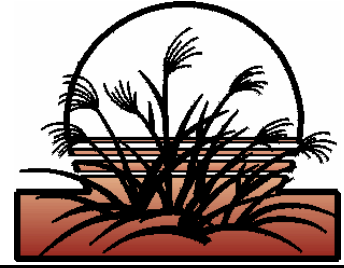




**NEWSLETTER  
TWIN CITIES CHAPTER  
AMERICAN METEOROLOGICAL  
SOCIETY  
February, 2007 Vol. 28 No. 6**



**The February meeting of the Twin Cities Chapter of the AMS will be at 7 PM Tuesday, February 20, 2007, NWS, Chanhassen, MN. Specific directions to the meeting can be found on page 5. AMS chapter members, interested acquaintances and potential members are invited to attend.**



*Speaker: Chris Bovitz*

*Topic: Operations at the National Operational Hydrologic Remote Sensing Center*



Chris will discuss operations at the National Operational Hydrologic Remote Sensing Center ([NOHRSC](#)). He will talk about the data that comes into their office, what they do with it once it gets there, a bit about their snow model, and how they show the rest of the world their modeling results.

Chris Bovitz graduated from the University of Minnesota-Twin Cities with a B.S. in computer science and from the University of Wisconsin-Madison with an M.S. in atmospheric sciences. He previously worked as a hydrologist, computer programmer, system administrator, and webmaster at the [West Gulf River Forecast Center](#) in Fort Worth, Texas. He has been with [NOHRSC](#) since January 2004, where he does computer programming, system administration, and text discussions for the web site, among other things. When he's not doing his weather stuff, he enjoys being husband to Lori and dad to Alex and Zack and rollerblading, bicycling, and reading historical nonfiction. Chris is Minnesota born and bred, having been raised near Chisholm in the Mesabi Iron Range.



*President's Corner: Chris Bovitz*

Cold enough for ya? Yeah, me too. How much you wanna bet we'll end up with an "average" winter, statistically speaking? Well, maybe not so much for snowfall, but for temperature. Winter climatologically ends at the end of the month.

Science fair season is coming up, and with it, opportunities to be a judge. The fairs that we're currently aware of are on our [chapter calendar](#). If you can volunteer a half-day of your time, it would be appreciated. We will be awarding weather radios instead of subscriptions to *Weatherwise*. If you would like to be a judge, contact [Karen Trammell](#).

And if you know of other science fairs in and around the Twin Cities, let her know. We've had a good track record with fairs, and I'd like to continue or improve that.

I was at the Mall of America's *Government on Display* on January 28, and spoke with a couple of people interested in joining our chapter. They haven't followed through and actually applied yet, but I hope they do. These outreach events are crucial for our continued vitality and relevance in the community.

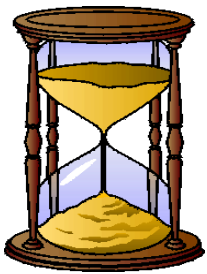
I really don't have much else to say right now, but I'm sure I'll think of something the second after I hit [Send] on this message. Just keep spreading the word about us!

## *Member of the Month: Ron Trenda*

Ron Trenda is our featured chapter member this month. Ron is a meteorologist on the *Fox9* weather team, and currently presents the weather on the Fox9 weekend morning news. Ron also appears at times on the *Fox9* weekday newscasts, and on myfox9.com, where web weathercasts are updated several times each day.

Ron has lived in the Twin Cities most of his life, and he enjoys our incredible variety of weather. He attended the University of Minnesota, and then transferred to the University of Wisconsin-Madison, which has a highly ranked meteorology program. After earning his meteorology degree, Ron returned to the Twin Cities and worked at the Minnesota state climatology office, while also beginning his broadcasting career as a local radio meteorologist. Ron's interest in broadcasting eventually led to a position as weekend meteorologist and science reporter at KMSB-TV. After several years at KMSB, Ron started a weather consulting business, Weather Trends, which focused on weather sensitive businesses such as golf courses and amusement parks. Ron simultaneously worked as a free-lance weather anchor in the Twin Cities. Ron also served for a time as Director of Meteorological Operations at Digital Cyclone, a Minnetonka-based provider of weather information. Ron's return to KMSB a few years ago allowed him to develop new skills in the evolving world of broadcast meteorology. New computer models and sophisticated weather graphics help TV meteorologists deliver timely and valuable weather information, but many people want weather information throughout the day. To meet that need, weather information is continuously updated on myfox9.com. Ron has been forecasting Twin Cities' weather for over 25 years, and is fascinated by our range in temperatures, impressive thunderstorms and occasional snowstorms. When not watching radar, Ron loves to play golf and explore the outdoors, and he occasionally sails. Indoor activities include swing dancing as well as some traditional ballroom dancing.

Ron served for several years as newsletter editor and meeting organizer of our Twin Cities AMS chapter. Unique meetings that he organized and moderated included a panel discussion on "Women in meteorology" and a multimedia presentation on "The history of television weathercasting".



### *A Look at Weather History: Early Windchill Research*

Anthony Stender

The earliest attempts at correlating atmospheric variables to perceived or sensible temperature are from experiments conducted by a team led by Sir Leonard Hill around 1919. His team approached the problem by utilizing a kata thermometer, which is fairly similar to a standard thermometer. They raised the kata's temperature to 99.4° F and measured the time it took the kata to drop two degrees under a variety of conditions. Their findings weren't considered perfect, but the results were tabulated and made available for use by other scientists.

In the late 1930s, a group with John B. Pierce Hygiene Laboratories of Connecticut actually conducted research on human subjects. They measured human heat loss under various conditions within a controlled chamber, and their findings were quite different from Hill's.

Also in the late 1930s, a team of scientists in the Antarctic, led by Paul Siple and Charles Passel, decided to investigate the effects of wind chill. Because of the poor library facilities in the Antarctic, they didn't know of any other wind chill research. They decided to use a two-pronged attack at the problem. For the first prong of their experiments, they filled a cylinder with freshly melted snow, stuck a thermometer into it, and placed the cylinder above the science building. Wire leads ran from the thermometer into the building, so they could determine when freezing began and ended in the cylinder. However, the scientists weren't satisfied with the results. They didn't trust their wind velocity measurements, because the anemometer didn't work well in the cold air.

Siple and Passel's second approach to the problem was human testing. Warmly-dressed but bareheaded volunteers would stand outside facing the wind. The scientists then measured the time it took for

the exposed skin to freeze. Typically, the subject would know when freezing occurred, because they would feel “a sharp twinge of pain”. Most of the time, it took less than two minutes. The base medical officer conducted these experiments, and he claimed that he could usually notice a sudden blanching of the skin when freezing occurred. The scientists noticed that not everyone reacted in the same way or at the same pace to the wind’s chill. Passel himself was apparently a very eager volunteer for these experiments, because his name pops up frequently as a test subject.

To conclude their paper, Siple and Passel cite stories of researchers who were exposed to extreme weather conditions on Antarctica. They also mention that some of the people stationed in the Antarctic like to sunbathe in the nude, so long as it’s sunny and absolutely calm outside. Their most frightening comment is that temperatures below –60° F can cause frostbite and hemorrhages in the bronchial tubes of someone who is engaged in any form of exercise that is more exerting than a simple walk.

As a final note, another updated wind chill index was published in just the last few years, because Siple and Passel’s formula was in need of refinement. This version is based on experiments in 2001 by Canadian and American scientists who conducted experiments inside a wind tunnel on people with their faces exposed.

Sources:

1. Siple, Paul A. and Charles F. Passel; Measurements of dry atmospheric cooling in subfreezing temperatures. Proceedings of the American Philosophical Society, Vol. 89, No. 1, 1945, 177-198.
2. Aviation Safety Vortex 1/2003, A cold wind blowing. Found on Transport Canada website: (<http://www.tc.gc.ca/civilaviation/systemsafety/newsletters/tp202/1-03/V029.htm>)



***Minutes of the January 16, 2007, Submitted by Lori Bovitz***

The January 2007 meeting of the Twin Cities chapter of the American Meteorological Society was held on January 16, 2007. President Chris Bovitz called the meeting to order at 7:09 p.m. Vice President Shelby McQuay and Secretary/Treasurer Lori Bovitz were also in attendance. About 18 members and potential members were also present.

The secretary and treasurer reports were read and approved.

Old business focused on the following:

- Requests have been starting to come in for science fair judges. Karen Trammell, science fair coordinator, should be notified of any requests. Emails can be sent to her via [sciencefair@twincitiesams.org](mailto:sciencefair@twincitiesams.org).
- John Wetter updated the chapter on what is needed to reach nonprofit status. Not much has been done due to the holidays and the upcoming tax season. One of our newest members is an accountant and he volunteered to look into the process.
- The NWS will again be participating in the *Government on Display* event at the Mall of America. The local AMS chapter will have information at the event and Chris Bovitz also requested volunteers to come and talk to visitors about our chapter. It was decided not to do a raffle, as it would conflict with the NWS raffle.
- Tim Samaras, storm chaser, will be appearing at the Pantages Theater in Minneapolis on April 12. The chapter was reminded that a group rate was available, but at least 10 members will need to be interested. So far, only three requests have been received. Members will have until late January to decide. If we do not have enough interest, the effort will be dropped.
- The location and speaker for the next monthly meeting were still being determined and will be announced at a later date.

## Upcoming Events:

- Jan 27-28: Government on Display. Mall of America.
- Feb 20: Monthly meeting, 7:00 p.m. Location: TBD. Presenter: TBD. Topic: TBD.
- Mar 20: Monthly meeting, 7:00 p.m. Location: TBD. Presenter: TBD. Topic: TBD.

After the meeting, Karen Trammell discussed the heat burst that occurred in western Minnesota on July 16, 2006. She described the characteristics of heat bursts, current thoughts on heat burst formation and some recent heat burst events.

The main characteristic of a heat burst is a sudden increase in temperature, drop in dewpoint, and wind gusts that can exceed severe levels (greater than 60 mph). This usually occurs in the evening when evaporated, cooled downdraft accelerates to the surface. There are usually light precipitation echoes nearby.

Karen pointed out that heat burst detection and prediction is still very limited. Forecasters should be aware of the environment conducive to heat bursts. The characteristics of this environment include an onion-shaped sounding, which represents a deep, sub-cloud mixed layer and a shallow surface inversion. The use of DCAPE may be useful in finding areas where downdrafts could accelerate towards the surface. Clues can also be determined from radar data. There is typically a clearing in the ground clutter pattern, a serpentine (or snake-like) pattern in the precipitation echoes on the radar, and in the velocity data mid-level convergence and low-level divergence are detected.

Karen also discussed in more detail the Canby, MN heat burst from July. Temperatures rose to 100 degrees at 1115 p.m. while the dewpoint dropped to 32 degrees and the winds gusted to 63 mph from the south. She also noted the effects spread well into central Minnesota including Appleton and Willmar over the next 4 to 5 hours. Karen was not sure if it was the initial burst spreading out or if it was repeated bursts.

## *Upcoming AMS Chapter Meetings and Other Events*

Date & Time	Event	Location
<b>2006-2007 Chapter Year</b>		
February 20, 2007 7:00pm	February meeting Speaker: Chris Bovitz Topic: Operations at the National Operational Hydrologic Remote Sensing Center	<a href="#">NOHRSC</a> Chanhassen, MN ( <a href="#">map</a> )
February 23, 2007	<a href="#">Twin Cities Regional Science Fair</a>	<a href="#">University Field House</a> University of Minnesota Minneapolis, MN
March 3, 2007 7:00pm	<a href="#">South Central/Southwest Minnesota Regional Science Fair</a> Junior/Senior High Division	<a href="#">Centennial Student Union</a> Minnesota State University, Mankato
March 20, 2007	March meeting Speaker from the <a href="#">Des Moines Severe Weather Conference (tbd)</a>	<a href="#">St. Thomas University</a> St. Paul, MN
April 12, 2007	Tim Samaras and 3 others will be speaking Laura.Murphy@orpheum.com	Pantages Theatre, Minneapolis
April 14, 2007	<a href="#">Minnesota Skywarn Workshop</a>	Discovery Center (at the public school

		district building), Buffalo, MN ( <a href="#">map</a> )
April 17, 2007 7:00pm	April meeting	to be determined
April 20-21, 2007	<a href="#">Minnesota Academy of Science Annual Meeting and Winchell Undergraduate Symposium</a>	<a href="#">Hamline University</a> St. Paul, MN
May 15, 2007 7:00pm	May meeting - Picnic, recap of the year, elections, and planning for next year	<a href="#">Twin Cities WFO</a> Chanhassen, MN ( <a href="#">map</a> )

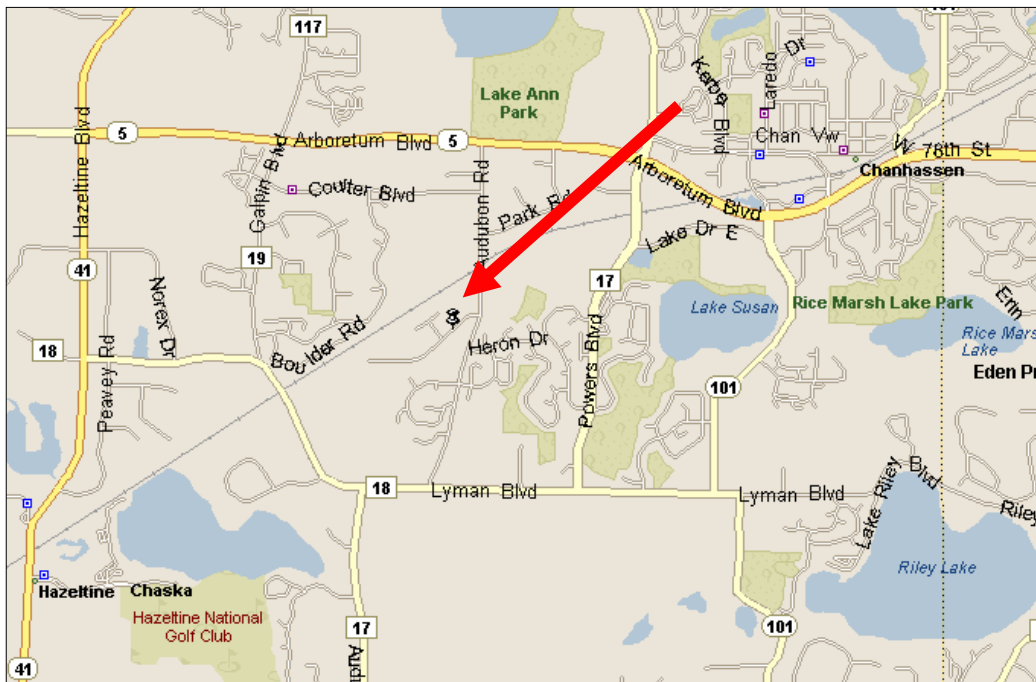


### AMS on the WWW

Please check <http://www.twincitiesams.org> for lots of interesting information, changes and updates. Thanks to Chris and Lori Bovitz for their hard work.

**Reminder: The February meeting of the Twin Cities Chapter of the AMS will be at 7 PM Tuesday, February 20, 2007, NWS, 1735 Lake Drive West, Chanhassen, MN.**

### Directions



Take Highway **494** to the exit for Minnesota **Highway 5** west in Eden Prairie. Travel west on highway 5 into Chanhassen. Turn **left** (south) at **Audubon Road**. Follow Audubon Road to **Lake Drive**, then turn **right** and follow Lake Drive to the NWS entrance, which will be on your left. The Nexrad radar tower will be visible as you approach the area. An alternative, if traffic is heavy and you want to avoid the Audubon turn off of highway 5, is to turn

**left** at the light onto **Powers Boulevard**, and head south. You would then take the **first right** off of Powers Boulevard, onto **Park Road**, and follow it to Audubon Road, then turn **left** and head south to Lake Drive.

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**Please fill out this form and mail it in with your annual Chapter dues (\$20 regular, \$6 student). This information is used for Chapter purposes only, and only your name will be listed on the Chapter web site.**

Name \_\_\_\_\_ Daytime phone \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

E-mail address \_\_\_\_\_ If you prefer to be notified via e-mail when the newsletter is posted on our website, rather than having us mail you a paper copy of the newsletter, check here \_\_\_\_\_

Suggestion for an AMS meeting topic \_\_\_\_\_

Dues are \$20 per year for regular membership, \$6 per year for student membership.

Make checks payable to Twin Cities AMS, and mail to:

Lori Bovitz  
20716 Hurley Avenue  
Lakeville, MN 55044

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Arden Hills MN 55112-3644

