

Quote of the Month:

"It is the safest thing you can do....to get yourself thoroughly drenched in a thunderstorm. Wet clothes are better conductors than the body, and so, if the lightning strike, it might pass down the wet clothes without touching the body....Have you a rug in the house? Rugs are nonconductors. Get one, that I may stand on it here...Tall men in a thunderstorm I avoid. Are you so grossly ignorant as not to know that the height of a six-footer is sufficient to discharge an electric cloud upon him?...Nay, if the six-footer stand by running water, the cloud will sometimes select him as its conductor to that running water."

Herman Melville 1856

1. Meeting commenced at 11:30 am and adjourned at 1:30 pm.
2. Members present: Bergschneider, Cherington, Collier, Fischer, Foley, Gustafson, Hodge, Jafferis, Keen, Kimberling, Kithil, Langford, Rossie, H Wachtel, T Wachtel, Yarnell.
3. Introduction of two new members:
  - a. Bill Jafferis, leading member of the NASA Rocket Triggered Lightning Program. Bill lives in Florida and continues to performed triggered lightning experiments.
  - b. Thomas Wachtel, MD, Head of the St. Anthony Trauma System. Tom is a surgeon who specializes in Trauma and Burn Care. He moved here in May 1996 from San Diego.
4. I read to the members from two communications that I had received since our last meeting.
  - a. An Email letter from Richard Setchell of Wisconsin Electric Power regarding "lightning deaths without physical signs." Richard's comments were triggered by our discussion of last month. He suggests that lightning may just ionize the air/moisture next to the person and 'pass by.' The current flow through the body may be reduced so that external damage is limited by cardiac effects may still be serious.

He raises another question: Are there more ground to cloud strokes in the mountains? Is there more body damage to victims struck at high elevations?
  - b. A letter from Pat Wilson, Trauma Nurse Coordinator of Durango Mercy Medical Center. Pat states that their Trauma Committee is very interested in lightning injuries. They have seen 8 lightning cases so far this year. She provided a brief clinical outline of these patients.

Congratulations are due to Rich Kithil for his outstanding presentation at St. Anthony Central on August 21. Rich held a 2 hour tutorial on Lightning Safety to 25 senior Park & Recreation managers. I attended part of the program and concur with the positive feedback given by the registrants. Part of the program was shown that evening on Channel 9 news. Rich also appeared on NBC Dateline on September 6. Both were sparkling performances.

Members agreed to keep our mailings as in the past for one more month. After that we shall remove from the mailing list those who did not respond in the affirmative to our questionnaire. Ken Langford suggested that any member can respond in the affirmative "by proxy" for others.

We had a brief discussion regarding the concept of "entrance/exit" wounds in lightning victim. Dr. Mary Ann Cooper challenged this concept when she visited us earlier this year. Rich Kithil suggested we refer to "attachment points." Bill Jafferis referred to Chris Andrews experimental work in sheep where orifices (eye, ear, mouth) were portals of entrance.

5. Rich Kithil provided a news summary from the National Lightning Safety Institute which is attached to these minutes. He also attached a letter to Betsy Forrest of the Natural Hazards Center regarding an understating of lightning's dangers.

Rich reported that he and Mary Ann Cooper have reviewed a lightning incident involving 3 people who were in a Honda Van. The vehicle was presumably struck by lightning but sustained a "dent" in the roof. One of the patients continues to complain of dizziness. This is a case, to quote Rich, for Sherlock Ohms. We all agreed that, although it is relatively safer to seek shelter in an automobile than remain outside, there are no guarantees when it comes to lightning.

Rich received an Email letter from Mary Ann to remind us that the Annual Lightning and Mountains Conference is scheduled for Chamonix, France in June 1997.

Rich spoke about a lightning fatality in June in Minnesota. The guide on a canoe trip was killed when he lifted a metal cup to his lips. The fatal lightning strike hit 35 minutes after the previous strike.

6. Peggy Gustafson reported that the Resource Center will hold informational programs in the lobbies of St. Anthony Central and North Hospitals. Rich Kithil will provide an enlarged version of his "Lightning Safety Tips" and Ken Langford will help with photographic displays.

Peggy confirmed that the feedback on Rich Kithil's Seminar in August was positive. She will send out follow-up questionnaires in October to learn if they have made any changes in their organizational methods.

7. Tom Wachtel told us about a lightning incident in St. Louis over 10 years ago that was captured on movie film. A dentist and his son were struck on the sideline of a football field. Tom will try to find this film and bring it to a future meeting.

Tom suggested that the LDC might want to apply to the Dillon Family Fund for financial support for our studies. I shall contact Ray Coniglio for their address.

8. Julie Kimberling reported on her progress in obtaining outpatient and ER data. She has been working with Michael Boyson and others at the Colorado Hospital Association. Ken Langford provided Julie with a copy of our earlier questionnaire developed by LDC that can be used to collect data on outpatients (date and time of strike, activities, age and gender of patient, site of accident). Ken also provided Julie with a copy of a covering letter written by Phil Yarnell.

9. George Hodge has made progress in obtaining data from front range ambulance services. As we accumulate the data from Julie and George we should be able to

add to the information on the numbers of lightning casualties that we published in 1993.

George provided us with the details of a lightning strike that happened in and Evergreen man. People in the house noticed that the plumbing pipes were "sending of sparks." The patient experienced a tingling sensation before he found himself on the floor. He had been standing in the kitchen which was located in a high part of the house. George speculates that the patient became part of the "leader path." Since then the patient has developed personality changes.

10. George Rossie reported that on August 23 at 4:30 pm his neighbor's house was struck by lightning. The incandescent light bulbs exploded. There were no injuries and no damage to computers or television sets.


George will speak with Tom Wachtel and Peggy Gustafson about the possibility of developing a support group for patients in the Rocky Mountain region.

11. Michael Foley brought an article describing a lightning incident involving a commercial airplane over the Mediterrean Sea. The plane was an Air France 747 jet that was struck by lightning on September 5. Thirty passengers were injured by falling luggage. Several members suggested that turbulence may have played the major role in these injuries.
12. Howard Wachtel spoke about magnetic field transients and their possible effects on the cardiac cycle. There may be a vulnerable moment in the cardiac cycle just prior to depolarization. Changes in the magnetic field may precipitate a shift in the cardiac membrane potential in the order of kilivolts. Bill Jafferis observed that during the rocket triggered experiments, electromagnetic field changes seemed to have no ill effects on people or animals. The people, including photographers, were about 150 feet away from the locus of the experiments. Howard stated that a person would have to be 30 feet or more near to have effects on the heart.
13. Ken Langford found articles on "lightning proof tents." These articles are written in German so we await next month after Ken has had a chance to have the articles translated. Ken showed us photographs of lightning which he took in August. Some of these photographs show upward streamers along with lightning. Ken brought an essay by Mark Twain entitled "Political Economy" in which the subject of lightning is discussed.
14. Phil Yarnell recently purchased a copy of "Life After Shock" from Lightning Strike & Electric Shock Victims International and gave a short book review.  
  
Phil described a case of a lightning strike in Michigan in July 94 where a young man was struck while on an outdoor pay telephone. Since then he has had periods of depression, anger, muscle twitching and transient monoparesis.
15. Rich Keen has just returned from the Juno Alaska Ice Fields. Rich reported that while there, they had the fourth thunderstorm in the past 50 years!!
16. Dick Fischer reported that his daughter, who works for a biomedical company, has been studying the effects of EM on cardiac implants.
17. Bill Jafferis brought a video entitled, "Striking Decision." We had an opportunity to

view this excellent program on rocket triggered lightning experiments showing the rockets and tracking wires to ground. The rockets provide an upward streamer followed by a plasma trail and wire burn. The rockets are not damaged in these experiments.

18. Next meeting: **Friday, October 18, 1996**, at 11:30 in the Main Auditorium of St. Anthony Central. Notice this change in our usual schedule. We shall meet on the third Friday of October instead of our usual pattern of the second Friday of the month.

Respectfully submitted,



Michael Cherington, MD  
Chair, LDC

**Next meeting: October 18, 1996, the third Friday of October!!!**