

J. Other Recognition



ESRL Physical Sciences Laboratory Review

David Skaggs Research Center
Boulder, Colorado
March 9-12, 2010

Other Forms of Recognition

Other forms of recognition from NOAA information customers such as decision makers in government, private industry, the media, education communities, and the public.

In support of the “America COMPETES Act” passed by Congress in 2007, ESRL conducts, develops, supports, promotes, and coordinates formal and informal educational activities at all levels to enhance public awareness and understanding of ocean, coastal, and atmospheric science and stewardship. With a concentration on atmospheric sciences and research, ESRL provides NOAA and the nation with systems that deliver global environmental information and forecast products ranging from short-term weather predictions to longer-term climate prediction and projections. The following summary provides just a glimpse of GSD and PSD’s important highlights and other forms of recognition ranging from customers in government, private industry, education, and international agencies to the general public as reflected in media coverage and a variety of outreach efforts.

Decision Makers in Government

GSD and PSD’s science, technology, and research have been featured in numerous submissions to NOAA -internal communications, which include the following:

	2006	2007	2008	2009	TOTAL
Executive Management Team Submissions	NA	30	17	10	57
OAR Hot Item Submissions	52	54	54	37	197
Online NOAA Stories (includes NOAA.gov, NOAA World, ESRL Quarterly Newsletter (established Fall (2008), etc.	11	15	37	36	99

Media

ESRL’s innovative research and technology has been covered extensively in the media over the years. Our researchers are sometimes interviewed for their expertise on weather, climate, and modeling. Our products and services are valued by users and featured in news stories and on documentaries worldwide including spots on National Geographic productions, public radio and television, local/national news coverage, and in newspapers and magazines.

Type of News	2006	2007	2008	2009	TOTAL
NOAA News Releases	7	4	14	10	35
External News Releases	16	12	26	19	73
Media Interviews and Newspaper/Magazine Stories	33	51	87	66	237
TV and Radio Stories	4	6	5	18	33
On-line Multimedia Stories	12	25	40	48	125

Recent News Coverage Highlights

SOS was installed in the Heureka Museum Vantaa, Finland in August 2009 and is featured here online and in a tv broadcast by Helisngen Sanomat (HS) titled “Tiedepallolla voidaan näyttää mahdollisen tsunamin eteneminen”. <http://www.hs.fi/videot/1135249000969?kategoria=Uutiset&sivu=1>

Beth Russell was also interviewed in a spot titled “Tiedekeskus Heureka on saanut taikapalon” showing off SOS for the same installation press conference but by YLE, a Swedish media agency: http://yle.fi/alueet/helsinki/helsinki/2009/09/tiedekeskus_heureka_on_saanut_taikapalon_972453.html

GSD-developed weather monitoring technology was featured in an online-multimedia spot “Balloons may improve hurricane forecasting” Steve Phillips (2009) WLOX ABC 13, Biloxi Gulfport Pascagoula: <http://www.wlox.com/Global/story.asp?S=10989714>

Smithsonian magazine *Air & Space* highlighted ESRL technology relating to unmanned aircraft and quoted ESRL scientist Marty Ralph in the article titled “Unmanned Traffic Jam”: <http://www.airspacemag.com/flight-today/Unmanned-Traffic-Jam.html?c=y&page=3>

Federal Computer Week featured Eric Hackathorn in their magazine as a 2009 “Federal 100 Winner.” Eric was awarded for building NOAA’s presence in the virtual world. (2009): <http://fcw.com/articles/2009/03/23/federal-100-hackathorn-noaa.aspx>

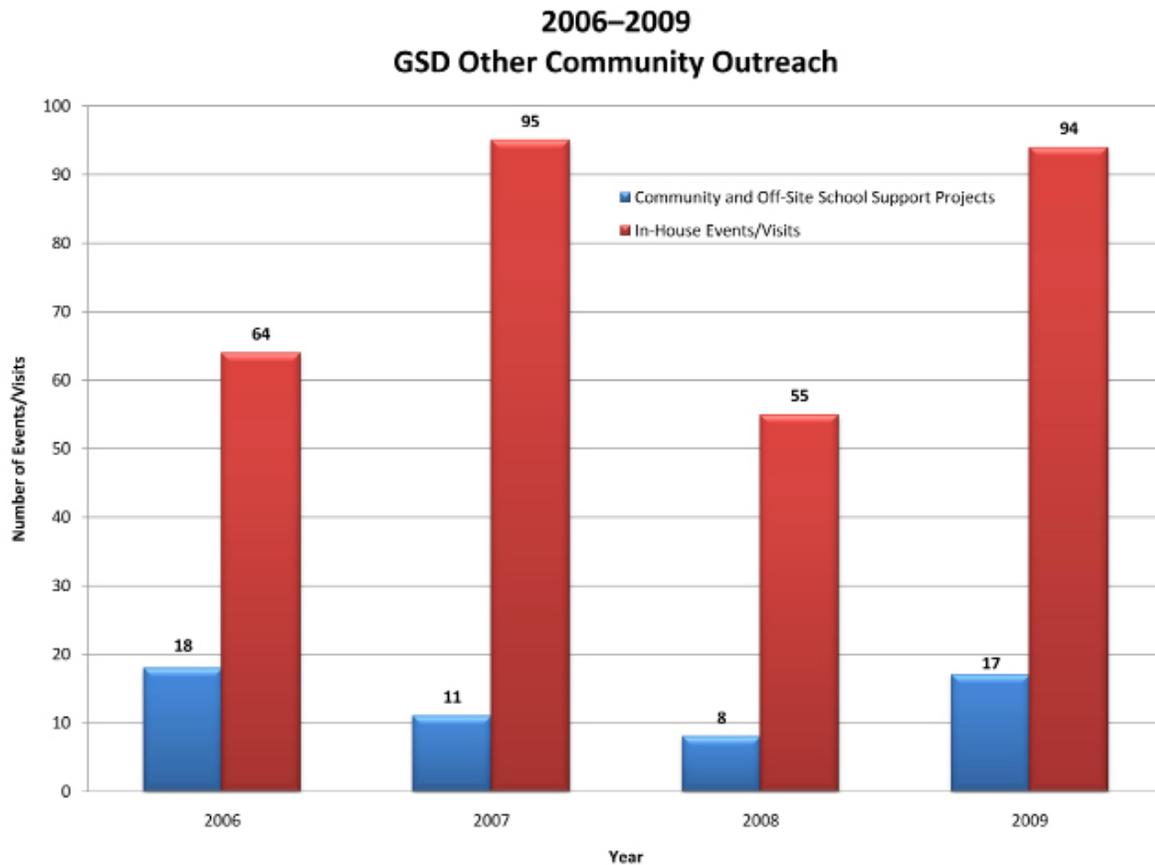
John McGinley, John Smart, Linda Wharton, and Dan Birkenheuer were mentioned in a *USA Today* article “Weather measurements help in air drops” featuring technology they developed and transferred (Randolph E. Schmid 2008): http://www.usatoday.com/news/washington/2008-09-29-2717916486_x.htm

Education Communities and the Public

NOAA Boulder reaches out to the public and schools in the area in an organized effort through the Boulder Outreach and Coordinating Council and the ESRL Outreach Team. Both ESRL’s Global Systems Division and Physical Sciences Division have strong representation in those groups that coordinate informal and formal educational activities on and off site with the goal of enhancing public awareness and understanding of the broad research conducted at our labs in Boulder. Since occupying the DSRC, these outreach groups have successfully attracted a rapidly

growing number of visitors ranging from 2nd graders to senior citizens. The general public has been on site in mass during several of the larger science open house events hosted over the years. In addition to the weekly lab tours open to the public, there is an organized effort to arrange customized local school tours.

The following chart reflects GSD's "other" community outreach projects for 2006-2009, because these in-house events/visits (red bars) do not incorporate the number of visits tracked for the weekly public tours or tours arranged for schools.



They do, however, cover visitors to the lab that are here for special tours, NOAA-Boulder open house events, or conferences. They are tracked as GSD outreach not only if they are hosted by GSD but by other NOAA-Boulder entities as well because each of those visitors sees SOS presentations, and SOS is administered by GSD. NOAA-Boulder hosts these visitors who come from business and industry, government agencies, community organizations, the press, universities, and international agencies. They attest to the breadth of NOAA's collaboration beyond the government agencies one would expect NOAA to have.

The blue bars in the above chart show GSD's outreach to the community off site and include things such as scientists visiting schools, community organizations and clubs, giving talks, presentations, and workshops, judging local and regional science fairs, participating in career fairs, and staffing booths at professional conferences. These efforts are carried out by GSD staff; sometimes in collaboration with other NOAA-Boulder staff and include participation in or visits to:

Boulder Rotary Club	Leukemia and Lymphoma Society
Rocky Mountain Dinosaur Resource Center	Citizen Weather Observer Program
Sailing Association of Intermountain Lakes	Regional Princess Cruise, Alaska
Eco Arts Program, Boulder, CO	Monument Academy
MESA Program, Longmont	Denver Council Valley BS District
Rocky Mountain Hang Gliding/Paragliding Ass.	Platte Middle School
Denver Museum of Nature and Science	North Elementary
Eisenhower Elementary	Eagle Crest Elementary
Regional “Robotics” Competition	Pioneer Elementary
Colorado Science and Engineering Science Fair	Girl Scouts of America
Roche Colorado Regional Science Fair	Wild Bear School
Peaceful Valley Scout Ranch, CO	Fireside Elementary Science Fair
Bear Creek Elementary	Sierra Club Inner City Outings
Boy Scouts of America	New Vista High School
Carleton College	University of Colorado
Ebert Elementary	National Ocean Science Bowl

ESRL Represented at Conferences

ESRL has always had a strong presence at the annual American Meteorological Society and American Geophysical Union conferences. There we help staff the NOAA booth, organize “Meet the Scientist” talks, and hand out materials about our science. We also participate regularly in the following conferences/events distributing educational materials, conducting presentations, workshops, demos, etc. and informing this broad range of the public about NOAA and how the agency affects their lives.

National Science Teachers Association	National Broadcasters Association
Science Days at the local 29th St. Mall	National Middle School Teachers National
Get Outdoors Day	Trout Unlimited
Boulder Expo	Colorado Science Convention
Sally Ride Festival	Women in Science

A sampling of the unique groups that have toured NOAA Boulder in the past four years and reflected in the red bars above are:

Science Team from the UK Met Office	US State Department Delegation
Korean Delegation	Chinese Meteorological Association
Boulder City and County Officials	Staffers for Colorado Commissioner
Women’s Aviation Group (international)	COTS Technology LLC
Colorado Rotary Club	Boy Scout Groups
Civil Aeronautics Administration, Taiwan	PBS Film Crew
Fulbright Alumni	Senior Citizens of Boulder and area

Discovery Channel Crew	Hewlett Packard
Congressional Staffers (CO)	Siberian Climate Observatory
Museum of Science & Industry (Chicago)	CU Science and Journalism Students
Weather Forecasters national group	NASA
“I have a dream” students	Sky-Skan
Viasala	Second Weather Squadron
FEMA	Minister British Foreign Office
E-Source	Liebert Corporation
National Geographic	U.S. Arctic Commission
Chinese Weather Bureau	Congressman Polis
Department of Energy	Department of Homeland Security
Japanese Meteorological Research Inst.	National Renewable Energy Lab
National Space Activities Commission of Argentina	Ministry of Science and Technology, Iraq
Honeywell Corporation	New Mexico MESA Students
American Association of Petroleum Geologists	Japanese Aerospace Exploration Agency

Web Presence and Social Networking

GSD and PSD boast vast collections of web sites dedicated to promoting research and education in the scientific community and the world. With over 42 million hits per year, our more than 30 sites provide information on tried-and-true research, as well as ground-breaking research and improvements on old methods. As a parallel, we communicate using tried-and-true methods in the form of text- and image-based web pages, but we’ve also made use of newer technologies on the web like social networking and video-based sites.

In the past five years, we’ve added further research sites in the realm of Unmanned Aircraft Systems (<http://UAS.noaa.gov>), NOAA’s climate attribution efforts (<http://www.esrl.noaa.gov/psd/csi/>), the study of hurricane winds (<http://WISDOM.noaa.gov>), Pacific western boundary current (<http://www.esrl.noaa.gov/psd/WBC>), improving hurricane intensity forecasts (<http://www.esrl.noaa.gov/psd/psd3/boundary/hurricanes/>), and the addition of a new, unique model, FIM (<http://FIM.noaa.gov>). NOAA’s Google Maps and Google Earth licenses are leading us to add graphics-rich, interactive images on sites like the TAF Statistical Tool (<http://rtvs-taf.noaa.gov>) and the demo display of ensemble model tropical cyclone tracks (<http://ruc.noaa.gov/tracks/>). We’ve also added a science-focused educational program, POET (<http://esrl.noaa.gov/gsd/outreach/education/poet/>) that integrates typical school subjects and shows how they relate to NOAA Science and “real life” practical application.

GSD houses two “power hitters” in the world of NOAA education and outreach. The products Science On a Sphere® and NOAA’s Island in the online virtual worlds Second Life and Scilands are technologies designed and developed at ESRL. They have successfully communicated NOAA’s broad research to millions of people worldwide. Both tools are growing in popularity and reach-

ing new, larger, and younger audiences as they tap into the social networking scene and popular sites such as Wikipedia, YouTube, Google Map, etc. The following lists more details on that web presence:

Google Map of SOS locations - 50,273 views since posting on the SOS website in July. The main link to the map is from the SOS homepage: <http://sos.noaa.gov/>

SOS Wikipedia page (created by NASA and updated by NOAA) http://en.wikipedia.org/wiki/Science_on_a_Sphere

Science On a Sphere has a YouTube channel with movies of datasets <http://www.youtube.com/user/scienceonasphere> There are 18 videos posted to the page: the most popular is the *Puerto Rico Tsunami Simulation* with 9723 views 80 subscribers to the SOS Channel

The SOS Fan Page on Facebook was just created in early September 2009 and already has 106 fans <http://www.facebook.com/scienceonasphere>

GSD uses Yahoo Forum - for members of the SOS Collaborative Network (by invitation only) 144 Members and 398 messages posted

ESRL has initiated a new way of conducting remote lectures with SOS called “SphereCasting”

SciLands is an area within the virtual world “Second Life” devoted to science and technology. NOAA was instrumental in setting the stage for other federal science organizations to become members of Scilands: <http://en.wikipedia.org/wiki/SciLands>.

Scilands offers on-line courses, some of which were developed and are taught by NOAA’s Eric Hackathorn: <http://classroom.scilands.org/>

Scilands presence on Flickr: <http://www.flickr.com/groups/scilands/>

YouTube video on Federal Consortium for Virtual Worlds: <http://www.youtube.com/scilands>

Scilands Twitter presence on the web: <http://twitter.com/scilands>

Scilands Facebook: <http://www.facebook.com/group.php?gid=61135699787>

GSD and PSD continually work to present a fresh, updated look to the public, staying abreast of the newest web trends and technologies to attract talented youth to our science and inform the public of how our research affects their lives.

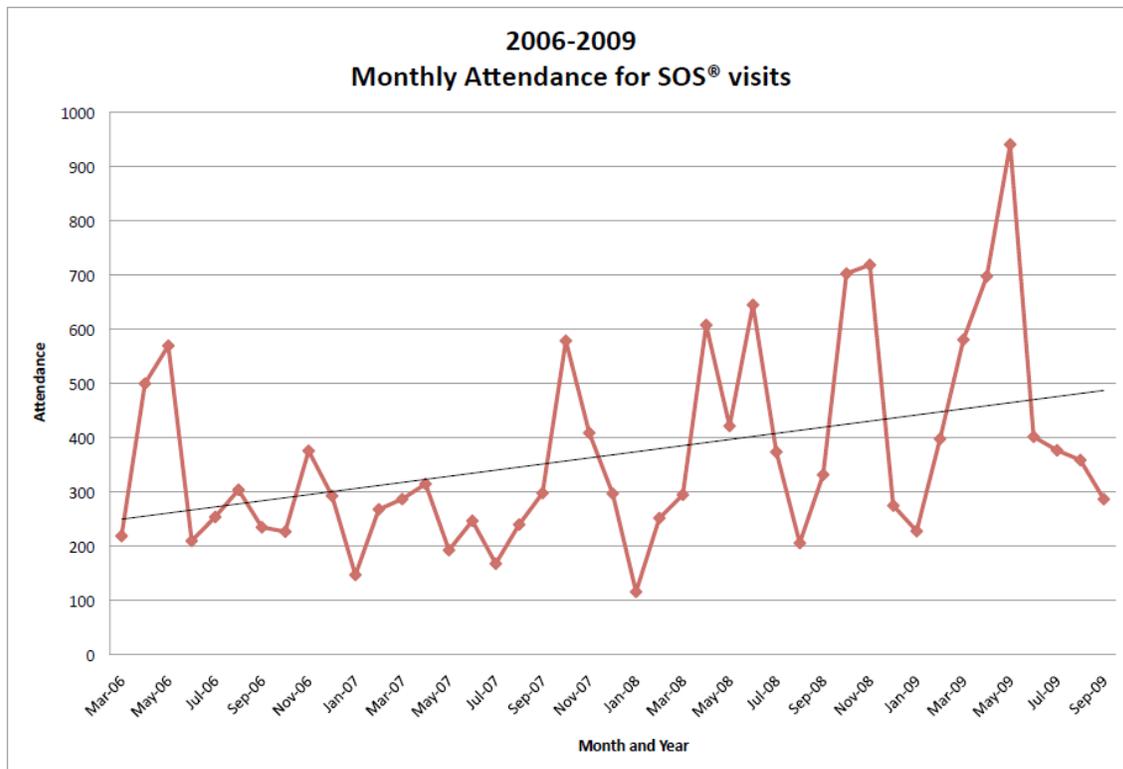
Science On a Sphere®

Science On a Sphere® is a gleaming 6-foot-diameter, carbon-fiber globe invented (2001) by ESRL’s Dr. Alexander MacDonald to educate, inspire, and wow any onlooker with the science it presents. This spherical movie screen was patented (2005) for its extraordinary multiyear design and software development accomplished by NOAA’s Forecast Systems Laboratory (now the Global Systems Division). It is a visualization tool that provides very high impact for every educational exhibit it enhances. Dr. John Gerling, President of the International Museum of Art and Science Board summed up SOS’s educational potential when he said, “Many people literally drop their jaw when they first see it. The stunning beauty and versatility impress everyone and it can display in-

formation of great contemporary interest. When I see it display the blue marble, I'm gripped with a profound sense of our Earth as our only home in a hostile universe."

Now in over 46 locations worldwide with four future installations planned, SOS informs millions of people daily about the fragility of our planet with the most current and cutting-edge science available.

NOAA Boulder is the home of SOS and as such houses "Planet Theater", our site's most popular educational stop. SOS is used extensively in our organized outreach efforts and provides a spec-



tacular finale for nearly every visitor to the David Skaggs Research Center.

The following chart displays not only SOS's popularity, but also how our outreach is growing in general as the numbers reflect nearly every announced visitor to NOAA Boulder.

Kudos for Products and Services

ESRL is noted for weather and climate process studies and the development of innovative tools and products ranging from environmental information systems, observing systems, model and software development and improvement, to advanced computing. The variety of our user types, comprised of government, private industry, military, education, and general public sectors, speaks to the extent of our research. The following statements are a testimony to the quality and value of GSD and PSD's work that supports NOAA's mission and goals.

GSD Kudos

For Better Forecasts

“The GFE provided a number of important operational benefits to support the provision of fire weather forecasts during this event.”— Jon Gill (Bureau of Meteorology Victorian Regional Forecast Centre, Australia); about the Graphical Forecast Editor’s (GFE) performance during devastating bushfires that struck central and eastern Victoria in February 2009.

“Firstly, you gave us a terrific system to start with . . . Secondly, your help in further developing the GFE to our requirements has been superb.”—Jon Gill (Bureau of Meteorology Victorian Regional Forecast Centre, Australia).

“No four people have had a bigger role in the success of the National Weather Service modernization than you. Your dedication, knowledge, hard work, and long hours have made it possible to stand where we do today. More than that, though, you have set a bar by which all other support and development organizations will be judged by the field.”— Matt Davis (Information Technology Officer, LaCrosse, WI) (September 2006) about the GFE Team.

“You should be proud of your accomplishments. Without you, life at the Weather Forecast Office would be completely different, and definitely more frustrating. Your support helped enable the focal points to ease the staff through those big changes in the early days of ICWF/IFPS/GFE. You are greatly admired for the dedication and attention you gave to the field. Thank you for your creativity and support. I look forward to the results of your prototype work.”— Anita Silverman (GFE Focal Point, Blacksburg, VA) (Oct. 2006) about the GFE Team.

“I think it’s rare to find a group of folks that is so dedicated to their mission like you all have been. From answering email at home, at nights, weekends, and even holidays to logging into our system to help troubleshoot a very difficult problem, you have all been there through thick and thin. It’s been a privilege to work with all of you and I hope we get to work with you again soon.”— Lance Bucklew (Information Technology Officer, Ft. Worth, TX) (Sept. 2006) about Graphical Forecast Editor Team.

“GPS-Met provides critical data to support environmental modeling and local forecast warning and using GPS-Met observations in the RUC has deemed critical for detecting changes in moisture in severe weather situations. —Dr. Richard Anthes (President of the University Corporation for Atmospheric Research) in a letter of support for GPS-Met in NOAA to Vice-Admiral Conrad C. Lautenbacher Jr.

“Observations from GPS-Met provide a valuable new source of information on atmospheric water vapour for nowcasting, numerical weather prediction, and climate applications.”—Dr. Michael Béland (Director General, Atmospheric Science and Technology Directorate) in a letter of support for GPS-Met in NOAA to Vice-Admiral Conrad C. Lautenbacher Jr.

“The NOAA team’s persistence and creativity in developing this new GPS-based technology can improve weather forecasts across the nation.” —Retired Navy Vice Admiral Conrad C. Lautenbacher Jr., Ph.D. (Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator). He continued, “The additional benefits of this new tool for calibrat-

ing Earth-observing satellites and reliably monitoring global climate may extend far into the future.”

“The FSL Meteorological Assimilation Data Ingest System (MADIS) (mesonet) project has been critically important...where mesoscale weather is the rule, but until MADIS, only synoptic scale surface data was available.”— Pat Welsh (NWS Science and Operations Officer) about Meteorological Assimilation Data Ingest System (MADIS).

“Next to the WSR-88D, AWIPS, and WES (Weather Event Simulator), this (MADIS mesonet data) is one of the greatest gifts associated with modern day weather forecasting.”—Jeffery Medlin (NWS Science and Operations Officer).

“The MADIS system has been very valuable in AWS’s efforts to not only monitor the real-time data quality of its network of weather stations but also to improve the quality of the data. AWS operates a nationwide network of approximately 6000 weather stations located primarily in urban areas. Prior to inclusion in MADIS, we had a range of relatively simple data control procedures but nothing matching the sophistication or scope of the MADIS system.”— Dr. Jan F. Dutton (Director of Weather Services, AWS Convergence Technologies, Inc.)

“The MADIS Project is an exemplary model for a successful public-private partnership that ultimately benefits businesses as well as providing potential widespread societal benefits.”—Ron Sznajder (Vice President for Business Development DTN Meteoroligix Corporation).

“Thanks for your and your team’s “above and beyond” performance in getting these important data flowing again.”—Jack Hayes (NWS Assistant Administrator) about the MADIS team after they assisted the NWS in reviving the data flow from the NOAA Profiler Network.

“I just wanted to let you know that I find your Skew T Plot web page very useful. I have been using it for years to figure out what the soaring conditions will be like at specific locations for both full scale glider flying and small DLG glider flying. Your data works very well for both activities. I especially like being able to figure out the conditions ahead of time ... I really appreciate your efforts. I hope your web page will be available for many more years. Keep up the good work.”—Email from Norm Page.

“I just wanted to thank you for this excellent site:

<http://www-frd.fsl.noaa.gov/mab/soundings/java/>

I use it a lot in teaching & research. I appreciate the adding of GFS & NAM(Dev1320) model data, for longer-term prognostic soundings.”—Email from Bart Geerts (Professor, Department of Atmospheric Science University of Wyoming) Laramie WY

“Just a quick note to tell you how cool the skewt java page is. I’ve used it off and on for looking at RUC and ACARS soundings for the past few years. The features and loading times are excellent... I hope you continue to put out great apps like this one!”— Greg Carbin (Meteorologist, NWS Storm Prediction Center) Norman, OK.

“Thanks for all you do. Great stuff and extremely useful for my private clients.” —Roger Hill (Weathering Heights Consulting) Worcester , VT 05682.

“I have used your sounding web site for many years to forecast thermal and wave soaring conditions. It continues to be one of the key sources of data for predicting good days. In fact, in 2008 it was invaluable in predicting the soaring conditions that helped me become the 2008 World Champion in the OLC Soaring Contest.”—Jim Payne.

“Thanks for keeping the site going - I still use it every day that I go gliding to predict cloudbase and thermal strength. It is typically accurate within a couple of hundred feet.”—Dave Springfield.

“Thank you, everything is working fine on this end. Having used this data source for many years, I can tell you that it’s proven its worth many times over. I’ve even used it to pull GFS data for Iraq and a few other countries in the past. Again, thank you for providing such a useful tool.” - Gary Rann (Air Force Forecasting Office) about RAOB online data.

For The Nation’s Safety

“The product gave a visual reference that words alone sometimes do not capture. The common situational awareness of the product among the Traffic Management and Center Weather Service Units gave clear indications as to the serious impact thunderstorms would have on the ZFW ARTCC airspace during the afternoon and evening hours.”—Tom Amis (Meteorologist-In-Charge, Center Weather Service Unit Fort Worth Air Route Traffic Control Center) about the Tactical Decision Aid (TDA).

“He (GSD’s William R. Moninger) accomplished a major achievement with his world-leading web site for the display of Aircraft Meteorological Data Relay (AMDAR) data and the dedicated US TAMDAR system and for providing extensive supporting documentation and other information. At the same time, he was graceful in accepting constructive suggestions on improvements to the web site. This site has been an outstanding success as far as the global AMDAR community is concerned. It was invaluable for me personally while in my WMO role supporting countries developing new AMDAR programs and to other countries who wanted to use the data operationally but who did not have the means to display it themselves.”—J. J. Strickland (WMO AMDAR Technical Coordinator).

“This one-stop site has become a popular resource for local, state, and federal officials and the media. My thanks to the VACT development team . . .”—Alaska Volcano Observatory scientist from USGS after 2006 Mt. Augustine eruption about the Volcanic Ash Collaboration Tool, developed by GSD and used in real time to evaluate the location, extent, and movement of ash.

“The Geo-Targeted Alerting System (GTAS) project is really exciting as I was able to see it first hand at the installation sites at Dallas Emergency Operation Center and the Ft. Worth Weather Forecast Office. The system works, the customers like it, and it’s an outstanding example of government teamwork in action.”—Dean Rychlik (FEMA/GTAS Program Director).

“The FX-Net system is the ‘backbone’ of fire weather forecasting in the field.”— Rob Balfour (National Weather Service (NWS) Incident Meteorologist (IMETS)). Mr. Balfour made this statement while in the field in California supporting the fire management team at the Padua,

Old, and Grand Prix fires. He also stated that the FX-Net system is critical for use as the, “main thing for model guidance and ‘right-now’ weather information”. He noted that he uses the NOAA/FSL- developed Rapid Update Cycle model (RUC) for hourly soundings to check on wind and atmospheric moisture conditions. Both parameters are constantly changing and critical when providing structure protection guidance to the fighters on the fire line.

“FX-Net has proved to be a critical component for the fire management team struggling to save lives and control the fires in California over the past week”— NWS Incident Meteorologist about the October 2007 California fires.

“The FX-Net system is heavily used; to the IMETS, it’s the most critical system they have. The real-time wind and radar data display capability the FX-Net system gives the forecasters is incredibly critical to the fire management team’s efforts to get fire fighters in the right position on the fire line and in moving people out of harm’s way. FX-Net has had a huge impact on improving firefighter safety.”—Rich Douglas (Chief, Meteorological Services Division/ NWS Western Region HQTRs in Salt Lake City, Utah) also about the 2007 California fires.

“MADIS data has proved incredibly helpful in increasing overall situational awareness . . . with major wind and winter storm events, along with a severe weather event.”—Brian Crumpler (GIS Manager, Virginia Department of Emergency Management Preparedness Division).

Outreach

“Since we met last February, it has been a great success; the first Spanish language SOS installation in Mexico. . . Thank you very much for your support and collaboration, for the development and enhancement of Global Climate Education and Monitoring Systems.”— Carols Jose Diaz Leal (International Liaison Climate Institute, Mexico City) about the SOS installation there.

“If there’s a better technology for explaining science to the interested public, I can’t think of it.”— Chris Mooney (science writer and author) wrote this blog entry about SphereCasting on SOS at the National Weather Center in Norman, OK.

“SOS is a very high impact educational exhibit. Many people literally drop their jaw when they first see it. The stunning beauty and versatility impress everyone and it can display information of great contemporary interest. When I see it display the blue marble I’m gripped with a profound sense of our Earth as our only home in a hostile universe.” — Dr. John Gerling (President of the International Museum of Art and Science Board).

“The Sphere surpassed expectations. The resolution, color, brightness, and its seamlessness were all excellent.”— Bob Feingold (Chair and President of the New Bedford Oceanarium) about the SOS installation at the Oceanarium.

“The exhibit brings both the beauty and fragility of our environment to life. Our mission is to inspire our visitors and View from Space will certainly do that.”—Greg Brown (Vice President of Operations and Technology at the Tech Museum).

“Dear NOAA’s Science on a Sphere Team, Thank you all for making the US Center at COP-15 such a resounding success and for showcasing NOAA in such a prominent and professional

way! The Bella Center was abuzz with kudos for you and the US Center. It really was ‘an oasis of calm and progress,’ to quote USA Today. You have made all of us very proud. I appreciate what you did to make my visit a success. I saw some very good press coverage and I heard glowing praise for your efforts.”—Dr. Jane Lubchenco, NOAA Administrator and Undersecretary of Commerce after her visit to the COP 15 SOS exhibit in Copenhagen, December 2009.

“NOAA has found ways to reach new audiences in profound and meaningful ways.”—Linden Lab about NOAA’s Virtual World in Second Life.

“For sure, one of the best ideas at the exhibition this year was NOAA’s bold move to create a virtual island on Second Life.”—Graeme Stemp-Morlock (Reporter) as he blogged from the annual meeting of the American Association for the Advancement of Science (AAAS) in San Francisco.

“Just thought you should know — today my class made a 32-meter long butcher paper pie slice of the Earth and as the kids were looking at it trying to get it, I took out my beautiful Woolly Magma and we talked about it and the light bulbs went on —Eureka! Thanks . . . you’re doing good things.”— Linda Sciaroni (Teacher in Lihue, Hawaii) about outreach product called Woolly Magma, designed and developed in GSD.

“Thank you so much for the kits and the great project! My hands were so soapy and the kids were having so much fun, I almost forgot to take pictures! I posted some pictures on my website - it was a very exciting project - I may also try to do this with more parents and students at Challenge Night at the end of the Month. Is there any way to order more kits? Thanks again!”— Grace Finn (Teacher, Field-Stevenson School) Forest Park, IL- <http://sites.google.com/site/challengeclass>

“Thank you for the books about Hurricane Katrina. I like in The book the words, That spiral. The book was so interesting! I had to read it over and over agin; the pichers were fabulous, the book was rilly interesting. How did you do the spiral?”—Cesar, and Melisa of York International School (Second Graders) about Hurricane Katrina Book for which the design and layout and processing was done in ESRL.

PSD Kudos

“I wish you to convey my thanks to NOAA for your excellent web page that provides monthly seasonal climate composites...It is another outstanding example of leadership by Americans in geophysical research and information.” (Regarding PSD web page: <http://www.esrl.noaa.gov/psd/cgi-bin/data/composites/printpage.pl>.) — Bill Crawford Co-Chair, State of the Ocean Reporting, Pacific Region; Head, State of the Ocean Reporting Centre of Expertise, Fisheries and Oceans Canada; and President, Canadian Meteorological and Oceanographic Society.

“Let me first say that I love the monthly/seasonal composite climate web site. I use it frequently to create visualizations of climate products for various worldwide locations. Our entire class used it extensively while taking Modern Climatology at the Naval Post Graduate School. I’m always spreading the word about the usefulness of the site...I just wanted to say thanks for the site.” — Dan Wunder

“I’ve received support from you in the past and just wanted to let you know I am still using your handy web site...Being able to compute and display mean and anomaly atmospheric charts on the fly helps my understanding for weather in my area. Keep up the good work and a BIG thank you!” — Valerie Mills, Forecaster, WFO Boise ID.

“It’s easy to conceive of a situation where that data could be very valuable, especially this year, and with the weather service in Seattle. And in the end we want to be able to say we did everything we could. But if before we were calling for 2-4 inches of rain and this lets us refine that to say 2-3 inches ... even removing that bit of uncertainty will be helpful.” (Regarding NWS-OAR observing systems in/around Green River Valley.) — Brad Colman, Meteorologist in Charge, Seattle, WA Weather Forecast Office.

“(PSD data analysis tools) are a prime example of how NOAA has many great things about them! This page is a shining example.” — Joe Bastardi, Accuweather.

“Many thanks for your prompt reply and effective action. The NCEP resources, and particularly the access that is provided via the web, are invaluable. I am currently using them for research purposes...I also use these resources extensively in my teaching at the Australian National University...I cannot think of a better resource for giving students hands-on experience with climate data to increase their understanding of climate system dynamics.” — Janette Lindsay, Associate Professor (Climatology), College of Science, The Australian National University.

“I believe these instruments could have a major impact on the Corps of Engineers’ ability to keep the water in the banks.” (Regarding atmospheric river observatories deployed by OAR in Washington State.) — Hillman Mitchell, Tukwila, WA Emergency-Management Coordinator.

“The Goleta profiler fills a critical gap in wind coverage south of the Santa Ynez Range. Specifically, this is one of the few sites that can tell us whether or not a barrier jet has formed and what strength it carries--key information for QPF forecasting.” (Regarding a ¼-scale 449 MHz wind profiler deployed at the Santa Barbara Airport.) — Dave Danielson, Science and Operations Officer, L.A./Oxnard, CA Weather Forecast Office

“These interactions have allowed Aurora to consider critical new information in our water resources planning. In fact, it is largely due to the great initiative and foresight of WWA that entities such as Denver Water, Colorado Springs Utilities, and the Cities of Boulder and Fort Collins recently joined with Aurora Water to initiate and collaborate in a climate change study through Water Research Foundation. The result -the Joint Front Range Climate Change Vulnerability Study-is expected to be completed in late 2009.” — Aurora Water Mark Pifher, Director

“WWA plays a critical role in helping us better understand potential climatic changes which leads to the development of sound policy changes...WWA is unique due to their ability to provide detailed scientific analysis in an easily digestible manner that engages and informs decision makers.” — Colorado Water Conservation Board (CWCB) Jennifer Gimbel, Executive Director.