

LIGHTNING DATA CENTER
MINUTES
AUGUST 8, 2003
ST. ANTHONY HOSPITAL, DENVER

Quote of the Month:

"If Beethoven had not written his Ninth Symphony, no one else would have done it. In contrast, if Watson and Crick had not discovered the double helix of DNA, others would have found it, and probably not long after. Rosalind came close to getting the answer herself."

Brenda Maddox, Rosalind Franklin: The Dark Lady of DNA, Harper Collins 2002

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Arendt, Benson, Bradley, Burrows, Capelli-Schellpfeffer, Cherington, Collier, Foley, Gartling, Gift, Keen, McDonough, Middleton, Resignolo, Russon, Sanders, Schoesson, Stewart, Swanson, Wachtel, Wallace, Wells, Yarnell.
3. I brought the following articles (abstracted in part here):
 - a. Kasparian J, Rodriquez M, Mejean G, et al. White-light filaments for atmospheric analysis. Science 2003;301:61-64.

"High-power femtosecond laser pulses have been found to propagate in the atmosphere as dynamically self-guided filaments that emit in a continuum from the ultraviolet to the infrared. This white light exhibits a directional behavior with enhanced backward scattering and was detected from an altitude of more than 20 kilometers. Air ionization inside the filaments also opens promising perspectives for laser-induced condensation and lightning control. The possibility of triggering and guiding lightning with laser beams has been debated for more than 30 years. The main concern is to protect sensitive sites from direct strikes and electromagnetic perturbations...the advent of high-power fs lasers, which produce ionized plasma channels with electron densities several orders greater than that required for lightning initiation...opened new opportunities in this domain."
 - b. Di Nunno N, Bimercati L, Viola L, Vimercati F. A case of electrocution during illegal fishing activities. Am J Forens Med Path. 2003;24:164-167.

"This report describes a fatal case caused by an illegal fishing practice involving stunning fish with electric shocks produced by an electric generator carried through the water inside the carcass of an old refrigerator...This occurrence is unusual because of the circumstances giving rise to the use of electric current and the cause of death, which resulted from the combination of the electric current produced by the generator and the saltwater, bring about death by drowning."
4. Leland Anderson, LDC member who has written on the subject of ball lightning, sent a letter containing his thoughts about the ball lightning 3 articles discussed at last month's meeting. (Articles by Selvaggi et al, Shmatov, and Cherington and Yarnell).
5. Ken Langford initiated a new LDC "service." Members were treated to his "electronic town meeting" this past month. Many members joined the "discussion" on return strokes, multiple ground points, NLDN, risks, etc.
6. Howard Wachtel brought a copy of an article on lightning by S O'Neill in the Washington Post (July 29, 2003). The article quotes Cooper, Holle, Marshburn, Uman, Wachtel.
7. Mike Foley announced that his committee on St. Anthony's International Conference met to discuss various aspects of the future conference. They will prepare written reports for LDC.

8. Dr. Mary Ann Cooper sent an email regarding LSESSI creating a website library of lightning articles. She asked our members to consider submitting articles to the library. Members thought this was a good idea. Mike Foley suggested we create an LDC library and build a link to LSESSI. He stated that we will need to obtain copyright permission from publishers. Rick Russon and Vicki Middleton agreed to work on this project.

9. Our guest speaker today: Mary Capelli-Schellpfeffer, MD of Chicago. Her topic: Experiments & Experience: Insights on Electrical Injuries in Occupational Incidents." Mary is a leading authority in this field. She gave an outstanding presentation on injury/fatality profile of occupational hazard; and understanding damage from energy transfer. All present appreciated her talk. I cannot do justice to her presentation in these minutes, but I can list the few notes taken from my notepad.

a. Occupational death tolls: (Bureau of Labor Statistics)

1928 19,000

2001 8,786 (including September 11)

b. Occupational deaths in the year 2000

Total fatalities 5920

Deaths from contact with electrical current 256

Death from fires and explosions 117

Deaths related to lightning (maximum) 19

c. Workplace injuries. Possible improving numbers as society changes with greater service jobs in relation to industrial jobs.

d. Number one cause of fire in the United States: Electrical event

e. Burn injury patients do worse if there are associated inhalation injuries or blast effects.

f. Lightning pathology: burns, cardiac deaths, cataracts, hearing loss, fractures.

g. Energy damaging process from electrical event: radiation, electrical, thermal, mechanical.

These notes are obviously incomplete I suggest members contact Dr. Capelli-Schellpfeffer for complete data and references.

10. These minutes do not represent official positions of LDC members. They simple reflect the comments made at the meeting.

11. Our next meeting will take place on September 5, the first Friday in September (Not the second Friday of the month). Please note the correct date.

Our guest speaker: Dr. Raphael Lee of the University of Chicago.

Next meeting: Friday, September 5, 2003 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital.

Respectfully submitted,

Michael Cherington, MD