



Chairs Corner

By Steve Tracton

The months of February and March are generally those with the greatest chance of a really Big One, i.e., a snowstorm to remember. Suffice it to say, however, this was another disappointing year for us snow lovers. We had a few occasions of nuisance only dusting to 1" events. On at least one occasion that was enough to close school in the Metro region, much to the dismay winter hardened Obama family from Chicago. The only real storm worth even mentioning was the 5"-8" snowfall occurred on March 1-2 – slightly better than no storm for a native like me from Massachusetts. On the half full side of the cup, though, was the single opportunity this winter to take my grandkids (ages, 4 and 2) sledding. Well, there's always next winter, or the winter after next, or the winter after that, etc, etc, etc

Which brings us to Global Warming (really? - best segway I could come with). For anyone paying attention to this subject, I'm sure you'll agree that the intensity of the so called debate has become unbelievably heated, especially now with an Administration and Congress willing and able to appreciate the relevant science issues and align its

policies accordingly¹. On the one extreme are the alarmists who proclaim the end of civilization as we know it should the world not act and not act now to mitigate and/or adapt to the consequences of anthropogenic global warming (AGW). On the other end of the spectrum are those who deny any possibility that AGW is occurring, let alone will continue into foreseeable future. The truth, of course, lays between these "wing nuts", for, as inevitably true with all weather/climate science, uncertainty rules. With open minded individuals the issue is not an absolute yes or no, but the relative odds of this or that.

The prevailing consensus of climate scientists as expressed in the [Intergovernmental Panel on Climate Change \(IPCC\)](#) is that global warming is occurring with a 90% level of confidence that it's primarily the result of human activities, especially emission of greenhouse gasses through the burning of fossil fuels. To me the real issue now is one of risk analysis and decision making. As I wrote in a comment to one of [Andrew Freedman's recent posts](#): *Suppose the "alarmists" (other than the wing*

¹ There are innumerable web sites, blogs, etc that illustrate the "debate". One of the better blogs, in my possibly biased opinion, is the Capital Weather Gang, featuring contributors [Andrew Freedman](#) (and sometimes [myself](#)).

nuts) are correct, as the science indicates, i.e., there will be harsh consequences to continuing global warming, including more extreme weather events?? Simply denying ANY possibility is not a solution - it's a total cop out! Responsible policy makers must weigh the costs of taking some action to mitigate and/or adapt versus the costs of doing nothing should the worst actually occur. We spent trillions to avoid nuclear annihilation during the Cold War (let alone \$\$\$\$ for the current wars and bank bail outs). Isn't the environment we live in and depend upon for our existence equally important??

On a much less serious note, there are some really great cartoons, jokes and spoofs of global warming one can find by googling – two examples follow.

It's hard to believe it's been almost two years since being elected as Chair of the DC-AMS (believe me, time does go by faster the older you get!). Although there were some disappointments (explained in next newsletter), the experience personally has been extremely rewarding and hopefully members feel they have received their money's worth over this period. If yes, the credit goes equally well to other members of the current slate of officers. If not, blame just me. It's difficult for us to know, since the response to our online survey was underwhelming. In any event, I'll be taking my leave after the June Banquet to clear the plate for the new Chair whoever he/she might be. The request for nominations (volunteers) for Chair and other officer positions was mailed to members and reproduced elsewhere in this newsletter. Please note that an election is not required for uncontested positions.

But, the Chapter year is not over just yet with at least two important events to mark in your calendars. The first is a meeting on May 18th where the featured speaker will be Chris Mooney. This will be the second time around for Chris, the first being September 2007 where he discussed his book *Storm World: Hurricanes, Politics, and the Battle over Global Warming*. At the May meeting Chris and co-author Sheril Kirshenbaum will discuss their new book, *Unscientific America: How Scientific Illiteracy Threatens our Future* (more Andrea's article following). On June 3 we'll have our premier event of the year, the annual Science Fair Awards Banquet. Our featured speaker will be

Veronica Johnson, News4 Meteorologist (see announcement flyer following). Please note we'd very much appreciate donations to cover the science winners and student/parent meals. Further information for donations are found via the DC-AMS [banquet announcement link](#) at our website.



Snowmen rally to protest global warming
Adapted after <http://globalwarming-factorfiction.com/wp-content/uploads/2009/02/hundreds-of-snowmen.jpg>



I don't see the problem with global warming. Apparently the Earth will heat up and sea levels will rise. Great, I've always wanted to live in a warm place by the sea. (Sources: <http://www.sickipedia.org/tag/global+warming> ; <http://www.ratemyeverything.net/image/4428/0/Glob al Warming Cartoon.ashx>

University of Oklahoma Workshop on Communicating Science

by Andrea Bleistein

On April 2, 2009, I attended the University of Oklahoma Center for Risk and Crisis Management's inaugural conference, "Communicating Science: A Conference on Communicating Weather Risks." The 1-day workshop included four panel discussions and featured a keynote speaker, Chris Mooney, a well recognized science and political writer.

Panelists addressed salient issues in science communication and communicating weather risks, such as responsibility, uncertainty and technology. Current research data and future research opportunities about communicating science were also presented. Panelists included experts from various fields and backgrounds such as education, media, research, government, industry and nonprofit organizations.

During the panel on responsibility in communicating weather risks, a TV broadcaster from Wichita, KS spoke about his responsibility to the National Weather Service in alerting his audience to warnings and the delicate balance he faces when deciding to go into continuous coverage of a weather event versus the responsibility he has to the network advertisers who have paid for commercial time.

For the panel on uncertainty, there was much discussion on the various levels of probability having different meanings for different types of weather events. An example being a slight risk for tornadoes (5% - 10% [probability](#)) may seem high for those of us in the weather community with a familiarity of these probabilistic terms but a 10% (low) probability of tornadoes has a complete different meaning to those of the general public. Also, some discussion focused

around the question: What is the real social cost of a false alarm?

Chris Mooney's keynote talk focused on the upcoming release of his co-authored book, *Unscientific America: How Scientific Illiteracy Threatens our Future*. He emphasized how Americans are paying less and less attention to scientists. For every five hours of cable news, less than a minute is devoted to science; 46 percent of Americans believe that God, not evolution, created life on earth; the number of newspapers with science sections has shrunk from ninety-five to thirty-three since 1989. The disconnect between the scientific community and American culture grows wider every day.

Finally, the panel on technology in communicating weather risks had some demonstrations of weather information displays and discussion of dissemination methods, including mobile phones. Much of the discussion began to focus on various the roles and responsibilities within our society including: 1) public responsibility for their own individual safety; 2) government role versus private sector role; and 3) economic ability of the public to have access to different dissemination methods.

Overall, the OU Workshop led to many interesting panel and side discussions which could have allotted for a much longer conference. It was another way for me to interact with the social scientists that are becoming better integrated into the field of meteorology and discuss the challenges and areas of needed research for the weather community to do a better job of communicating.

D.C AMS Chapter

March 24, 2009 Joint Meeting with the University of Maryland AMS Student Chapter

Reported by Alan Cohn

The March 24, 2009 meeting of the DC-AMS was held jointly with the University of Maryland AMS Student Chapter. The meeting featured introductions from the officers of both AMS Chapters, and insight into the type of research conducted at the University of Maryland's Department of Atmospheric and Oceanic Science (AOSC).

Anthony Santorelli introduced AOSC's graduate student group, called "Metograds." Metograds is a social network that promotes the Department and allows students to get together for basketball games, barbeques, and student seminars. Metograds also hosts "Skywarn" classes to train storm spotters, and demonstrates weather-related science experiments for kids at the annual "Maryland Day" event. More information about Metograds is available at www.atmos.umd.edu/~gcm.

Next, Steve Tracton spoke on behalf of the DC-AMS and described his close links to some of the faculty members in the Department. Andrea Bleistein promoted some of the upcoming activities for DC-AMS, including the Chapter Banquet in June, the officers' election, and a happy hour in May.

Jeff Stehr, a research scientist in AOSC, described the Department, as well as the Earth Systems Science Interdisciplinary Center, or ESSIC. He highlighted the Department's many government and quasi-government affiliations and broad expertise. Jeff then described some of the research he has been involved in, especially air quality and its relationship to climate change. He demonstrated the results of a major NO_x emissions program that began in 2002, showing that the increase in ground-level ozone concentration with temperature actually decreases because of the decrease in NO_x.

Jeff described other research conducted in the Department, including measurement of carbon fluxes, numerical weather prediction, and the effect of wind farms on climate, to name a few. He also described research coming out of ESSIC, including interdisciplinary studies to predict pollution in the

Chesapeake based on the land use around it.

Wallace Hogsett, a graduate student in AOSC, spoke next about his research on Typhoon Chanchu in the western tropical Pacific. Typhoon Chanchu formed early in the season in 2006. Wallace's research sought to answer why it formed so early and why it became so intense. His study revealed that all typhoons that formed that year in the western equatorial Pacific underwent genesis during an active cycle of the Madden-Julian Oscillation. Chanchu underwent a long incubation period in the equatorial zone and repeated vortex mergers played a dominant role in the typhoon's formation.

Da-Lin Zhang, a professor in AOSC, was the final speaker of the evening. He described his research to address the question of how upstream urbanization exacerbates the urban heat island (UHI) effect over Baltimore. The question arose out of observations that, under southwesterly winds, Baltimore often experiences warmer air and higher ground-level ozone concentrations than Washington. Da-Lin sought to prove his hypothesis that upstream urbanization exacerbates the UHI effect by running sensitivity experiments that replaced urban areas with rural areas.

He showed that removing the urban areas around Columbia reduced the UHI effect in Baltimore slightly, and that without urbanization around Columbia or Washington, the UHI effect in Baltimore was 25-30% less. This validated his hypothesis, showing that the UHI effect actually warms the boundary layer and has a "non-local effect." He summarized that the effects of urbanization depend on wind direction and the distance between two cities; in the case of Baltimore, Washington has a more significant effect on temperatures there in the presence of the right wind direction in the boundary layer.

Joe Bartosik thanked the night's speakers with the gift of DC-AMS t-shirts. Jeff Stehr thanked Anthony for his hard work with Metograds and for organizing the night's meeting in what will hopefully be a continued link between the two AMS Chapters.

**D.C AMS Chapter of the
America Meteorological Society
February 17, 2009 Meeting**

STORMY WEATHER: A MEDLEY OF SERENDIPITOUS DISCOVERY

**Dave Atlas, Distinguished Visiting Scientist
NASA Goddard Space Flight Center**

It was with extreme pleasure for me (Steve T.) to introduce our featured speaker, Dave Atlas. I've known, respected, and been humbled by Dave since my graduate school days at MIT some 35+ years ago while learning the basics of weather radar principles and applications. As I expect most of you know, Dave is recognized as one of the founding fathers of radar meteorology. According to the (National) AMS, he "solved many puzzles and invented numerous techniques that transformed a fledgling application into a vital scientific and operational tool." Moreover, it is no exaggeration to say there is scarcely an area within the field of meteorology that he has not significantly influenced.

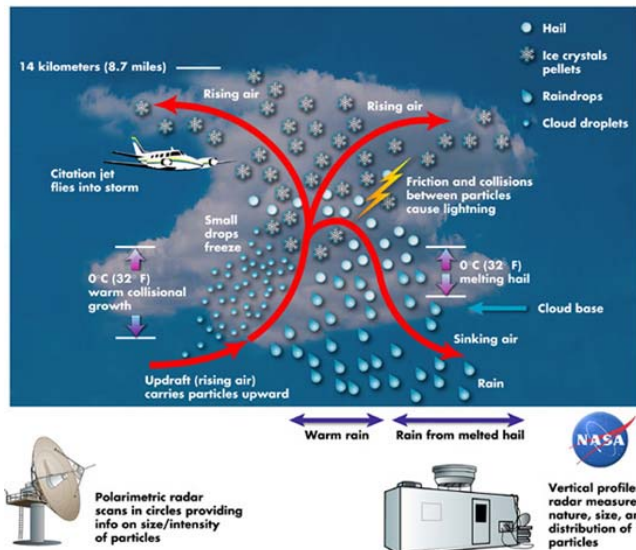
The presentation began with Dave humbly reviewing his background and proceeded with discussion of some career highlights. In 1945 he was the first to take extensive radar observations of a hurricane. With handful of other pioneers, Dave developed the techniques and technology leading to the installation of operational weather radars in the 1950s. He later developed methodologies that enabled installation of weather radar in aircraft. He was amongst the first to use Doppler radar for obtaining wind measurements, dramatic insights on super cell super cell structure, and Clear Air Turbulence.

In 1977, Dave became founding director of the Laboratory for Atmospheric Sciences at the NASA Goddard Space Flight Center in Greenbelt, Maryland. There, he drove the development of space-based instruments for monitoring the earth's atmosphere, oceans and cryosphere.

The "screaming message" of the presentation was the serendipity of discovery made possible by the freedom to exploit new opportunities with tools promising to provide interesting results – the kind

of flexibility, Dave says, has largely disappeared. Serendipity refers to making a fortunate discovery involving a strong element of luck. Luck, though, can be much more than chance. As so evident in Dave's case, luck is manifest by the meeting of planning and preparation with opportunity. Dave immediately recognized the opportunities of emerging state-of-the-art radar, satellite systems and related technologies, and by doing so he greatly revolutionized our understanding of atmospheric processes and our ability to predict them. Perhaps most importantly was the excitement displayed by Dave in his discoveries and long list of accomplishments. A more inspirational individual, I'm sure, would be extremely difficult to find.

**THE ANATOMY OF A CONTINENTAL
CONVECTIVE STORM**



"Full Body Scan" of an evolving tropical thunderstorm over the Amazon rainforest in 1999 based on data gathered by Dave Atlas (see <http://earthobservatory.nasa.gov/Newsroom/view.php?old=2003011511053>)

DC- AMS Treasurer's Report

January, 2009

1/01/09 Beginning Balance: \$ 7,586.19

--- Amounts Already included in Beginning Balance ---

- Business CD: \$ 4,115.27
 - Petty Cash: \$100.00
-

Income

Memberships via Mail & Food \$192.00
Memberships via PayPal
(fees already subtracted) \$0.00

Total Income: + \$192.00

Expenses

September Monthly Bank Services
for cancelled checks \$ 5.00
Check #460 to Postmaster
(Renew Mailbox for 2009) \$132.00
Check #461 to Andrea Bleistein
(Food – 1/29 Mtg) \$145.38
PayPal Fees \$ 0.00

Total Expenses: -\$282.38

Ending Balance (1/31/09): \$ 7,495.81



Fresh powder on the Mall provides excellent cross country skiing conditions. *Photo: Kevin Ambrose*

DC- AMS Treasurer's Report

February, 2009

2/01/09 Beginning Balance: \$ 7,495.81

--- Amounts Already included in Beginning Balance ---

- Business CD: \$ 4,115.27
 - Petty Cash: \$ 100.00
-

Income

Memberships via Mail & Food \$
\$ 0.00
Memberships via PayPal (fees already subtracted)
\$ 0.00

Total Income: \$ 0.00

Expenses

Monthly Bank Services for cancelled checks
\$ 5.00
Check #462 to Ryan Sobash (Website hosting for
2009) \$ 83.40
Check #463 to Andrea Bleistein
\$ 55.39
(AMS Poster Printing + 2/17 Mtg
Snacks/Drinks)
Check #464 to Joe Bartosik (2/17 Mtg Sandwiches)
\$ 133.56
PayPal Fees
\$.00
Varying percentages for \$5(9%), \$15(5%),
\$25(4%), \$35(3.75%) ----

Total Expenses: - \$ 277.35

Ending Balance (2/28/09): \$ 7,218.46

DC- AMS Treasurer's Report

March, 2009

SECOND CALL FOR: DC-AMS Officers for 2009-2010:

The DC-AMS has received interest for 4 of the 6 officer positions for the 2009-2010 Chapter Year. In order to continue the success of the DC-AMS Chapter, we still need to fill the following two positions:

1) **Corresponding Secretary:** Organizes content, layout and design of the DC-AMS monthly to bi-monthly newsletter.

2) **Recording Secretary:** Documents DC-AMS activities by taking notes at all monthly meetings and Banquet, submits notes/activities to national AMS, keeps DC-AMS Chapter projector for meeting use.

Both of these secretary positions are vital to keeping our members up to date with activities and keeping our active status current with the national AMS. We strongly encourage your participation in one of these spots as they are the least time consuming as compared to the Chair, Vice-Chair, and Treasurer.

Please contact the DC-AMS Chapter email (dc.ams.chapter@gmail.com) or Steve Tracton (s.tracton@hotmail.com) and Andrea Bleistein (ableistein@comcast.net) directly with your interest or questions as soon as possible but no later than by COB Wednesday, **April 22, 2009**.

Currently, the Chair, Vice-Chair, Treasurer and Science Fair Coordinator positions are unopposed with a person to fill each slot for 2009-2010. We will make an official announcement of who will be filling all of the officer positions at our next meeting or in a separate email announcement. So stay tuned!

3/01/09 Beginning Balance: \$ 7,218.46

--- Amounts Already included in Beginning Balance ---

- Business CD:
\$ 4,115.27
- Petty Cash:
\$ 100.00

Income

Memberships via Mail & Food \$
\$ 434.00
Memberships via PayPal (fees already subtracted)
\$ 407.49

Total Income: + \$ 837.49

Expenses

Monthly Bank Services for cancelled checks
\$ 5.00
Check #465 to Andrea Bleistein (3/24
Snacks/Drinks) \$ 11.41
Check #464 to Metograds (3/24 Mtg Pizza)
\$ 67.70
PayPal Fees
\$.00
Varying percentages for \$5(9%), \$15(5%),
\$25(4%), \$35(3.75%) ----

Total Expenses: - \$ 84.11

Ending Balance (3/31/09): \$ 7,971.84

The Science of Service

By: Frank Padula

When someone says the word community service it typically conjures up pictures of helping to serve people in a soup kitchen, stocking shelves at the local food shelf or picking up a hammer for habitat for humanity. And all of those are wonderful ways to give back to our communities, but for some of us, especially those of us with a passion for science, I think it is time to expand our frontiers. By sharing our enthusiasm for science we have the power to inspire younger generations to help shape the world we live in today and build the kind of world we want to live in tomorrow.

I encourage you to volunteer for serving as a judge at community science fairs, visit classrooms, mentor group projects, make yourselves available to educational institutions or simply get involved with an innovative project or organization. "One Laptop Per Child Association, Inc. (OLPC)" [c.f. www.laptop.org/en/] is a perfect example. OLPC is a U.S. non-profit organization set up to oversee the creation of an affordable educational device for use in the developing world.

Mission: "To create educational opportunities for the world's poorest children by providing each child with a rugged, low-cost, low-power, connected laptop with content and software designed for collaborative, joyful, self-empowered learning" [wikipedia.org]. Below is an image of the XO-1 laptop:



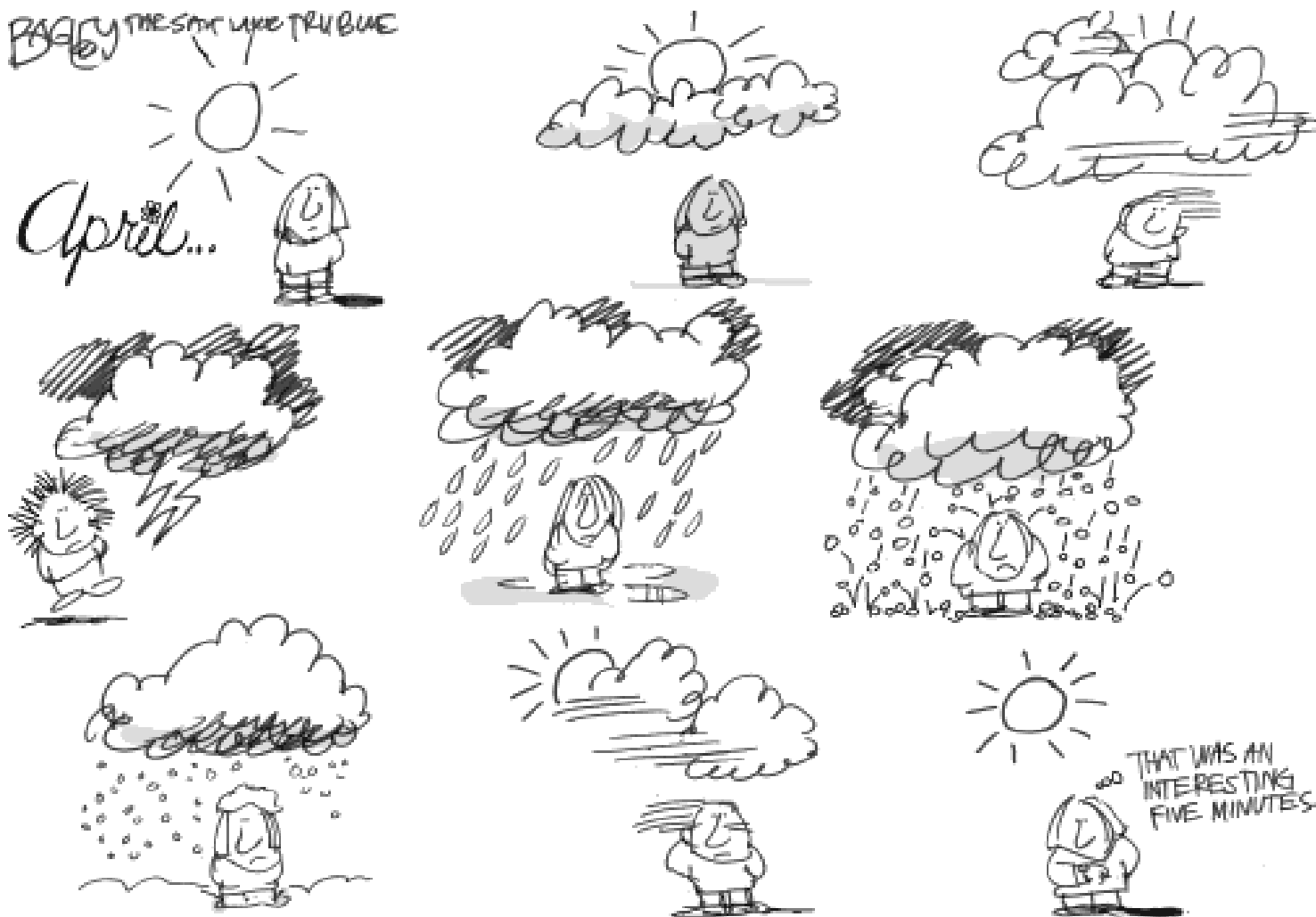
These laptops are unique in a number of ways, for example, they were developed to withstand almost every climate on earth; they can be recharged manually without access to electricity, and each laptop can be connected to each other through a mesh wireless network installed on each laptop (the green handles are antennas)! In addition, these laptops are packed with loads of educational software (Ex. Google Earth, Electric Circuits programs, etc.) in addition to games, musical software and more. You may ask yourself what does this have to do with our Chapter? The answer is anything and everything, and that is the point. What I propose is the possibility to incorporate existing AMS educational software on these laptops so that students in our local community and across the world receive an exposure to atmospheric science. Suggestions on other application software are welcome. The foundation of science is looking at problems with new perspectives and angles and sharing that information so that everyone moves forward. And that is the kind of spirit that I challenge this Chapter to embrace.

(Chair's comment: I fully endorse Frank's message and suggestions. It's a terrific idea for reaching out to the community, and especially children, to generate interest in meteorology and related sciences. The principal caveat is that even the very best ideas are not cost free in terms both of people and financial support. Unfortunately the Chapter cannot do this without volunteers and obtaining sponsors to fund the project. Thoughts on this are most welcome – send suggestions, etc. to dc.ams.chapter@gmail.com .



Cherry Blossoms, 2009, photographed by Kevin Ambrose
<http://washingtonprints.com/>

APRIL WAIT-A-MINUTE WEATHER
How true it is!!



Lower right fellow says, "That was an interesting five minutes".

(Source: http://www.sitnews.us/DaveKiffer/042106_kiffer.html)

Weather and Creaky Bones and Headaches By Steve Tracton

How many times have you heard someone claim to they knew it was going to rain because they could feel it in their bones or were or felt a headache coming on?? I sure have and invariably attributed it to nothing more than reciting an “ole wives” tale. Such tales are typically related to changes in atmospheric pressure and/or temperature. To the best of my knowledge – but I’m not an expert on this - there have been only a relatively few controlled experiments to assess the validity of relationship between weather and health, and the results appear inconclusive.

I recently happened to notice several articles (e.g., <http://www.sciencedaily.com/releases/2009/03/090309161951.htm>) about a large and well designed study to examine changes in air pressure and temperature as a headache trigger. The study of more than 7,000 patients was led by researchers at Beth Israel Deaconess Medical Center (BIDMC) in Boston. The findings demonstrate that higher temperatures, and to a lesser degree, lower barometric pressure, contribute to severe headaches. Specifically, *“for every temperature increase of 9 degrees Fahrenheit (5 degrees Celsius) in 24 hours, there was a 7.5 percent higher risk of severe headache”* and *“for every 5 millimeters the barometric pressure reading fell over 72 hours, there was a 6 percent higher risk of headache.”*

I have no way of questioning the particulars of the study, but some obvious questions arise that almost certainly the researchers did not consider. The fact of the matter is that the temperature most days rises at least 9 degrees from the early morning low to daytime maximum. Also, it’s easy to demonstrate that a pressure drop of 5 millimeters is about equivalent to riding a building elevator from the ground to 12th floor. Indeed, almost twice this elevation gain and pressure fall is experienced by just driving from National to Dulles airports.

If the studies claims were valid, one might expect hospital emergency rooms (especially in cities dominated by high rise buildings) would be flooded with headache sufferers independent of changes in weather. I assume the same would be true in regard to complaints about creaky bones attributed to the approach of low pressure system.

Just think about the associated medical costs if changes alone in temperature and air pressure did indeed trigger headaches and aching bones requiring emergency room attention. The associated medical costs, I suspect, would raise budget concerns about health care well beyond anything now being considered.



(adapted from www.wretch.cc/blog/alvinozoo/26243309)