

Minutes Jan. 9, 1998 **Lightning Data Center** *Centura Health* St. Anthony Hospital

Quote of the Month:

"Verbal humor, it seems to me, is like a flash of lightning. But I know that most writers put it together laboriously and lovingly. George S. Kaufman used to idolize the writing of Mark Twain, who worked this way. Robert Benchley did it the same way. And so does S. J. Perelman."

Oscar Levant in The Unimportance of Being Oscar.

1. Meeting began at 11:30 am and adjourned at 1:30 pm.
2. Members present: Bergschneider, Blanke, Breed, Cherington, Clark, Fischer, Foley, Keen, Rossie, Swanson, Toler, Walker, Yarnell.
3. I brought the following articles from the literature to the meeting:

a. Edwards FJ, Billittier AJ. Background and Physics of MRI. *Emerg Med Reports* Nov 11, 1996 Vol 17.

"Magnetic resonance imaging depends upon a phenomenon known as nuclear spin... MRI images depend upon the fact that the major isotope of hydrogen is abundantly found in all living tissues except bone, and that it possesses strong magnetic properties when spinning. When tissue is exposed to a strong magnetic field, enough of the free and bound hydrogen atoms (protons) swing into alignment with the magnetic field to give the tissue a net magnetic vector."

"The protons...do not come into perfect alignment with the main magnetic axis of the external field but oscillate about it with a slight 'wobble,' known as precession. This precession generates an electromagnetic wave, the frequency of which is the Larmor frequency (L)...The time it takes for atoms to relax back to baseline state has two components--T1 and T2 measured in milliseconds...Each type of tissue has a very specific T1 and T2."

b. Higham J, Venables K, Kopek E, Bajekal M. Asthma and Thunderstorms: Description of an epidemic in general practice in Britain using data from a doctors' service in the UK. *J Epidemiol Comm Health* 1997;51:233-8.

Under certain circumstances thunderstorms are associated with asthma and can affect many patients. Deputizing services are a useful source of data for the investigation of epidemics in primary care... Various causes have been suggested for the relationship between thunderstorms and epidemics of asthma... high concentration of fungal spores... rye grass pollen.

c. Schilling CJ. Effects of acute exposure to ultrahigh radiofrequency on 3-antenna engineers. *Occupational and Environmental Medicine* 1997;54:281-4.

Three men were accidentally exposed to high levels of ultrahigh frequency radio-frequency radiation (785 MHz mean frequency) while working on a television mast. They experienced an immediate sensation of intense heating of the parts of the body in the EMF followed by symptoms of headache, numbness, and skin redness. The most notable problem was that of headache.

The term radiofrequency when applied to the electromagnetic spectrum covers the

frequency range 100 Khz-300 Ghz; the term microwave is applied to the frequency range 300 Mhz-300 Ghz. The range 300 Mhz-3 Ghz (wavelengths 1 m - 1 cm) is termed ultrahigh frequency and includes cellular telephones, TV broadcasting, and microwave ovens (2-45 Ghz). The range 3 Ghz-30 Ghz (wavelengths 10 cm-1cm) is termed superhigh frequency and includes radar, satellite and other microwave communications systems. The effects of ultrahigh frequency and superhigh frequency are primarily those of heating.


4. Mike Foley distributed drafts of LDC Mission Statement, Vision, Profile, and Strategic Directions he had written for our deliberation and decisions. After a full discussion, Mike will make changes that will be included with this mailing. All members are asked to read them and make any additional suggestions they believe would be helpful. Our plan is to discuss any further changes at the next meeting, and then vote on adopting the proposals. Dan Breed suggested that we revisit these subjects each year. All of us are indebted to Mike Foley for his efforts on this project.
5. Mike suggested we bring suggestions for guest speakers and for future field trips to discuss at future meetings. Three field trips discussed today: a.) return to NCAR. We visited NCAR a few years ago. It was very worthwhile. b.) Tesla Museum in Colorado Springs. c.) the Lightning Fields in Socorro, New Mexico.
6. Phil Yarnell raised an interesting medical hypothesis for the group to ponder. He pointed out that there were many similarities in the symptom complex of 3 distinct clinical conditions: a.) Gulf War Syndrome; b.) post-traumatic, whiplash syndrome; c.) symptoms of survivors of lightning and electrical trauma. References: * Lightning Strike/Electric Shock Victims, Int., Inc. +* article by R. Masferrer entitled: The Gulf War Syndrome: Is It Really a New Disorder? in BNI Quarterly 1997;13:4-13.

Phil said that there are varied opinions about the basis of the symptoms: e.g. psychological basis versus brain dysfunction in a way that we do not yet understand. George Rossie stated that these 3 conditions illustrate that the symptoms are second to physiologic dysfunction and that the symptoms represent a final common pathway of varied conditions. He pointed out that the nervous system can respond to different injuries with a finite set of symptoms. George also suggested that there may be distinguishing clinical features to these three groups. For example, he said that the people with whiplash injuries are more likely to have vestibular and ocular motor dysfunction; lightning casualties are more likely to have perceptual disturbances.
7. Gunnar Blanke brought the videotape of "The Raging Planet" that included dramatic lightning scenes that he had captured.
8. Carl Swanson told us that he has been speaking with Dr. David Friedmeyer of Stanford University about the phenomenon of ball lightning. Carl will bring some of Dr. Friedmeyer's articles to a future meeting. Carl will be showing his lightning photographs and speaking on February 2 at the Denver Natural History Museum.
9. Julie Walker informed us that there will a meeting next week of the group collecting data on Colorado lightning injuries. The group includes: Boyson, Cherington, Clark, Glancy, Hedegaard, and Walker.
10. Rich Keen brought a videotape of a Channel 6 program. He and TV weatherman

Larry Green discuss El Nino on the tape. Because of the late hour, he will show the tape at the next meeting. Rich told us that he recently spoke to the Coal Creek Canyon Senior Citizens Society about weather related matters.

- 11. Cheryl Toler gave us an update on the responses to the questionnaire about whether recipients of the minutes wanted us to continue receiving them. Nearly 60 replied in the affirmative and 2 in the negative. Mike Foley suggested that Cheryl add a final notice with next months minutes to those who have not responded stating that their name will be deleted from the mailing list if we do not hear in the affirmative from them.
- 12. Just a reminder, that our minutes reflect the comments and discussion of each meeting. These comments should not be taken as position statements of the LDC. Those of us who speak to audiences or the media speak as individuals and not as representatives of LDC positions.
- 13. Our next meeting will be held on Friday the thirteenth of February 1998 at 11:30 am in the Main Auditorium of Centura Health, St. Anthony Hospital Central.

Respectfully submitted,



Michael Cherington, M.D.
Chairman, Scientific Committee of LDC

At the January 9, 1998 LDC meeting, the follow draft **Mission Statement, Strategic Directions, Vision Statement and LDC Profile** was adopted and is presented here for approval of the corresponding members. *Please participate in LDC and return the **Response Form** at the bottom of this page.*

The original Mission Statement is as follows:

1. Gather and study lightning casualty data for Colorado from various sources including Storm Data, the Colorado Hospital Association, the Colorado Department of Health, news media reports, and reports sent directly to the Center from medical facilities in the state.
2. Investigate the claims of under reporting lightning deaths and injuries and its possible consequences in terms of public awareness and policy making at the state and national levels.
3. Assist others to obtain and use lightning data sets that are as complete as possible for medical, meteorological, community protection and planning purposes.
4. Educate health care workers and the public about dangers of lightning, more accurate identification of lightning victims, proper immediate medical treatment of lightning victims and measures to reduce the risks of lightning injury.

✂ tear off at dotted line ✂

Please return by February 10, 1998

I Approve the Mission Statement, Strategic Directions, Vision Statement and LDC Profile as stated.

I Approve the Mission Statement, Strategic Directions, Vision Statement and LDC Profile with the following comments:

I Disapprove the Mission Statement, Strategic Directions, Vision Statement and LDC Profile as stated.

Name _____ (please print)

Please Indicate below any change/correction to your mailing address

Return to: Lightning Data Center
St. Anthony Hospital Central
4231 West 16th Avenue
Denver, Colorado 80204, USA.

Thank You!

DRAFT
for approval
January 9, 1998

Lightning Data Center

Mission Statement

The Lightning Data Center (LDC) is committed to being the international multi-disciplinary forum for actively promoting the understanding of the natural lightning phenomena through:

- Providing an open forum, through meetings and other forms of communication, for the exchange of ideas, theories, published works and case studies related to understanding the lightning phenomena.
- Facilitation of data collection and analysis of lightning related personal injury, death and property damage incidents.
- Investigation and analysis of the medical and scientific aspects of lightning related injuries and deaths.
- Dissemination to LDC members of information relevant to the study of lightning phenomena and its effects.
- Promoting publication of peer reviewed articles and papers on lightning related subjects in the fields of medicine, science, engineering, meteorology, climatology, education and other related fields of interest.
- Promoting public awareness of the lightning hazard and personal and property issues.

Lightning Data Center

Strategic Directions

LDC and its members will strive to maintain their self-governance and maintain an association with a supporting institution. An important element of LDC's overall mission is to promote interdisciplinary scientific discourse of lightning phenomena issues. These objectives go hand in hand with developing and maintaining a strong and complimentary relationship with Centura Health Systems and St. Anthony's Central Hospital and other established local, regional, national and international institutes, associations and enterprises.

To remain an effective and viable lightning-focused organization, LDC members should recognize the need to maintain the open exchange of ideas and that all members will not always be able to achieve unanimous agreement on all issues.

Lightning Data Center

Vision

To be the international multi-disciplinary forum for promoting the understanding of the natural lightning phenomena.

Lightning Data Center *Profile*

The Lightning Data Center (LDC) is a unique organization of individuals all interested in the natural lightning phenomena and its effects on man. The Lightning Task Force of Colorado, now LDC, was formed in February, 1992, and chaired by its founder, Dr. Michael Cherington, who recognized the need for improving data collection of lightning injuries; public education of the lightning hazard and the investigation of lightning related incidents. Operating in association with St. Anthony Hospital Central, Denver, Colorado, USA, LDC members have continued to conduct its monthly meeting. Individuals from medical, scientific and other related professional fields and also the public, interested in the natural lightning phenomena, gather to discuss lightning related issues. At first, there were twelve members. In 1997, the LDC corresponding membership numbered 115. Membership in LDC is open to all those with an interest in promoting the understanding of the lightning phenomena in accordance with the Mission of LDC. LDC also welcomes other organizations with similar interests to establish liaison membership.

LDC conducts monthly meetings, currently held each second Friday of the month at 11:30 a.m. (Mountain Time) at St. Anthony Hospital Central, Denver, Colorado, USA. The meetings are coordinated by the LDC Administrative Committee. Minutes summarizing the meeting's discussions are published and distributed to LDC corresponding members worldwide.