

NEWSLETTER

**National Weather
Association**

NO. 11 – 6 JUNE 2011

Extreme Precipitation Events in Future Climates: Weather, Water and Climate Research Applications for the Colorado Front Range

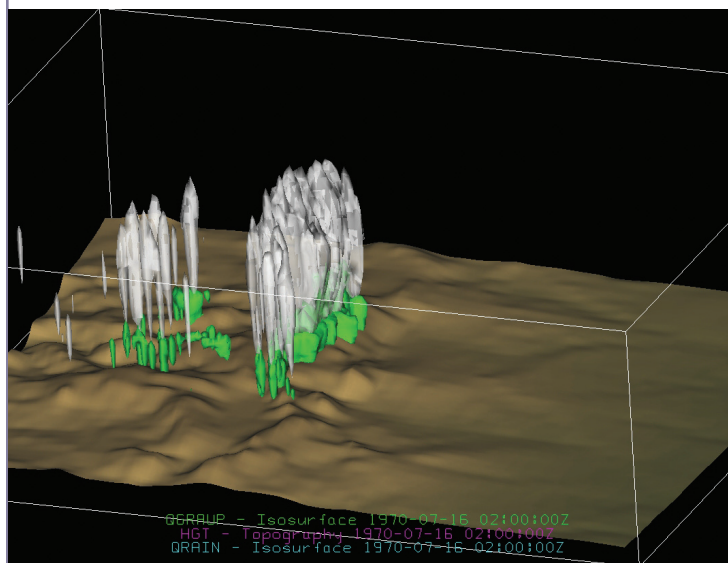
Kelly Mahoney

University Corporation for Atmospheric Research
Postdocs Applying Climate Expertise (PACE) Fellowship Program
Boulder, Colo.

Will extreme rain events and flash floods increase in the future? If so, where, by how much, when and why? Addressing this complex series of questions is no easy task, but the issues are of critical importance to water resource managers and stakeholders across the country. Thus, it is imperative that atmospheric scientists and decision makers in affected sectors commit to working together in order to guide efforts to address these pressing challenges.

One approach used to assess the local effects of climate change is the regional

downscaling of global climate models. It is within this general framework that a collaborative research project between the NOAA (National Oceanic and Atmospheric Administration) Earth System Research Lab (ESRL) and U.S. Bureau of Reclamation (USBR) is currently underway. As part of UCAR's Postdocs Applying Climate Expertise (PACE) program in coordination with the Western Water Assessment, this particular study uses the Weather Research and Forecast (WRF) model to compare climate projections of past and future extreme precipitation events at the storm-scale (1km). Particularly in complex terrain such as the mountainous western U.S., the ability to anticipate extreme precipitation events and understand them at a local scale is of critical importance to many meteorological, hydrological and societal applications. An approach such as this will evaluate the value of transforming climate-scale data into local weather "events." Though data on this scale are somewhat



WRF downscaling simulation of summertime extreme precipitation over the Colorado Rocky Mountains. Green shading shows rainwater and white shading shows graupel/hail. Past and future events are compared in this framework in order to identify systematic storm-scale differences.

Lightning Safety Awareness week is in June! See related injury article on page 3.



Inside This Edition

Extreme Precipitation	1
Lightning Injuries and Safety Messages	2
New NWA Members	3
36 th NWA Annual Meeting	4
Keep Your NWA Seal Active	4
36 th NWA Annual Meeting Pre-Registration	5
NWA Donors	6
Professional Development Opportunities	7
NWA Annual Meeting Golf Outing ..	7
Digest Photo Contest	8
Dates 2 Remember	8

See EXTREME, page 7

Mechanisms of Lightning Injury Should Affect Lightning Safety Messages

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University of Illinois at Chicago
Chicago, Ill.

Ronald L. Holle
Holle Meteorology & Photography
Oro Valley, Ariz.

Lightning continues to be one of the leading causes of weather fatalities. There are several mechanisms of lightning injury accepted by the meteorology and lightning community:

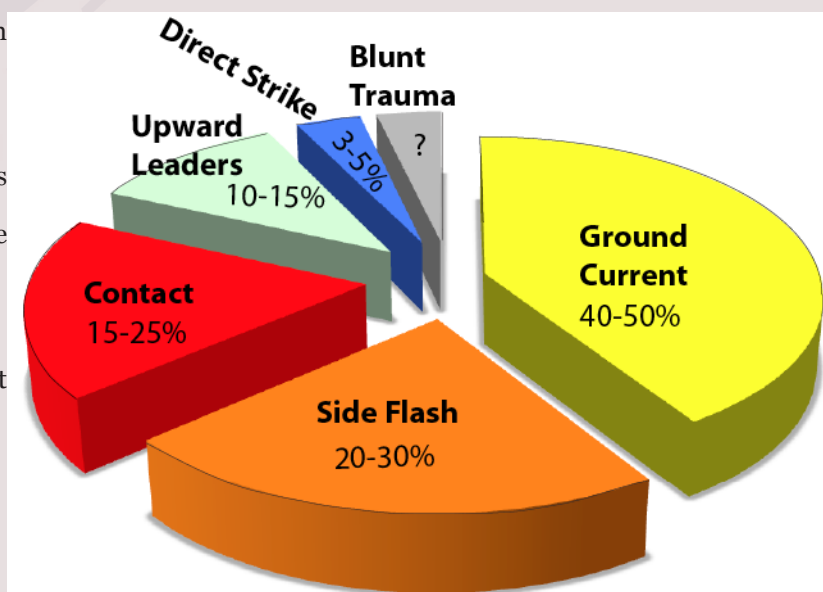
- Direct strike
- Contact potential
- Side splash/flash
- Earth potential rise/ground current
 - Step voltage
 - Ground arcing
- Upward streamer/leader and
- Blunt, concussive injury



However, victim accounts and newspaper reports continue to cite a direct strike as nearly the only cause of injury. Probably a truer distribution of injury by mechanisms illustrated in the graphic below.

Factors that lead to misreporting the actual mechanism include:

- Lightning occurring too fast to be seen accurately
- Confusion/amnesia of the victim
- Untrained eyewitnesses with only partial views
- The brain's normal tendency to 'fill in the blanks'
- Emotionally charged, unexpected event
- Lack of knowledge that other mechanisms exist
- Belief in common myths / misinformation
- Few incidents investigated by trained experts
- No formal criteria for incident investigation
- Delays in reporting if in remote locations
- Newspaper reports taken from non-witnesses or police reports
- Reporter deadlines that preclude adequate research and
- Over dramatization / exaggeration of most life events in the last decade



Estimated distribution of lightning injuries by mechanism

See LIGHTNING, page 3

Welcome to the National Weather Association

The following members joined the NWA in May 2011.

Regular/Military/Retired

Scott Blair
Dr. Carl Boldt
Sherrod Bybee
William Clements
William Elser
Richard Engle
John Farris
Jairo Franco
Minh Freed
Ferdinand Furer
Fiona Gorostiza
Jeff Hawks
Adam Hill

Veronica Holtz
Scott Izynski
Lauren Jones
Mike Knechtel
Denise Laudeman
Samantha Matthews
John McCoy
Steven A. Morris
Jan Null
Meghan Reinert
Ronan Rhodes
Rebecca Rosenstiel
David Seibert
Benjamin Shoemake

Gregory Stephens
Thaddeus Truitt
Eric Wilhelm
David Witham
Ben Zimmerman

Students

Ben Alonzo
Clinton Bourgeois
Christina Branson
Eric Brewster
James Bryant
Paul Carlone
Elissa Coombs

Mark Elyea
Danielle Hill
Maya Itagaki
Adam Lorch
Jeff Makowski
Scott Mowaswes
Jeffrey Nelson
Robert Nelson
Diamilet Perez-Betancourt
Kristin Smedley
Scott Thrasher
Jaime Travers
Gian Villamil

LIGHTNING continued from page 2

The vast majority of errors are unintentional on the part of the survivor, witnesses or reporters. Most reporters are simply doing the best job they can with limited time, access to sources and knowledge of lightning physics. It is far better to work with them to include injury prevention ideas in their reports than to worry about minor inaccuracies in the story details.

The widespread belief that nearly all lightning injuries are from direct strikes has led to educational efforts that overly stress precautions to avoid direct strike that, in fact, are much less common than other mechanisms. Educational efforts should include other mechanisms of injury, particularly when combinations of these mechanisms may occur when larger numbers of people are involved.

Public education should also stress proactive rather than reactive behavior. Knowing the weather patterns and the forecast for one's area is essential when an outdoor activity is planned. Simply delaying an activity or planning alternate activities can save lives.

Making injury prevention messages simple and direct is probably the most important point. The slogan of the Lightning Safety Week, "When Thunder Roars, Go Indoors" is easily remembered by preschoolers as well as adults when thunderstorms occur. The Lightning Safety Week website, www.lightningsafety.noaa.gov, has many useful tools for teaching all ages about lightning injury avoidance.

A slide series on this subject that can be used in outreach activities is available for download at www.nwas.org/meetings/nwa2010/. You can also read more about this subject at

www.vaisala.com/Vaisala%20Documents/Scientific%20papers/11.Cooper,%20Holle.pdf.

Part of the reason many of us are so passionate about weather is the good we can provide to our customers, whether it be the public, a business client, a student or our neighbors. Providing life-saving information about threatening weather can provide a great level of satisfaction to what otherwise could be just a job. This article stresses the many ways deaths due to lightning strikes can occur and, more importantly, highlights public safety messages to help prevent personal injury or death.

This article has been requested as part of a series of professional development articles highlighting important work presented orally or via poster at the 35th NWA Annual Meeting. I hope this piece challenges you to continually find ways to enhance what many of you are already doing—providing outstanding operational weather support to your customers.

Kenneth Carey
Chair, NWA Professional Development
Committee

36th NWA Annual Meeting
Oct. 15-20, 2011 - Birmingham, Alabama
Get Ready! Get Set! And Register Now!

*The End Game - From
Research and Technology
to Best Forecast and
Response*

THE ANNUAL MEETING OVERVIEW:

Saturday, Oct. 15: 9th Annual Golfing for Scholarships Outing

This NWA scholarship fundraising event will be held at Bent Brook Golf Club in Birmingham, the tee times start around 11:30 a.m. (or as late as 12:30). Cost is \$95 per person which includes golf, cart, lunch, prizes and donation to scholarship fund. Proceeds over costs will go to support the NWA scholarship program.

Sunday, Oct. 16: Broadcast Meteorology Workshop

This includes special presentations and other activities appropriate for the continuing education of weathercasters - it is open to all NWA members. Bring a DVD of a recent weathercast for discussion for the evening's DVD Swap. The 4th NWA Student Session provides guidance for students regarding how to best prepare themselves to enter the workplace. Includes a large student poster session and networking opportunities with broadcasters and other NWA members. Resume/DVD critique session included!

Monday-Thursday, Oct. 17 - 20: General Sessions

General Sessions will consist of both oral and poster sessions targeting the meeting theme, "The End Game - From Research and Technology to Best Forecast and Response." The annual Awards Luncheon will be held on Wednesday, Oct. 19.

Special Feature - Joint Meeting with 7th Annual GOES Users Conference: The GOES Users Meeting (GUC) will be in the Wynfrey Hotel Oct. 20-21 with joint NWA-GUC sessions and presentations scheduled for Thursday Oct. 20. NWA attendees are encouraged to attend the GUC sessions scheduled for Friday, Oct. 21. Visit http://directreadout.noaa.gov/GUC_VII for additional information.

EASIER TO KEEP THAT SEAL

In these times of uncertainty in our industry, the NWA Seal of Approval is becoming increasingly important in landing and keeping a job in Broadcast Meteorology. For that reason, the Broadcast Committee and Subcommittee on Standards and Ethics, with the approval of the NWA Council, has come up with a new policy to make it easier for Seal holders to keep their Seals and encourage timely recertification.

Seal holders must recertify every three years to keep their Seal of Approval, earning continuing education credits over that three-year period. Up until now, Seal holders who did not recertify by the end of the third year have had their Seals revoked and have had to wait five years before applying for the Seal again. As of June 1, 2011, that policy changed. There is now a four-month grace period for recertification. The deadline to recertify without late penalties is still Dec. 31, but Seal holders now have until April 30 to earn continuing education units (CEUs) and recertify before a Seal is revoked. Also, there is now no waiting period to reapply for the Seal if it is lost because of failure to recertify. In a nutshell, here is the new policy as outlined in the Broadcast Committee's Qualifications and Procedures recently approved by the NWA Council. To recertify, Seal holders must:



1. Earn CEUs, present documentation of them and a \$75 recertification fee by Dec. 31 of every third year (no change) or
2. By the end of February following Seal expiration, earn CEUs, present documentation and a \$150 recertification fee or
3. By the end of April following Seal expiration, earn CEUs, present documentation and a \$300 recertification fee. If a Seal holder does not recertify by May first following every third year, the Seal will be revoked, but the member may immediately reapply without a waiting period. However, the previous Seal holder will have to start the process from the beginning, taking a written exam and passing an on-air evaluation.

The Broadcast Committee hopes these new guidelines will encourage Seal holders to recertify on time. It also gives members a way to quickly re-earn the Seal if they lose it. The new Qualifications and Procedures and all the ways to earn CEUs are on the NWA website under the "Broadcaster's Seal" link, <http://www.nwas.org/SEAL/>.

Nick Walker
NWA Broadcast Committee Chair

Pre-register for the 36th NWA Annual Meeting by Sept. 30

The preregistration fee includes a preprint volume with program and abstracts. For the period of days registered, it also includes: admission to all oral presentations, poster sessions and exhibit sessions plus coffee/refreshment breaks. Full registration includes the Wednesday Awards Luncheon. Registration after the preregistration period will result in higher fees. Non-members will be eligible for member rates if they join now!

2011 PREREGISTRATION FEES: (through Sept. 30)

Sunday, Oct. 16: Broadcast Workshop and Tape Swap

8 a.m. – 11 p.m.

\$125 NWA members and presenters

\$55 students and retired members

\$175 for non-members

\$105 for non-member students and retired

Sunday, Oct. 16: Student Seminar and Resume

night session 1 p.m.-11 p.m.

\$35 NWA student members and presenters

\$55 for non-member students

Monday-Thursday, Oct. 17-20:

General Sessions/Activities

\$295 NWA members and presenters

\$130 students and retired members

\$350 for non-members

\$190 for non-member students and retired

Special One-Day Rates for period Oct. 17-20

\$125 NWA members and presenters

\$55 students and retired members

\$180 for non-members

\$90 for non-member students and retired

Special, All events Sunday-Thursday

\$385 NWA members

\$475 for non-members

Student Special, All events Sunday-Thursday

\$150 NWA members

\$225 for non-members

Program Committee, All events Sunday-Thursday

\$95 Program Committee members

PREREGISTRATION ONLINE by credit card (AmEx, Discover, MC or Visa):

Attending Broadcast workshop and/or most of the

General Session: www.nwa-registration.org/register.shtml

Attending Broadcast Workshop and only one or two days

of the General Session:

www.nwa-registration.org/registerbyday.shtml

PREREGISTRATION BY MAIL:

Complete this form and email it OR mail it with full payment of fees by Sept. 30, 2011 to: NWA Meeting, 228 West Millbrook Road, Raleigh NC 27609-4304 USA. Make payment to "NWA" in U.S. funds by a US bank check, money order or government/institution purchase order.

Name (Preferred for nametag): _____

Employer, School or other Affiliation (for nametag): _____

City/State (for nametag): _____

Telephone number and e-mail address: _____

Arrival Date at meeting: _____ Departure Date from meeting: _____

Pre-registration fees (see above): _____

Number of extra Luncheon tickets (\$40 each): _____

I am attending Oct. 17 Icebreaker - Monday evening (Free): _____

I am attending the 9th annual "Golfing for Scholarships" event, Sat., Oct 15th (\$95): _____

Total funds enclosed: _____

Circle all that apply:

NWA Member NWA Local Chapter Member NWA Broadcast Seal Holder Non-member Student Retired

Session Chair Presenter Program Committee Member Local Arrangements Committee Member

I will bring a DVD to the DVD Swap I'll attend the DVD Swap but not bring a DVD

I'm a student wishing to have broadcast DVD critiqued at Sunday Resume/DVD session

NWA Donors Help Us Get it Done

Following are the individuals who made donations of \$25 or greater to the NWA Sol Hirsch Education Fund and/or to the NWA General Fund for calendar year 2010. The NWA heartily thanks all members who have provided these extra funds to help advance the mission of the National Weather Association!

\$500+

Benjamin C. Hablutzel
Thomas E. Skilling III

\$250 - \$499

Dr. Elbert W. Friday Jr.
Troy Kimmel
Brian G. Smith

\$100 - \$249

C. Donald Ahrens
Robert Ballard
Bob Breck
Rodger A. Brown
Mary M. Cairns
Dr. Jose A. Colon
Larry Cosgrove
Dr. Kenneth C. Crawford
Walter H. Drag
Roger Edson
Renee R. Fair
Ted Fathauer
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George D. Phillips
Edward D. Priselac
Joseph T. Schaefer
Gerald F. Watson
Steven J. Weiss
John A. White III
Gregory E. Wilk

\$25 - \$99

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Wendy E. Abshire
Donald J. Aycock
Richard C. Bagby
William J. Bellis
Brian Billings
Warren Blier
Prof. Lance F. Bosart
S. Edward Boselly III
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Stephen F. Corfidi
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Lee G. Dickinson
Edward R. Flenz
Gregory Forrester
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William Eric McLin
Thomas C. Messner
Joe Moreno
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Michael P. Nelson
Craig & Cynthia Nelson
Marian D. Peleski
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Nick Siebold
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David C. Theophilus
John D. Thomas
Jeffrey S. Tongue
Dr. Jay Trobec
Daniel Valle
Eleanor Vallier-Talbot
Connor Vernon
Gary S. Wade
Jeff S. Waldstreicher
Brian R. Waranauskas
John G. Waunsch
Niel J. M. Wheeler
Donald E. Wuerch

If you'd like to help with a donation, please contact us. Our members' generosity allows us to achieve so much!



**The President's Message
by Patrick Market will
return in the July edition
of our newsletter.**

NWA Sponsored Annual Meetings/ Conferences

Aug. 4-6: 15th Annual High Plains Conference
Sponsored by the Wichita and High Plains Chapters of the American Meteorological Society (AMS)/NWA will be in Wichita, Kan. www.wichita-amsnwa.org

Oct. 15-20: 36th National Weather Association Annual Meeting
The 36th Annual Meeting will be held at the Wynfrey Hotel in Birmingham, Ala. See [pages 4 and 5](#).
www.nwas.org/meetings/nwa2011/

Oct. 20-21: 7th GOES Users' Conference
This conference will be held in the Wynfrey Hotel in Birmingham, Ala., with the first day being a joint meeting with the 36th Annual NWA Meeting.
www.nwas.org/meetings/nwa2011/ and
http://directreadout.noaa.gov/GUC_VII/

Feb. 27 – March 1, 2012: 2nd National Flood Workshop
Organized by Weather Research Center (private, non-profit education and research center) in Houston Texas. It will bring together agencies, emergency managers, academia and professionals from across the nation to encourage dialogue on various aspects of flooding. Visit www.nationalfloodworkshop.net, call Weather Research Center at (713) 539-3076 or email wrc@wxresearch.org.

Other Meetings & Conferences

Oct. 3 - 5: Ice and Freezing Fog Workshop
Environment Canada will host a workshop on ice and freezing fog in St. John's, Newfoundland, Canada.
http://collaboration.cmc.ec.gc.ca/science/arma/FRAM_2

Oct. 31 – Nov 2: 15th Great Divide Weather Workshop
NWS Offices in Great Falls and Missoula will host this workshop. This year's theme is "Sharing Innovative Science and Service".
www.wrh.noaa.gov/wrh/greatdivide/welcome.php

Jan. 22-26, 2012: 92nd Annual AMS Meeting
New Orleans, La. www.ametsoc.org/MEET/annual/

EXTREME from page 1

limited in temporal and spatial representation, it may be more recognizable to users as "weather" – and is also better suited for scientific analysis of important storm-scale physical processes. Linking climate-scale projected changes to realistic storm-scale physical processes may also add confidence to specific future climate projections.

In this study, warm season extreme precipitation events in the western U.S. are analyzed by contrasting simulations of extreme past events with extreme future events; the extreme event subsets are selected from regional climate projections supplied by NCAR's NARCCAP (North American Regional Climate Change Assessment Program) project. The high-resolution extreme event simulations are analyzed for changes in overall precipitation amount, intensity, spatial distribution, type (hail vs. rain) and the maximum terrain elevation at which extreme precipitation is found.

Through ongoing interaction with hydrologists, engineers,

water resources managers and facility operations personnel from USBR, as well as organizing group trips into the field to observe USBR facilities in person, this work strives to bridge the sometimes-daunting gap that often exists between research and operational communities. For this work, findings are focused on application-specific objectives related to dam safety, reservoir operations and early warning systems designed to monitor flood risk. Results are ultimately expected to be used in making decisions for dam safety design updates and repairs by providing improved estimation of future extreme rainfall amounts.

Learning how to communicate one's native science to those outside of the field can be humbling, but the importance of doing so is strongly motivating. The integration of weather research and water resources communities resulting from this study is a critical step toward ensuring that the best available decision-making information is used for both the current and future management of water resources.

The National Weather Association presents

The 9th annual *Scholarship Golf Outing*

Saturday, October 15, 2011

Bent Brook Golf Club
Birmingham, Alabama

Join fellow Annual Meeting attendees for an afternoon on the links, and help the NWA's Scholarship Fund.

\$95 per golfer

Includes golf fees, cart, lunch and donation.

Please contact Betsy Kling to sign up
betsykling@wkyc.com

DIGEST PHOTO CONTEST



With all of the dramatic weather we've witnessed this spring, we know some incredible photos have been taken by our members!

Submit your best weather photo for a chance to be on the cover of the National Weather Digest.

Send us your images by July 30 to be on our next Digest that is currently in production!! Email them to exdir@nwas.org or mail photos by CD to the NWA headquarters. (High resolution required—EPS, TIFF and JPG are all acceptable formats). The NWA Publication Committee judges and selects photos to be used on the Digests.

Dates **2** Remember

Aug. 4-6

15th Annual High Plains Conference, Wichita, Kan.

Oct. 15-20

36th National Weather Association Annual Meeting, Birmingham, Ala.

Oct. 20-21

7th GOES Users' Conference, Birmingham, Ala.

Oct. 31-Nov. 2

15th Great Divide Weather Workshop, Bozeman, Mont.

Jan. 22-26, 2012

92nd Annual AMS Meeting, New Orleans, La.

Feb. 27 – March 1, 2012

2nd National Flood Workshop, Houston, Texas

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Submit newsletter items directly to the NWA office or to nwanewsletter@nwas.org. Material received by the 25th will be considered for the next month's issue.

Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Printed Newsletter subscriptions are available for \$25 per year plus extra shipping costs outside U.S. Single copies are \$3. **Address, phone number, email and affiliation changes can now be made online: member.nwas.org.**

Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication, and service.

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