Our Club

RCSI is a nonprofit 501(c)(3) group open for membership to anyone interested in computers and related technology. 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.

Program Meetings

No admission fee for non-members. Everyone is welcome! Second Tuesday of every month, except 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

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 *Monitor* is published monthly by members of RCSI. Articles by our members may be reprinted by other user groups or nonprofits, without special permission, provided they are unaltered. A courtesy copy may be emailed to our author or Monitor editor.

The Rochester Computer Society, Inc. a computer/tech club open to everyone



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October 2020

Tuesday, October 13, 'Staying Safe and Secure'
remote presentation by Bob Gosticha

November 10, TBA, plus

'Gifts and Gadgets' by Arpad Kovacs

December 8, TBA

January 12, 'How Technology Has Changed the Way We Listen to Music', remote by Ray Baxter, via Zoom

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APCUG is offering online workshops during the summer and fall

**** Because of COVID-19, all club meetings and the ****

**** Linux sig are currently being held online. ****

How to Protect Data on a Laptop - The 4 Most Important Steps

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

You REALLY need to protect your sensitive data if your laptop runs even the slightest risk of being stolen. It's critical that you protect it (and yourself) with these four appropriate security steps.



“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

Sound Bytes is the longest running computer call-in show in the known universe.

Free copies of the RCSI 'Monitor' newsletter can be found in the following computer stores: Microworx, TSC Electronics, Pod Computers, and Just Solutions. Digital copies may be obtained from www.rcsi.org or my Pcloud storage at <https://tinyurl.com/tonydelrcsi> (*this link works on PDF version only*). Also includes presentation slides and articles too large for this newsletter.

Some Past Presentations:

Cut the Cord, Streaming Services
Autonomous Cars and Robots
Open Source and Free Software
Protecting Your Identity
Keeping Mobile Devices Secure
3D Printing, ENABLE project
Flash Drives-Not Just for Storage
Features, Mac OS X & Windows
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

How can you set a strong password in a laptop so that data can't be stolen? It takes much more than a strong password. In fact, it takes at least a couple passwords, plus some settings, plus some [encryption](#) on top of it all. Given that laptops are so easily lost and/or stolen, let's walk through the steps I recommend to protect the valuable data you have stored on it.

1. Lock your UEFI/BIOS with a password to prevent unauthorized people from booting the machine or making changes.
2. Lock your hard disk with whole-disk encryption to prevent data access, even if the drive is physically removed.
3. Secure your login with a strong password to prevent the exposure of data.
4. Lock your machine with a physical lock to prevent someone from stealing it and attempting to break in at their leisure.

1. Lock your [UEFI](#)

If your computer's [UEFI](#) supports it, configure it to require a password to be able to boot. This prevents strangers from even starting your machine, much less accessing what's on it directly.

Exactly how you do it will vary depending on the make and model of your computer. Not all UEFI interfaces are the same, and not all support the same set of features. Check with your computer's manufacturer for specifics. [DO NOT forget the password.](#)

This will not only prevent someone from accessing what's on the machine, but will also prevent them from making changes to the machine. For example, with a [BIOS](#) password set, they should not be able to change the boot order and boot from anything other than the settings you've chosen.

While you're at it, turn on [Secure Boot](#), if it's not already on. This restricts the computer from booting into untrusted operating systems or installing unauthorized UEFI replacements. Caution: turning Secure Boot on or off may change how your system boots, and render the operating system inaccessible. If this happens, simply revert the change and the machine should return to normal. Consider setting Secure Boot prior to your next operating system installation if this happens.

2. Lock your [hard disk](#)

This is the single most important step on this list. By “lock your hard disk”, I mean use whole-disk encryption. This can take any of several forms:

- Windows [BitLocker](#), if your edition of Windows supports it. Make absolutely certain to [back up](#) the [encryption key](#) when offered.
- [VeraCrypt whole-disk encryption](#). As it is [passphrase](#)-based, do not lose or forget the passphrase.
- A hard disk encrypted at the hardware level. This manifests much like a UEFI password: you must specify a passphrase prior to being able to boot from the drive. Once again, do not lose the passphrase.

Special Interest Group

Linux Sig

We are back!

Linux Workshop,
**third Saturday of
each month, Noon-4PM**



NEW LOCATION:

Gates Public Library
902 Elmgrove Rd, 14624,
between Buffalo Road and
531 Expressway.
The room we use is on the second
floor, SE corner, by the restrooms.

[https://www.meetup.com/
Interlock-Rochester-Hackerspace/
events/psggnqybcbxb/](https://www.meetup.com/Interlock-Rochester-Hackerspace/events/psggnqybcbxb/)

Come and get your questions about Linux answered. We have experts on hand to fix problems and answer questions about Linux and FOSS (free and open source software). **Bring your system in** so we can help you get the most out of it. Hope to see you there.

Carl Schmidtman

Because of coronavirus,

we meet online. A link will be sent by email.

**Free, Virtual Technology
Conferences, ONLINE**
presented by APCUG

remaining 2020 Schedule
Saturday:
Nov 7
from 1 – 4 pm, EST

For Conference Descriptions
& Registration Links, go to
**[apcug2.org/category/
virtual-tech-conference](http://apcug2.org/category/virtual-tech-conference)**

Encryption is the ultimate protection for your data. Even when all else fails and a hacker or thief makes off with the hard drive from your machine, they still won't be able to access the data on it without knowing the passphrase or encryption key.

Neither will you, should you ever lose the key or forget the passphrase ... so don't.

3. Lock your login

You should have a strong password for your computer's login, particularly if you use a Microsoft account. Unlike a local machine account, your Microsoft account is also accessible — and therefore vulnerable — online.

Using additional login methods — like a PIN or facial recognition — is something I discourage for mobile computers with sensitive data. They represent additional places hackers can poke and prod. Guessing your strong password is unlikely, but a short PIN can easily be exposed in other ways. It concerns me that a good photo might squeak by facial recognition tools, so I'd avoid it as well.

Long, strong passwords remain the best protection.

While you're at it, make sure there are no additional login accounts enabled on your machine. If the normally hidden account called "administrator" is enabled, disable it (assuming your normal login account is administrator capable).

4. Lock your machine

When travelling, a friend of mine never leaves his laptop alone without physically locking it to something else in the room, like a table.

Most laptops have a slot for what's called a "Kensington Lock". It's a standard design to securely tether mobile devices in place. Even with all the precautions already taken — UEFI passwords, encrypted disks, and secured accounts — it's still important to make sure the laptop itself can't be stolen.

As I've said many times, if it's not physically secure, it's not secure.

A story from the trenches

Much of the above came to mind when a friend handed me a laptop and asked me to see if I could make it usable again. It had been part of a corporate network that they no longer had access to, so they could not sign in. They just wanted to be able to use the machine for themselves, and didn't really care about what was on it; any photos could be restored from copies on their mobile phone.

I discovered the machine's hard disk had been encrypted using BitLocker, and of course we did not have access to the corporate encryption key. The result? The data on the machine was completely inaccessible. I was able to back up the hard disk, but the encryption remains in place. I'm not sure the backup will ever be useful, other than to restore the machine to the state it was in when I got it.

On the other hand, without a UEFI password, I was easily able to change the boot order and boot from a Windows 10 setup drive. This

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. Tony Dellelo
Webmaster: Bob Avery
Membership: Jan Rothfuss

Planning Meeting

Held on 1st Tuesday of each month
at 7 pm, at St. John's Meadows,
Briarwood building. **ANY CLUB
MEMBER MAY ATTEND.**

NOTE: Because of Covid-19, we
meet online, via Zoom.

Newsletter Printing

Limited copies will be printed and
available at some of the local
computer shops. *A few copies will
be available at our meetings.*

Club Mailing Address

Rochester Computer Society, Inc
PO Box 18516
Rochester, NY 14618

allowed me to install Windows 10 from scratch and erase everything on
the drive, encrypted or not.

I hate to harp on it, but ...

Much of what I've described above relies on an encryption key,
passphrase, or strong password. Do not lose them. If you do, you will be
the one locked out, and everything on your machine may be rendered
inaccessible. That's the whole point of this type of security.

There are no back doors.

I mention this — again — because of the fairly constant stream of
questions from folks wanting to get into accounts or devices for which
they've lost their passwords, passphrases, or encryption keys.

#

LINUX SIG

You guessed it. The library is closed, so Carl sent out a link in April
to try an online meeting, using Jitsi. You might not get the total
hands on approach, but you can ask questions and share screens
during the meeting. The Linux Workshop will take place, **third
Saturday of each month**, from Noon-4PM. No, you can't bring your
machine in, but you can describe your problem and Carl and the other
Linux gurus will try and help you. This is a video conference, so dress
appropriately.

If you are not on the Linux emailing list, you can request a link to
the workshop by contacting Carl Schmidtman, at
unixgeek@faultline.com.

Thoughts from a Clicker

By Tiny Ruisch, Member
Cajun Clickers Computer Club, LA

I love going to a carnival. I don't go on many of the rides anymore,
but I love all the fun things there are to do. Unfortunately, carnivals can
be dangerous too. There are always pickpockets who will steal
everything they can. We often hear of rides that injure people. About
the only thing that is safe at a carnival is the healthy food you can buy.
The Internet is a lot like a carnival. Everyone knows about the dangers
and we all keep our antivirus programs updated. I know that all the
Cajun Clickers club members have their router firmware updated. Their
firewalls are active to keep the bad guys away. Since everyone is so safe,
I thought that this month I'd talk about some fun things to do on the
Internet. After all, many people are spending a lot more time at home
trying to avoid the Coronavirus Disease (COVID-19). It is keeping a lot
of people at home with lots of spare time on their hands. There are a lot
of fun sites. I know that everyone doesn't have the same idea of what's
fun. Maybe if I tell you about my favorite sites, you might find
something entertaining.

One of the things you can find a lot of on the Internet are free games to
play. If you're looking for games to play, a good place to start is Gizmo's
list of Best Free PC Games. This site is updated often and all the games

Tidbits of probably useless information

The Atlantic ocean is saltier than the Pacific ocean.

As The Duct Tape Guys say, "You only need two tools in life, Duct Tape® and WD-40®. If it's not stuck and it's supposed to be, Duct Tape it. If it's stuck and it's not supposed to be, WD-40® it."

Here are some other uses for WD-40:

1. Protects silver from tarnishing.
2. Removes road tar and grime from cars.
3. Cleans and lubricates guitar strings.
4. Gives floors that 'just-waxed' sheen without making them slippery.
5. Keeps the flies off of Cows, Horses, and other Farm Critters, as well.
6. Restores and cleans chalkboards.
7. Removes lipstick stains.

Soldiers do not march in step when going across bridges because they could set up a vibration which could be sufficient to knock the bridge down.

Everything weighs half of a percent less at the equator.

For every extra kilogram carried on a space flight, 530 kg of excess fuel are needed at lift-off.

The letter J does not appear anywhere on the periodic table of the elements.

Mickey Mouse is known as "Topolino" in Italy.

are free to play. My personal favorite online game is Texas Hold'em Poker. There are a lot of places to play, but you'll usually find me at World Series Poker at AOL Games. There are lots of online games on the site, but I haven't played many of the others. If you like to play hearts, I recommend you try the Microsoft Gaming Zone. The Gaming Zone has been around for a while and they have lots of games.

I've never been much of a television or movie watcher, but I love to listen to the old-time radio shows. Most evenings I'm listening to The Lone Ranger, Gunsmoke, Jack Benny, or my personal favorite, Fibber McGee & Molly. My network drive has about 21 GB of radio program files. You can get them and many more at the Old Time Radio Internet Archive.

In December 1995, Bill Watterson retired from cartooning. I lost my daily dose of one of the funniest cartoons ever. Now, thanks to the Internet, I can still read Calvin & Hobbes every day. You can find a daily comic you'll like at GOCOMICS, Comics Kingdom, or ArcaMax Publishing. None of the comics sites require registration.

"The Alphabet has been Updated with 15 Exciting New Letters" is only one of the funny satires you'll find in The Onion. This fictional, satire paper started in 1988. They've been around more than twenty years, so they must be doing something right. Their news stories seem so genuine that they have occasionally been cited as real. I've got to warn you though. There is often adult language used in the paper. Another satire site I like is the Babylon Bee. For a great description, check out their About Us page.

I'll show my age a little. I don't mind being called a "senior" because it usually includes a 10 percent discount. If you like senior citizen humor, you also might like to check out Geezer Guff.

As you might or might not know, I'm a transplanted Northerner. When I talk with my brother and sisters on Facebook, I usually translate into Southern for them. Everybody gets a few laughs. Translating into a dialect is easy when you use The Dialectizer. As I write this you can convert into nine different dialects. It hardly ever fails to make me laugh. Here is a sample:

As y'all might o' might not know, I'm a transplanted No'therner. When ah talk wif mah brother an' sisters on Facebook, ah usually translate into Southern fo' them, dawgone it. Ev'rybody gits a few laughs. Translatin' into a dialect is easy when yo' use Th' Dialeckizer. As ah write this hyar yo' kin cornvaht into nine diffrent dialects. It hardly evah fails t'make me laugh.

That's just a few of the things I like to do on the Internet for fun. I hope you enjoyed them too and found a new site you'll visit often.

Thanks for reading.

From the April 2020 issue, CCCC Computer News, www.clickers.org, tsa70785@gmail.com.

Final 'Hard Copy' Newsletter Printing

The final *hard copies* of the 'Monitor' newsletter, being distributed to some of the area computer stores, ended with the June issue. New digital copies will still be posted to the club website.

Jere's Tech Tips

By Jere Minich, Apcug Advisor,
Region 5 (AL, FL, GA, SC)

20 FAST AND QUICK MOBILE GAMES TO KILL TIME ON ANDROID AND IPHONE –

When you're sitting in a waiting room or standing in line, you don't have time to play a lengthy game. Save those for later and check out these fast, fun, and free mobile games for a quick fix. From awesome arcade challenges to perplexing puzzlers, these games will keep you entertained.

All of the games are available for free on Android and iOS, though some contain optional in-app purchases. ...

Go to this Make Use Of web site for more information.

<https://bit.ly/2V29jmv>

10 HIDDEN MODES IN WINDOWS AND HOW TO USE THEM –

Did you know that Windows has lots of extra modes that enable extra functionality, help you troubleshoot, or enhance performance for certain tasks? Some of these are hidden, while you may have heard about others but never tried them yourself. Let's take a look at some of the hidden modes in Windows, including what they offer and how to access them.

Go to this Make Use Of web site and get the information.

<https://bit.ly/3dlWj19>

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

Clean My Mac X Is Now Everywhere

Freshly Squeezed Review
Frank Petrie

Living what has currently become our new norm, many have taken to performing chores around the house that have been put off since the Eisenhower Administration (Google it, kids). Spanning the gamut from cleaning the garage, scrubbing the fridge (expiration dates from the last century I've been told are not a good thing), and even more. I know of one prominent podcaster and friend who spent this past Sunday afternoon cleaning out her toaster. You can do that?

As you're reading this blog, you most likely have started to clean up your Mac. Tossing old files, purging various Contacts on your Mac (plus Facebook), and if deranged enough, striving to reach the ever-elusive Inbox Zero.

If so, you're most likely using (nay: *should* be using) [Clean My Mac X](#) from [MacPaw](#). And now, they are proud to announce significant news. Released in 2008 by MacPaw, CleanMyMac has transformed into a powerful utility that removes clutter, optimizes system performance, and protects Macs from malware and adware. Despite being distributed independently from the Mac App Store because of the platform's business



and technical constraints, CleanMyMac got 20M+ downloads and at least one user in Antarctica. CleanMyMac's success allowed MacPaw to become one of the largest independent macOS software development companies with 10+ apps in its portfolio and a team of 240 humans and two cats. I use CMMX at the end of each working day. It's one of the few actions anchored in my daily workflow.

You can obtain CMMX from their site or as part of your Setapp subscription. But as of April 28th, after 12 years, you can purchase CMMX at the Mac App Store. So, you have exhausted your excuses to not include this indispensable app in your tool kit. The reason for the overdue entry into the MAS is a reflection of both technical constraints and how software business models are evolving:

Scam Alerts

Reported on this website

<https://www.consumer.ftc.gov>

Victims of a robocall operation are finally getting relief from the Federal Trade Commission (FTC). The agency announced on Tuesday that it will be sending thousands of checks worth a total of over \$700,000 to small business owners who were taken in by telemarketers who claimed to work for Google.

FTC officials claim that telemarketers working for Pointbreak Media, Modern Spotlight, National Business Listings, and Modern Source Media called business owners and said that their companies would be labeled as “permanently closed” unless they consulted with a “Google specialist.”

Once on the line, the “specialist” claimed that the business owners could verify and claim their Google listing by paying a one-time fee ranging between \$300 and \$700. Victims were told that paying the fee would also ensure that their company would appear prominently on Internet search results.

As you see coronavirus-related messages that falsely promise free test kits, bottles of hand sanitizer, stimulus checks in areas not authorized or fraudulent 2020 federal election info, be on the lookout for a fresh crop of scams related to [social media](#).

Facebook and its sister app, [Facebook Messenger](#), are breeding grounds for cybercrime. Facebook Messenger offers private communication unlike more public Facebook posts, so your keen friends are less likely to be able to warn you of something suspicious.

- In 2018, MacPaw released CleanMyMac X and made it available as a one-year subscription in addition to its existing perpetual-license model. The subscription model turned out to work well for CleanMyMac X's customers as it allowed them to receive new major features every few months at no additional costs. The new subscription model could also be implemented in the Mac App Store, which made it possible for MacPaw to bring CleanMyMac X to Apple's platform.

Because the MAS limits privileges of applications to protect your Mac from malicious software, this approach sometimes imposes unnecessary restrictions on safe activities, like cleaning system logs or even updating applications.

Both the MacPaw Store and Setapp versions differ slightly from the MAS one. Particularly, Apple's application review guidelines don't permit some of CMMX features, so they had to either revise or step back from them. Other than that, you still have plenty of tools to give your computer a good scrubbing.



My most recent review can be found [here](#). But CMMX is ever-evolving. Since that review, it has added several more tools.

Pricing

- App Store: CleanMyMac X is available at US\$39.95 for a one-year subscription.
- MacPaw website: CleanMyMac X is available at US\$39.95 for a one-year subscription and US\$89.95 for a one-time purchase. Prices may vary depending on the country.
- Setapp: CleanMyMac X is available on the Setapp subscription service that provides access to 170+ Mac apps for US\$9.99 per month.

Requirements: OS X 10.10 or later, Intel Macs only. A free trial is available for the MAS, Setapp, and MacPaw website versions of CleanMyMac X. If CMMX hasn't appeared on your radar, you can kick the tires with a [free download](#) of the MacPaw version (free trials of the other versions are available, as well). Give it a bash. Then buy it!

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From the website, April 2020, <https://ympnow.com/2020/04/>.

Some Interesting Websites and Internet Finds

By Steve Costello
scostello@sefcug.com

How To Use Chromecast To Cast Your Entire Desktop To TV

<https://helpdeskgeek.com/how-to/how-to-use-chromecast-to-cast-your-entire-desktop-to-tv/>

Most people know they can watch movies from their smartphone on the TV with Chromecast. This post explains how you can watch anything from your PC on the TV with Chromecast. You might just want to see what you are doing on a much larger screen, or maybe you don't have HDMI available on your PC. Whatever, check this out.

GPS: The Underused Navigation Tool

<https://www.techtricksworld.com/gps-the-underused-navigation-tool/>

I know what you are thinking: Why do I need a stand-alone GPS? I thought the same thing until reading this post. Now I carry a stand-alone GPS, as well as my smartphone on trips. At least I will when I can travel again.

Why You Shouldn't Use Your ISP's Default DNS Server

<https://www.howtogeek.com/664608/why-you-shouldnt-be-using-your-isps-default-dns-server/>

A lot of users never change from their ISP's default DNS server. I am not one of those and, once you read this post you will see why you shouldn't be one either. Also, there are suggestions and instructions for changing to other DNS servers.

Bluetooth 5.0 - Improved Wireless Technology

By Phil Sorrentino, Contributing Writer
The Computer Club, FL

Bluetooth 5.0 is a noticeable improvement over the previous version and is finally finding its way into new devices. If you have had problems with Bluetooth pairing or staying connected in the past, Bluetooth 5.0 may improve or even fix the problem. But, both devices will probably have to be up to the new standard.



Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances. Both Bluetooth and Wi-Fi are examples of wireless technology that use the unlicensed 2.4GHz frequency spectrum. Both have many applications in today's offices and homes such as: setting up networks, printing, connecting cooperating devices, and transferring data files among computers and smart devices.

Wi-Fi vs. Bluetooth.

Wi-Fi is intended as a replacement for cabling in large work areas. Bluetooth is intended as a replacement for cabling among equipment in close proximity. Wi-Fi is intended for use as a local area network (LAN). Bluetooth is intended for use in a smaller, personal area network (PAN). (Just for completeness, a Wide Area Network (WAN) is a communications network that spans large geographic areas such as cities, states, or even countries – think Internet.)

Bluetooth, nowadays, can typically be found in smartphones, laptop computers, tablets, headphones, and almost all new cars. Seven years ago I explored Bluetooth and reassured everyone that it was not a dental diagnosis. At that time, it was at version 4.0 so it's probably time to take another look. Technology is always evolving and hopefully improving.

Here is a little history for you tech history buffs. Bluetooth has been around for quite a while. Work on Bluetooth was started in 1994 and the Bluetooth 1.0 specification was released in May 1998. The initial Version specified a data rate of fewer than 1 Mbps (Megabits per second). It had many problems, and manufacturers had difficulty making their products interoperable. Bluetooth 2.0 was released in November 2004 with a faster data rate (approx. 2 Mbps). Bluetooth 3.0 was released in April 2009. Bluetooth 4.0 was released in June 2010. Bluetooth 5.0 was released in June 2016 with increased range, speed and capacity, and is the current standard. Bluetooth 5.0 is improved in many categories as shown below:

Feature	Bluetooth 5.0	Bluetooth 4.0
Speed	2 Mbps	1 Mbps
Range	40 Meters	10 Meters
Message Capacity	Larger	Small
Battery Life	Longer	Shorter

Penguin Platform

By “Free John” Kennedy, Apcug
Advisor, Regions 3 and 6/7

TIMEKPR-NEXT IS A LINUX PARENTAL CONTROL PROGRAM FOR LIMITING COMPUTER USAGE –

Timekpr-nExT is graphical parental control tool for Linux, useful if you want to limit child activity on a computer. The application, which uses Python / GTK3, works with multiple desktop environments, including GNOME, Xfce, Cinnamon, KDE Plasma, Unity, Deepin and Budgie, under both X11 and Wayland. The application can limit computer usage for some user accounts by setting predefined access rules. Find out how to set this up with this article from Linux Uprising:

<http://bit.ly/2DuzPvy>

DESKTOP LINUX 101: HOW TO EASILY BACK UP AND RESTORE YOUR IMPORTANT

DATA – You don’t have to be an avid distro hopper to appreciate the need for a simple and reliable “set it and forget it” backup solution. Desktop Linux provides an array of options on this front, but I’ve found a little utility called Deja Dup to be the easiest by far. So here’s a step-by-step text and video guide, found in Forbes, detailing how to easily back up and restore your important data and documents.

<http://bit.ly/2L8QGIE>

Reliability	Higher	Low
Security Control	Better	Less secure

Bluetooth was originally conceived as a wireless alternative to the old serial RS-232 data cables. Bluetooth is a network and thus can connect many devices, unlike RS-232 which was strictly serial point-to-point. Bluetooth is a wireless technology that uses short-range radio links and is intended to replace the cable(s) connecting portable and/or fixed electronic devices. The hope is that it will allow for the replacement of the many proprietary cables with one universal radio link. Bluetooth can provide a way to connect and exchange information between devices such as Smartphones, laptops, personal computers, printers, Global Positioning System (GPS) receivers, digital cameras, video games, et al.

So, Bluetooth is a communications standard for interconnecting electronic devices. To that end, it uses a form of data packet switching to transmit digital data via the wireless communications link. Bluetooth operates in the unlicensed ISM (Industrial, Scientific, and Medical) 2.4GHz frequency band, and avoids interference from other signals in that band by hopping to a new frequency after transmitting or receiving each packet. This radio technology is called frequency-hopping spread spectrum. It chops up the data being sent and transmits chunks of it on up to 79 different frequencies. (Guess who invented frequency hopping? Answer at the end of the article.)

Bluetooth is primarily designed for short-range communications with low power consumption. There are three power levels defined in the standard, 100 mW (Class 1), 2.5 mW (Class 2), and 1 mW (Class 3) where mW (milliwatt) is a measure of transmitter output power. The higher the power level, the further the data can possibly be transmitted. Class 1 suggests an operating range of up to 100 meters, Class 2 suggests 10 meters, and Class 3 suggests 1 meter. Most of the devices I’ve used have been Class 2.

Because Bluetooth devices use radio (broadcast) communications, they do not have to be in the line of sight of each other. Bluetooth makes it possible for these devices to communicate with each other and transfer the information as long as they are in range.

A PC uses a Bluetooth adapter to communicate with other Bluetooth devices. While some desktop computers and most recent laptops come with a built-in Bluetooth adapter, others require an external adapter, usually in the form of a Bluetooth Dongle. Bluetooth allows multiple devices to communicate with a computer over a single adapter. Microsoft Windows 10 supports Bluetooth 5.0, but your computer may have a Bluetooth device that was built to an earlier Bluetooth version. (Along with the Bluetooth version, there are Bluetooth Profiles, but we’ll leave that as a subject for a future article.)

Though you may not have thought about it, here are some of the more common applications of Bluetooth:

- Wireless control of, and communications between, a mobile phone and a hands-free headset. This was one of the earliest applications.
- Wireless communications with PC input and output devices, the most common being the mouse and keyboard.

*** * Computer Jokes * *** **Stolen from Everywhere**

When Kids Speak !

A little girl was talking to her teacher about whales.

The teacher said it was physically impossible for a whale to swallow a human because even though it was a very large mammal, its throat was very small.

The little girl stated that Jonah was swallowed by a whale.

Irritated, the teacher reiterated that a whale could not swallow a human; it was physically impossible.

The little girl said, "When I get to heaven I will ask Jonah."

The teacher asked, "What if Jonah went to hell?"

The little girl replied, "Then you ask him."

##

A Kindergarten teacher was observing her classroom of children while they were drawing. She would occasionally walk around to see each child's work.

As she got to one little girl who was working diligently, she asked what the drawing was.

The girl replied, 'I'm drawing God.'

The teacher paused and said, 'But no one knows what God looks like.'

Without missing a beat, or looking up from her drawing, the girl replied, 'They will in a minute.'

##

- Replacement of traditional wired serial communications used in test equipment, GPS receivers, medical equipment, Bar code scanners, and traffic control devices.
- A link between game consoles such as the Nintendo Wii, and the Sony PlayStation and their respective controllers.
- A link between a video camera and a remote Baby or Pet Monitor.
- A link between a Garage Door Opener Motor and the Remote Garage Door Opener Controller.
- An audio link between a Smartphone and speaker or headphones.

As you can see from this list, there are many reasons for computing devices to communicate with each other. And as more devices become smart, there will probably be more uses for the Bluetooth wireless technology.

(Hedy Lamarr)

Reprinted from the March 2020,

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***** BITS and PIECES in the NEWS *****

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 web version of this newsletter.

Energy firm says its nuclear-waste fueled diamond batteries could last thousands of years

by Peter Grad , Tech Xplore, August 28, 2020

A cellphone power source that lasts nine years. An auto-battery pack that lasts nearly a century. A pacemaker that is powered to last 28,000 years.

These surreal claims are being made by a California-based battery company that says successful early test results recently competed on a nano-diamond battery brings them closer to realizing such claims.

The key to their revolutionary batteries is [radioactive nuclear waste](#). There are massive quantities of leftover nuclear waste from nuclear plant facilities. Such waste is extremely toxic, lasts thousands of years and poses a challenge when it comes to disposing of it (burying and encasing it) safely.

The company, NDB, says it can safely utilize this waste to generate power in its nano diamond batteries. It can achieve this by processing graphite nuclear waste into a pure form and then converting it into diamonds. As the [waste product](#) enveloped by the diamond decays, it interacts with the carbon to generate a small electric current.



Odds and Ends

History of Computers: A Brief Timeline

By [Kim Ann Zimmermann - Live Science Contributor](#)

1970: The newly formed Intel unveils the Intel 1103, the first Dynamic Access Memory (DRAM) chip.

1971: Alan Shugart leads a team of IBM engineers who invent the "floppy disk," allowing data to be shared among computers.

1973: Robert Metcalfe, a member of the research staff for Xerox, develops Ethernet for connecting multiple computers and other hardware.

1974-1977: A number of personal computers hit the market, including Scelbi & Mark-8 Altair, IBM 5100, Radio Shack's TRS-80 — affectionately known as the "Trash 80" — and the Commodore PET.

1975: The January issue of Popular Electronics magazine features the Altair 8080, described as the 'world's first minicomputer kit' to rival commercial models. Two 'computer geeks', Paul Allen and Bill Gates, offer to write software for the Altair, using the new BASIC language. On April 4, after the success of this first endeavor, the two childhood friends form their own software company, Microsoft.

1976: [Steve Jobs](#) and Steve Wozniak start Apple Computers on April Fool's Day and roll out the Apple I, the first computer with a single-circuit board, according to [Stanford University](#).

Depending on the power drain, the battery, which never needs recharging, would last for a user's lifetime, and beyond. It could be used for common mobile devices, [medical products](#), satellites and could provide energy in hard-to-reach locations or [remote areas](#) where routine maintenance would be difficult.

Continue reading at <https://techxplore.com/news/2020-08-energy-firm-nuclear-waste-fueled-diamond.html>.

The Beginning of the End of the Plastic Era Is Here

By [Brian Kahn](#)

While the trend for investing in oil and gas industry has been downward for years, the pandemic has established it as a [pretty garbage investment](#). The industry has set its [hopes on plastic](#) to turn the tide, but new research shows that's a losing bet, too.

A [report](#) released on Thursday by Carbon Tracker, a group that looks at the economic transition to a low-carbon economy, lays out the business case for stopping the petrochemical industry and investors from plunging \$400 billion into expansion. It's a handy compliment to the whole "covering the planet in single-use plastic is smothering out life on Earth" out argument.

Now look, the latter is certainly good enough for me, a former park ranger who sees the inherent value of a healthy biosphere and is frankly tired of reading stories of sea creatures stuffed to the gills with plastic. Seriously, save me from having to produce more of this content! If you are motivated by other things (such as, say, money), though, the report also shows the future for plastic is not bright. The report notes that peak plastic could hit by 2027 even as the industry ramps up production.

Governments have finally started getting serious about the damage plastic is doing on land and at sea. Over the past few years, a slate of bans on single-use plastic and plastic bags have swept around the world. But efforts have gone into overdrive after China (the place where everyone sent their recycling) stopped taking plastic imports in 2017, leaving the world to cope with an [estimated 111 million tons](#) of excess plastic to sort through this decade alone.

Continue reading at <https://earthier.gizmodo.com/the-beginning-of-the-end-of-the-plastic-era-is-here-1844948163>.

Schools are buying up surveillance technology to fight COVID-19

by [The Markup](#) — in [Syndication](#)

Fayette County Public Schools, [a 24-school district in Georgia](#), reopened its classroom doors last month. As at many schools around the country, officials in Fayette have concerns about safely bringing students back to school amid a pandemic — and they're turning to surveillance technology for help.

The school district recently [made a deal](#) to purchase up to 75 cameras equipped with thermal imaging. The cameras, made by Hikvision, a

Chinese provider of facial recognition tools and other surveillance equipment, cost \$7,000 each and rapidly estimate temperatures to monitor potential viral spread on school grounds. The ability to quickly scan for a sign of the virus is an attractive option for schools, one that's potentially faster and safer than manually taking each visitor's temperature.

"The Hikvision cameras will only be used to measure an individual's temperature to help eliminate the spread of COVID-19 and other viruses that may cause fever," Melinda Berry-Dreisbach, a spokesperson for the district said in an email to The Markup.

The measure, she said, was a practical way to test for elevated temperature when students and staff enter a school. Berry-Dreisbach said the cameras will not be used for facial recognition or other automated identification purposes, and temperature readings will be stored on the school's local network and eventually deleted.

This article was [originally published on The Markup](#) and was republished under the [Creative Commons Attribution-NonCommercial-NoDerivatives](#) license. You can finish reading at <https://thenextweb.com/syndication/2020/09/12/schools-are-buying-up-surveillance-technology-to-fight-covid-19/>.

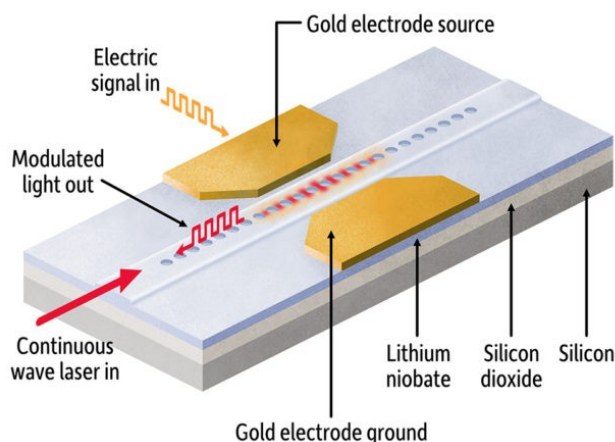
***** CLUB and REGIONAL NEWS *****

Photonics researchers report breakthrough in miniaturizing light-based chips

August 26, 2020

Rochester team demonstrates new way to control light as it moves through integrated circuits, paving a research avenue in communications, computing, and photonics research.

Photonic integrated circuits that use light instead of electricity for computing and signal processing promise greater speed, increased bandwidth, and greater energy efficiency than traditional circuits using electricity. But they're not yet small enough to compete in computing and other applications where electric circuits continue to reign.



A schematic drawing shows an electro-optical modulator developed in the lab of Qiang Lin, professor of electrical and computer engineering. The smallest such component yet developed, it takes advantage of lithium niobate, a "workhorse" material used by researchers to create advanced photonics integrated circuits. (University of Rochester illustration / Michael Osadciw)

Electrical engineers at the [University of Rochester](#) believe they've taken a major step in addressing the problem. Using a material widely adopted by photonics researchers, the Rochester team has created the smallest electro-optical modulator yet. The modulator is a key component of a photonics-based chip, controlling how light

moves through its circuits.

In [Nature Communications](#), the lab of [Qiang Lin](#), professor of electrical and computer engineering, describes using a thin film of lithium niobate (LN) bonded on a silicon dioxide layer to create not only the smallest LN modulator yet, but also one that operates at high speed and is energy efficient.

This "paves a crucial foundation for realizing large-scale LN photonic integrated circuits that are of immense importance for broad applications in data communication, microwave photonics, and quantum photonics," writes lead author Mingxiao Li, a graduate student in Lin's lab.

View the rest at www.rochester.edu/newscenter/photonics-researchers-report-breakthrough-in-miniaturizing-light-based-chips-449382/.

RCSI

No, we haven't closed. Our usual meeting place has closed to outsiders, but **we are practicing 'social distancing' online**. We have used Zoom for several of our planning meetings. These meetings are held the first Tuesday of each month, at 7:00 pm and are open to any member. A link will be emailed to members, before our next planning meeting. ANY CLUB MEMBER MAY ATTEND and voice their opinions about club operations.

We have already completed several general online meetings, with a few hiccups while showing videos. The next online presentation will have been presented before this newsletter is sent out. So, we are working out the bugs.

Help's Half Hour

Q: A member had been able to use Outlook email in the Firefox to search the mailbox for a given phrase, email address, etc. Usually the request will act as a filter and the display will include only those emails that match. This feature no longer works. Any ideas?

A: Jerry suggested using the following link to try to fix the issue:

<https://www.makeuseof.com/tag/outlook-search-not-working/>

APCUG

APCUG is pleased to announce that we will be having online workshops during the summer and fall.

Getting to Know Windows from An Insider's Point of View, finished on August 12.



We will use the same Zoom password encrypted meeting URL for each workshop. You will receive the URL after you have registered by [completing this form](#).

Judy will be the contact point for these workshops and will be available to assist you in connecting to the Zoom sessions. The registration list will be used to identify everyone in the Waiting Room before being admitted to the session.

The next series of workshops will be on Home Automation for Seniors:

The second Wednesday of the month at: 9 am PT, 10 am MT, 11 am CT, 12 pm ET

October 14, 2020 November 11, 2020 December 9, 2020

Week 2 - Where do I start? **Week 3** - Lights, doorbells, locks, and cameras

Week 4 - Doing It Myself vs Having It Done

We will begin by explaining why home automation is important to seniors. What products are on the market, costs, security, and some real-world testimonials. In the second week, we will talk about how to go about planning your home automation project and best practices. In the third week, we will talk about applications using lights, doorbells, locks, and cameras. Lastly, we will talk about the benefits of making it a DIY project or having a professional install.

E-Waste recycle event:

Henrietta, Rush-Henrietta Central School District, October 3, Saturday from 8:30 – 12:00 pm.

Limit of four CRT (tube) monitors or televisions per vehicle.

Due to COVID-19: Preregistration is **REQUIRED**: [CLICK HERE](#)

For additional details, go to www.sunnking.com/events.

Our Usual Meeting Place

St John's Meadows at

Johnsarbor Drive, is on the left, past Clinton Avenue, when going West on Elmwood Avenue. The opening in the white fence is Johnsarbor Drive. At the 'T', turn right. The meeting is in the first building on the left – **Briarwood**.

Our meeting place can change. Please check our website before each meeting. **www.rcsi.org**