

THE NEWSLETTER OF THE KINGS COUNTY RADIO CLUB

KCRC



March 2020

“NULLUM BENEFICIUM IMPUNITUM”

Volume 7, Issue 3A

Minutes of the March 4th 2020 KCRC Meeting

Our March “Pre-Meeting Question and Answer Session” was a subdued affair.

The monthly meeting was called to order at 8 PM, by our President, Joseph AC2AE. Also present at tonight’s meeting were Vice President Mitch N2RGA, , Treasurer Frank KD2QPU, General Secretary Roy AC2GS, Howard N2GOT, Richard KA2KDQ, Glenn N4ESU, Ralph KD4RN, Robert W2ZF, William AC2ZV, Jacobo KK6RKA, and a news guest Vito KA2QOX

The vote to accept the minutes of the March meeting was passed unanimously.

Treasurer Report—Frank KD2QPU reported that our Treasury currently has \$1737.94 in our bank account as well as \$10.38 in our PayPal account for a total of \$1,748.32 in assets.

Repeater status was discussed by Joseph AC2AE and Mitch N2RGA - The voice announcements still need to be optimized for the controller’s speech synthesis circuits—this is planned for the next routine maintenance visit to the repeater site. Work progresses on expanding our repeater link options while also streamlining necessary hardware and costs. Joseph AC2AE has acquired a static IP address, at his residence, which will be used as part of our repeater’s Internet gateway servers. He will continue to work with Ryan W4EAE to streamline the numerous gateway connections to our repeater to as few as possible. There will be more to follow in future reports.

2 Meter Net Report—Joseph AC2AE reported consistent activity on the Net.

10 Meter Report—Roy AC2GS reported that general 10M propagation conditions continue to be poor during our present sunspot minimum period, but that local activity is steady and the Net often goes over 2 hours most Sundays.

KCRC TechNet—Roy AC2GS reported that participation in the Technical Net remains a problem. We still need people to join in with either questions, topics, or their own observations. As mentioned previously this isn’t a podcast, or a radio show—it is a technical Net, and requires participation in order to thrive.

Fusion Net Report—Joseph AC2AE informed us that the Fusion Net is receiving a lot of national and international attention, and he has allowed for early check-ins before the regularly scheduled Net.!

Old Business: On our previous VE Session we had four examinees. Three examinees earned their Technician Licenses. Our next VE exam will be Sunday, March 15th, at 1 PM at Room 6B of The Wesley House 501 Sixth Street, between 7th and 8th Avenue [Ed.—Unfortunately this was cancelled on the day that it was scheduled, due

to COVID-19 restrictions in Methodist Hospital buildings—VE Sessions are on holding, pending resolution of this crisis].

Our Club presently has 91 members, our new members for January are Glenn N4ESU and Tom N2UFM. 62 members have paid their 2020 dues (a 68% compliance rate).

We are still selling Club patches at \$5 a piece and \$1 shipping and handling. You can save the shipping and handling fee by buying them at our monthly meetings. The members present at the meeting voted unanimously to re-order 100 more Club patches. Roy AC2GS will contact our manufacturer and order an additional 100 patches for \$205.

The club purchased of 500+ custom pencils to advertise our Club. The supply was divided between Joe AC2AE, Frank KD2QPU, and Roy AC2GS for distribution to Club promotions, club members and VE examinees. Frank will begin mailings to Club members to distribute some of the pencils purchased. All members present were offered some Club pencils as well.

Field Day 2020 was discussed, as well as the suggestion to schedule practical tech sessions at the Field Day event, where issues like risk issues of soldering in Hospital areas would be moot. Options regarding enclosures, radios, and antennas were discussed.

New Business: Roy AC2GS suggested that the Club quickly develop contingency plans should our meeting place in Methodist Hospital become 'problematic' [Due to social distancing required during the COVID-19 Pandemic, the Club will attempt to have its meeting via tele-presence, using Webex software, Club members have been notified how to set the software up for Club meetings—Ed.]

At 9:34 PM the meeting was concluded.

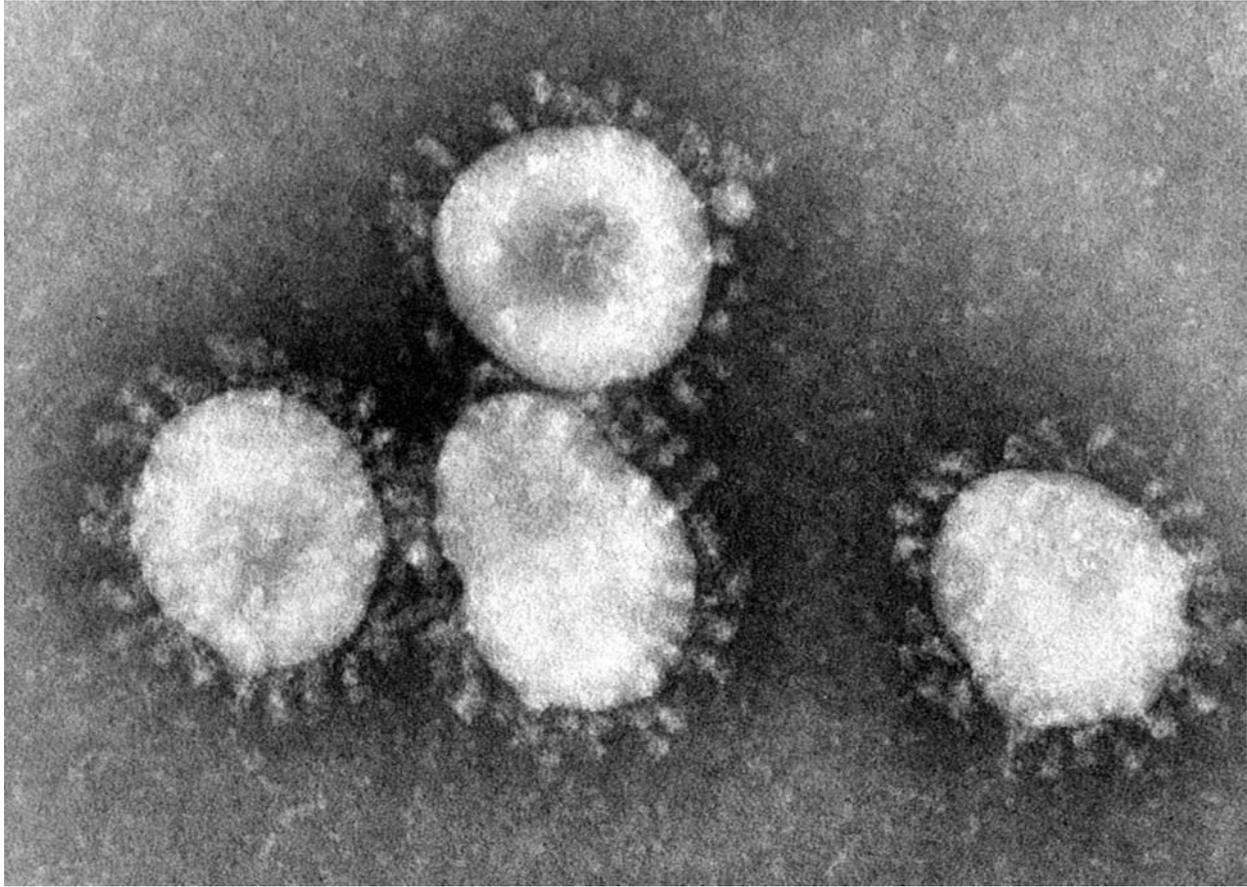
[Stay Safe!](#)

Disclaimer: The views and opinions expressed in this publication are those of the author and do not necessarily reflect the official policies or positions of the Kings County Radio Club, its Executive Board, nor its General Membership.

These minutes were respectfully recorded and submitted by Roy AC2GS on this day, March 4th, in the two thousandth and twentieth year of our Lord of Propagation...

The Kings County Radio Club is at www.KC2RC.com or
www.KingsCountyRadioClub.com
KCRC is an ARRL affiliated club (see: www.ARRL.org)

But What the Hell Is A Virus, Anyway?



An image of an electron microscope detection of the Coronavirus - each viral particle is approximately 120 nanometers in diameter (a single human hair's width is about 60,000 nanometers)

Oh no! Not another scary story about the Wuhan Coronavirus/COVID-19/SARS-CoV-2?

No doubt, you have read a lot about this new Pandemic and all the scary '*worse case scenarios*,' and you are probably nursing a nascent gastric ulcer over all the fear channeled through the media...

I am sorry for the alarm, but whether we take this Pandemic seriously enough will affect our outcome significantly (and we will still require a double helping of good old dumb good luck).

For those not working on vaccines and anti-virals, the thing that each and everyone **can** do is common sense stuff. Follow the recommendations regarding social distancing, reasonably good hygiene (20-second hand washing, coughing into your elbow, no communal grabbing of food that others will be eating from).

Don't panic, but also don't lapse into some resigned apathy.

Be safe!

I won't burden you with statistics, or my predictions - that would be as useful as me guessing the time of day that you are reading this article (assuming that you are still reading this article).

No, the purpose of this particular article is to offer some information about viruses (viri to you Latin scholars) and try to put them in a historical and biological context.

Viruses are opportunistic little buggers. They don't quite qualify as 'living,' at least on their own. The processes

used to define life are:

Living creatures...

- ... can control their internal environment (**Homeostasis**)
- ... are composed of one or more cells (**Organization**).
- ... can transform high energy chemical bonds into other lower energy bonds and use that energy to power its needs (**Metabolism**)
- ... can grow larger and/or more abundant (**Growth**)
- ... can adapt over time in response to their environment (**Adaptation**)
- ...can respond to stimuli (**Stimuli**)
- ...can reproduce (**Reproduction**)

Viruses don't really meet these guidelines, at least not before they invade a living cell and commandeer all of the cell's own devices for the virus' ends.

Viruses are, at best, bits and pieces of a living thing - incomplete by themselves. They contain only the bare minimum to survive and infect cells. They contain a strand of either DNA or RNA, to provide the blueprints for the assembly of their progeny from an infected cell's resources. That genetic material provides the sequence of amino acids for parts of the virus particles that the cell will produce for the infecting virus. Viruses also include copies of their viral enzymes. Like viral polymerase, to get the process started, and contain a protective coating to survive their trip from the infected cell that bore them to their ultimate cell victim that will act as a factory to produce the next generation.

There are even smaller fragments of life, called a Viroid that are just strands of infectious DNA/RNA without even any viral covering...

Viruses are the ultimate parasite - they offer their hosts no benefit but cell death. They attach themselves to their victim's cell membrane and either inject their content into the cell's inner cytoplasm or cause the cell to engulf the virus and bring it into the victimized cell. The virus' proteins allow the viral DNA/RNA to both reproduce many more copies of itself, but also transcribe those genetic blueprints into the proteins that do all the work, providing the protein enzymes, and viral cell wall components. Unfortunately, the newly produced viral particles can't get out of the cell the same way that they entered - they basically have to 'blow it up from the inside.' They trigger 'lysis' of the cell membrane, like popping a balloon and the newly formed viral particles float among the liquefied dead cell, in search of new cells for the same fate.

That is the way that all viruses go through their life cycles. They do it at the expense of the lives of individual cells that provide the means for the viruses' reproduction. If the virus is **too** effective, it could mean the death of the multicellular organism that has been providing the virus with its supply of living cells to replicate inside.

Viruses are obviously not '*conscious*,' not sentient - not self-aware. Just like most things in our Universe, they are just following the Second Law of Thermodynamics - that the entropy of a closed system always increases. They have just happened upon a method to make more of themselves rather than make less of themselves in the process, and through untold generations of random mutations have improved their efficiency in their given environments. They are just mindless biological nanite machines designed to make more mindless nanite machines.

And they do this very well.

Viruses probably came into being a short time after viable living cells did - life always finds a way, even '*sort of life*.' There is a multitude of different viruses - different shapes, different sizes, tailor-made for certain living cells. Some are not only 'optimized' for human cells, but specific types of human cells. The viruses that give us upper respiratory tract infections have a preference for those kinds of cells lining our upper respiratory tract. However, if they are very successful, they can use that toehold for more adventurous cell invasions elsewhere in a human body.

If you can call a virus '*successful*,' it is one that infects almost every organism, reproduces but doesn't '*kill*' its own food supply. Ebola is far less '*successful*' than, say, the common Herpes Virus, or the common cold.

Herpes virus is quite fascinating. It can infect nerve cells and imbed themselves in the cells of a sensory ganglion in an inert form for years. Then it can wait for your immune system to grow faulty with something like the common cold. When it '*sees*' its chance, it then replicates down that nerve sheath and invades the mucous membranes, producing visible sores - '*cold sores*.'

Some viruses can even embed their own genetic instructions into the DNA of a cell's nucleus - hiding in plain sight, should it find conditions to become active and shed more viral prodigy.

Some viruses, sitting relatively quietly in cells can cause them to mutate into cancerous cells - like the Human Papilloma Virus (HPV) that can cause cervical cancer!

Viruses are '*clever*' in their own way, but so are our own cells, and especially when 86 billion human neurons get together and form a human brain.

Other than supportive measures that help the infected fight the virus off with the strongest immune response that they can muster, medical science has too big guns to deal with viruses:

Vaccines - Named after the very first virus that was first used to tame a more deadly one - we used 'Cow Pox' otherwise known as 'Vaccinia' to prime our immune system against its much more deadly 'cousin' the Smallpox virus.

At first, closely related live viruses were used to cause much milder infections that would supercharge people's immune system to be '*on guard*' and ready to fight the more deadly variations in that viral '*family*.'

As time went on, we developed the ability to take actual infectious viruses and render them less virulent - those are the attenuated vaccines - eliciting an immune response and giving those vaccinated an immunity to infection from the native more virulent form.

'*Attenuated vaccines*' are used for measles vaccine, mumps vaccine, rubella vaccine. Other examples of attenuated vaccines are attenuated influenza vaccine (the seasonal flu nasal spray and the 2009 H1N1 flu nasal spray), chickenpox vaccine, smallpox vaccine, oral polio vaccine (Sabin), rotavirus vaccine, and yellow fever vaccine.

Then there are '*Inactivated Vaccines*' where the viruses are cultured in a controlled environment and then killed, leaving their proteins available for our immune system to learn to recognize and destroy future live infections. Examples of inactivated vaccines are the Salk polio vaccine and our present injectible influenza vaccines.

Ever since Alexander Fleming discovered penicillin back in 1928, we have had antibiotics - chemicals that disrupted bacterial cells and fought bacterial infections. Antibiotics are useless against viruses - viruses just don't possess the weak spots that we found in bacteria - although people keep swallowing antibiotics for the common cold - one of the reasons we are having problems with bacteria resistant to many antibiotics...

But that's a topic for another article and another time.

Anti-virals have been available for a much shorter time than antibiotics, but the history and the science involved in them are just as complex as the stories of antibiotics themselves.

There are virus-specific anti-virals and more broad-spectrum anti-virals, but there is presently no *one solution that fits all infections*. You have to pick and choose your anti-virals to suit the viral infection that you are treating. Many viruses do not yet have anti-virals that are effective for their infections.

If you are interested in all the clever viral weak spots utilized to make anti-virals make viral reproduction difficult, just 'Google' anti-virals and read a few articles, it is all very fascinating.

Medical science is working very hard in many places on possible vaccinations and anti-virals. The U.S. Government has deemed this so much of an emergency that they are shattering old safety protocols and going directly from vaccine production to human testing without the usual animal trials to prove that the 'cure isn't worse than the disease.' This can be a hazardous plan, hopefully, one that none of us will regret in the coming months.

Stay safe!

Vy 73,

Roy AC2GS

(If you are interested in science and technology (and why would you still be reading this if you aren't), stop by the LIMARC TechNet every Sunday night at 8 PM, and bring questions, or answers, or email your questions to mail-bag@AC2GS.com! Or check out my other Technical Net on KC2RC 146.730, at 9 PM on the second and fourth Wednesdays of every month.)