

LIGHTNING DATA CENTER MINUTES

March 11, 2022
ST. ANTHONY HOSPITAL
www.lightningdatacenter.org

Monthly Quote: “It just all of a sudden, we had this just tremendous noise and crackle. We felt it in our house, just the electricity you could just feel it go through you,” described Johnson. “It’s intense, I’ve never felt something like that before.” Deborah Johnson, commenting on the sensation felt from inside her house after lightning hit a house across the street.

Source: *WKRN-TV*, February 22, 2022.

Members present: Clark, Swanson, Terry, Crow, Wachtel and Yarnell. Meeting began at 11:45 AM and ended at 12:50 PM.

- 1. VERY IMPORTANT – PLEASE READ! Starting in April 2022, LDC will resume meeting in person at St. Anthony Hospital. For the April meeting, there will not be a Zoom connection, since the hospital has upgraded their technology in the conference rooms and I need to figure out the “nuts and bolts” to make Zoom capability work for us. Barring any new COVID variants, this will be the last COVID announcement in these minutes.**
2. The LDC is accepting donations, either as cash or check. If you donate via check, please make your check payable to Steve Clark at 755 S. Clinton Street, #2A; Denver, CO 80247. He will cash the check and keep the cash holdings specifically for the LDC. When the LDC incurs expenses, Steve will pay for services rendered through his bank account using the cash from LDC’s cash holdings. A log will be maintained detailing the inflow and outflow of monies. At the present, the LDC has \$1082.00 in cash.
3. An interesting article came to Steve Clark’s attention. Most of the time, lightning injury can be determined by marks on the skin or other soft tissue. What happens if the body is badly decomposed with nothing but bones? Does lightning leave a mark on bones? Researchers say yes. Bones from pig and human cadavers were subjected to high impulse currents to simulate lightning. They found tiny microfractures in the bones that were distinctly different from purely thermal changes. They found the pattern of trauma to be identical between human and animal bone, even though the microscopic bone structure is different in humans versus animals.
4. Dr. Phil Yarnell presented a review article on Electroconvulsive Therapy (ECT). It provides a historical review of ECT. ECT is used for mood and other psychotic disorders. There are two phases of care: initial and maintenance. The initial phase continues until the patient has reached the maximal treatment response or until side effects limit treatment. The maintenance phase continues treatment with the idea of increasing the amount of time that passes between ECT sessions, for example, from weekly to monthly. The goal is to reach the fewest ECT treatment sessions that will maintain remission.

5. Phil discussed Bovie devices. When they are used for skin incisions, there is no need for a ground. He described a patient who had received a diffuse electrical injury while a Bovie was used. The Bovie was connected to the right hand where the patient got shocked and the current went into the left arm and foot. The patient has recurring problems - bilateral nerve compression, eye cataracts, chest pain, PTSD, musculoskeletal pain and difficulty with sleep.
6. Phil briefly touched on unipolar versus bipolar probes. Unipolar is a misnomer. A probe is placed on the body near the site of interest and the current loop is completed using a grounding mat connected elsewhere on the patient's body, usually the buttocks. Bipolar probes have two electrodes which sit side-by-side with a very short path between them. Since the path is so short, there is no impact on the body's other electrical rhythms.
7. Phil also mentioned TMES (TransMagnetic Electrical Stimulation). It uses a changing magnetic field via a coil placed close to the head to induce a current in a specific part of the brain. It is used for the treatment of depression.
8. Phil mentioned a book titled *Lost in America* by Sherwin Nuland. Nuland is a surgeon and the book is about a Jewish family's immigration to the United States and the difficult relationship Sherwin had with his father at a young age. As an adult, Sherwin went into a state of depression and needed shock therapy. Later in life, Sherwin would come to have a much greater appreciation of his dad and gain insight into his life.
9. Carl Swanson presented a news story from Columbia, Tennessee where a couple reported sensing the electricity from lightning which struck a house across the street. The Monthly Quote above describes their recall of what they sensed. The husband went outside to see if their house had been hit but it was not. Shortly thereafter, they realized the neighbor's house across the street had been hit. About 20 minutes later, the fire department arrived to make sure the home was safe. The strike left a long black mark on the wall near the circuit breaker. The image below is a screenshot from the WKRN newscast showing the mark.



10. An e-mail came from Tim Olsen, one of our members in response to the January 2022 minutes. He responded to two items.

In the first, Phil had asked if a battery-operated radio that is not connected to an AC outlet is dropped into a bathtub and someone was in that tub, would that person be harmed? Tim said: “The battery seeks to discharge between its terminals, not to ground, and via shortest path, and with a burst of energy if it’s a good short. It sounds survivable, but I still wouldn’t try it. Maybe throw a battery into a pail of water... “.

In the second, Carl had asked if plastic piping was as good as a ground. Several residents near where he lives in Tennessee have mobile homes with plastic piping going into the ground. In response, Tim said: “The water itself is a good path to ground. But a section of metal may be needed to ensure the grounding connection to the water. And the ground may be lost with a water shutoff. Reading on this topic relative to NEC, it appears the purpose of grounding the water pipe is not so much to utilize its path to ground, but to tie the pipe into the building grounding system (2 rods) to keep the pipe safe to touch. So even if the underground water line is non-metallic, metal pipe in the house still needs protected.”

11. LDC welcomes your medical questions. Please send them via e-mail to Steve Clark at sclarktoto@gmail.com. Your medical questions will be forwarded to Dr. Phil Yarnell for his review and will usually be taken up for discussion in the next month’s meeting. Please be advised any questions posed are for the general consideration by the group and do not constitute a formal medical opinion. If a formal evaluation is requested, arrangements can be made directly with Dr. Yarnell. If you have a medical emergency, please call 911 or your local EMS.
12. Questions, comments, error notifications, and critiques of these minutes are welcome. Please forward those to Steve Clark. Please keep your communications professional and respectful. Communications will be forwarded to the appropriate author(s) of the minutes and addressed accordingly.
13. LDC Disclaimer: These minutes do not represent official positions of the LDC or its members. They simply reflect the comments made at the meeting. Furthermore, the LDC does not implicitly or explicitly recommend or endorse any product or service. Any product or service presented in these minutes is done so for purposes of discussion and analysis. The merit (or lack thereof) is open for the consideration and review by the entire membership.
14. Next meeting: St. Anthony Hospital. Friday, April 8, 2022, from 11:45 AM to 1:00 PM MDT.

Respectfully Submitted,
Steven E. Clark, Consulting Meteorologist

Lightning Links

This is a monthly listing of periodicals, websites, and videos about lightning and allied areas from a variety of sources. A headline or description is listed, followed by the link. Please note that some of the links are perishable, which means you'll need to go to the source for the information.

Owens, M., 2022. 'Tremendous Noise and Crackle': Residents Prepare for the Worst After 2 Columbia Homes Were Struck by Lightning. *WKRN-TV*. February 22, 2022.

Link: <https://www.wkrn.com/news/local-news/tremendous-noise-and-crackle-residents-prepare-for-the-worst-after-2-columbia-homes-were-struck-by-lightning/>

Dockrill, P., 2021: Lightning Strikes Carve a Deadly Signature Deep Inside the Bones, Scientists Discover. *Science Alert*. November 4, 2021. Link: <https://www.sciencealert.com/lightning-strikes-carve-a-deadly-signature-deep-inside-the-bones-scientists-discover>

Bacci, N, T. Augustine, H. Hunt, K. Nixon, J. Hoffman, L. Bam, F. de Beer, P. Randolph-Quinney, 2021: Harnessing Thor's Hammer: Experimentally Induced Lightning Trauma to Human Bone by High Impulse Current. *Forensic Science International: Synergy*. December 17, 2021. Link: <https://www.sciencedirect.com/science/article/pii/S2589871X21000760?via%3Dihub>

Espinoza, R. and C. Kellner, 2022. Electroconvulsive Therapy. *New England Journal Of Medicine*. February 17, 2022 (Abstract only). Link: https://www.nejm.org/doi/full/10.1056/NEJMra2034954?query=TOC&cid=NEJM%20eToc,%20February%202017,%202022%20DM733076_NEJM_Subscriber&bid=832056624
