

**LIGHTNING DATA CENTER
MINUTES
NOVEMBER 14, 2008
ST. ANTHONY CENTRAL HOSPITAL, DENVER, CO
www.stanthonyldc.org**

“Everyone is a genius at least once a year. The real geniuses simply have their bright ideas closer together.” Georg Christoph Lichtenberg (1742-1799)

1. Meeting began at 11:35 AM and adjourned at 1:15 PM. Moderated by Ken Langford.
2. Members present: Cherington, Collier, Foley, R. Gift, Y. Gift, Glancy, Kithil, Langford, McDonough, Stewart, Swanson, Wachtel, Wallace, Yarnell
3. Roundtable discussion: Carl Swanson noted that this past lightning season was the “...oddest and weakest storm season since 1996.” His view was that the storms in general were “backward” in relation to the monsoon season.
4. Lichtenberg figures were discussed in some detail. These skin anomalies can persist for 48 hours and are exhibited in perhaps 15% of lightning injury cases. Dr. Cherington was appreciative of networking on the subject and reemphasized the role of Parkinson (though not famous for it) in early assessments of the condition (James Parkinson April 11, 1755 – December 21, 1824, English physician, geologist, paleontologist, and political activist). Dr. Cherington reminded us that Lichtenberg figures are examples of fractals, geometric shapes that can be split into parts, each of which is a reduced-size copy of the whole. The physical mechanisms involved in creating these figures were discussed.

It was suggested that proximity to a given flash could play a role in activating Lichtenberg figures. Biopsies show no permanent skin change. Dr. Yarnell mentioned the relationship of capillary function. Perhaps the charge dilates capillaries close to the skin. He observed that the LF has a vascular component, since it blanches when pressed. He also noted that they still disappear post-mortem. Ken Langford hypothesized that the figures may be similar in mechanism to UV radiation burns. Gil McDonough: “We cannot eliminate out of hand the role of ultraviolet.” However, the lack of burn-effect or skin damage under microscopic investigation was cited. The transient nature of the figures is also a key aspect of the condition.

Ken believes that the dendritic patterns from Lichtenberg figures are a visible record of the path of the flow of electricity across the skin. The remaining question is “what is the mechanism of the interaction of the energy with the skin which leaves the mark, regardless of the pattern?” One member proposed a mechanism analogous to a polymer stimulated by a charge (similar to the LED), with skin pigment representing the electrified polymer.

It was also noted that the appearance of Lichtenberg figures on a patient is a key indicator of the role of lightning versus other causes (*a pathognomonic* sign). In particular, it was noted that these figures never occur on the skin of electrocution

patients, either in high voltage or low voltage injuries, where the electricity came from artificial AC or DC sources. It was suggested that the LDC might draw up an inventory of known observations about Lichtenberg figures with an eye toward creating and testing further hypotheses.

5. Dr. Yarnell introduced a case involving a 52 year-old lightning strike survivor from Poland. The patient sent a letter describing his symptoms and treatments to date. The accident occurred on July 2, 2006. His case exhibited many symptoms reported by other lightning patients including sensory neuropathy, left-side weakness, seizures, and sagittal sinus thrombosis (as delayed effect). Gil McDonough added that neuropathy almost always clears up. Greg Stewart suggested that the patient might benefit from contacting Lightning Strike and Electric Shock Survivors Int'l, Inc. for additional support. Mike Foley mentioned an on-line resource: Lightning Strike Survivor List. To clarify the two distinct groups, here's a brief summary:
 1. Lightning Strike and Electric Shock Survivors International (LSESSI, Inc.). Formerly Lightning Strike and Electric Shock *Victims* Int'l. (name changed for more positive connotation). Founded in 1989 by strike survivor Steve Marshburn and his wife. An international network, LSESSI offers mutual support for survivors of lightning or electrical shock, their families and families of non-survivors. Phone support, annual conferences, newsletter, information and referrals are available. Contact: www.lightning-strike.org, email: smarshburnsr@yahoo.com.
 2. Lightning Strike Survivor List (LSSL). Founded in 1999. On-line only. Email support group whose members have been affected by a lightning strike. Group includes survivors, family members of survivors, caregivers, doctors and others who want to share with people who can understand "because they have been there." Contact: <http://health.groups.yahoo.com/group/lightningstrike>. Subscribe: lightningstrike-subscribe@yahoogroups.com
6. Rich Kithil brought a new book entitled Lightning, Fire from the Sky by Craig B. Smith. It appeared to be a general lightning reference (Dockside Sailing Press, Newport Beach, CA, 2008). Books can be ordered directly from: Dockside Consultants, Inc., 316 Island Ave., Newport Beach, CA 92661) More info at: <http://www.docksideconsultants.com/lightning.html> Do not confuse this title with the movie of the same name, an "elemental thriller" involving the deadly convergence of storm systems over Rutland, MO and the ensuing electrical mayhem.
7. Ken Langford gave an update on progress with the lightning safety poster. Sarah Newman, an official with the National Park Service, has expressed interest in implementing the notice, but has suggested that before general deployment a study should be conducted to test its impact on hikers. Questions posed by the study might include such things as: Did you see any safety messages at the trailhead? Did you see a lightning safety poster? Was it easy to read? Other responses to specific content will shed light on whether it has been adequately understood. It was thought that, with minimal funding, a study of this nature could be conducted leading toward eventual implementation by the Park Service. By a show of hands, an informal vote of members supported the effort to conduct the study.

8. There was discussion on the structure and goals of the developing LDC website. Howard Wachtel expressed concerns over whether the enhanced website will commit us to unmanageable “service” functions. He would prefer that we maintain the sort of forum and information sharing functions established at the meetings, and avoid generating expectations from the public. Input for the site content is encouraged.
9. These minutes do not represent official positions of LDC or its members. They simply reflect the comments made at the meeting.
10. Next meeting: Friday, December 12, 2008 at 11:30 AM in the Main Auditorium of St. Anthony Central Hospital. Subject: TBA

Respectfully Submitted,

Gregory Stewart