E-Newsletter
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Western States Seismic
Policy Council
801 K Street, Suite 1436
Sacramento, CA 95814
Phone: 916-444-6816
Fax: 916- 444-8077
Email: *wsspc@wsspc.org*
Website: *www.wsspc.org*

WSSPC HEADLINE NEWS

WSSPC 2010 Awards in Excellence Winners Announced
WSSPC is pleased to announce the winners of the 2010 WSSPC Awards in Excellence, decided by the WSSPC Board at the November 18, 2009 Board meeting. Winners will be recognized and receive their award at the 2010 WSSPC Annual Meeting, held with the Natural Hazards Center Workshop at the Banquet, Friday, July 9, 2010. The winners are listed by category below.

Congratulations to the 2010 WSSPC Awards in Excellence winners, and thank you to everyone who submitted an award nomination.

Overall Award in Excellence for General Outreach to the Public and Non-Profit Agency Efforts
Living on the Faultline and Along the Coast
Humboldt County Chapter of American Red Cross, Judy Warren

"We are deeply honored to be the recipient of the 2010 Overall WSSPC Award in Excellence", said Judy Warren, the Humboldt County Red Cross volunteer who created the course. "The genesis of the current *Living on the Faultline and Along the Coast* course is based on some 30 years experience as a Red Cross disaster services instructor. When I first volunteered with the American Red Cross, I thought that I was well-prepared for the inevitable earthquakes of the San Francisco Bay Area. However, when the 1989 Loma Prieta Earthquake occurred, all my preconceptions of being well-prepared changed. What I learned through personal experience has allowed me to create and teach a more pertinent class."

Award Category: Research
Quaternary Faults in Nevada - Map 167
Nevada Bureau of Mines and Geology, Craig dePolo, Research Geologist

Award Category: Legislation
Oregon Senate Bill 5505
Oregon State Legislature, Peter Courtney, Senate President

For more information on our 2010 Awards in Excellence winners and the press release, visit our website at *http://wsspc.org/Awards/index.html*

Save the Date!
WSSPC's 2010 Annual Meeting will be held with the Natural Hazards Center Workshop in Broomfield, Colorado at the Omni Interlocken Resort **July 9-13, 2010**. The Awards in Excellence banquet and WSSPC Committee, Board and Annual Business Meetings will be held July 9. WSSPC has proposed an Earthquake Early Warning (EEW) session for Saturday, July 10. Natural Hazards Center field trips will be held Saturday afternoon. Information on the program will be released as it becomes available. Be sure to check the WSSPC website at *www.wsspc.org* for conference updates.

WSSPC Policy Recommendation Final Comment Period
Draft 2010 WSSPC Policy Recommendations will be posted to the WSSPC website for comments from April 1, 2010-June 1, 2010, at which time the comment period will be closed. The Draft 2010 Policy Recommendations will be voted upon at the 2010 WSSPC Annual Business Meeting, July 9, 2010 in Broomfield, Colorado.

WSSPC NEWS

Golden Guardian Exercise Receives SAG Award
California's Golden Guardian Exercise received a Special Achievement in GIS (SAG) Award at the 2009 ESRI International User Conference in San Diego, California. The exercise received this honor for its vision, leadership, and innovative use of ESRI's GIS technology. The exercise was selected from more than 300,000 organizations worldwide and recognized for making extraordinary contributions to our global society.

The Golden Guardian Exercise was the largest multi-agency emergency response effort in the history of the United States, and was a result of the collaboration of the State of California Resources Agency, the State of California Emergency Management Agency, the County of Los Angeles, and the County of San Diego Office of Emergency Services.

For the full press release, visit
http://events.esri.com/uc/2009/sag/list/?fa=Press&SID=965

Guam Disaster Awareness
Guam Homeland Security has posted disaster awareness audio clips to their website. To view the list of available audio clips, visit
http://www.guamhs.org/main/?pg=media&sub=media

Montana to Upgrade Three Seismic Stations
Montana Tech, where the Montana Bureau of Mines and Geology is housed, will receive $50,000 in federal funds to upgrade three of its seismic monitoring stations in Montana. The new seismographs will replace older models that date back to the 1950's.

To read the full article, visit
http://mtstandard.com/articles/2009/10/07/area/hjjaijjdhgibgb.txt

Seismograph in Idaho High School
A grant from the National Science Foundation (NSF) sponsored the Incorporated Research Institutions for Seismology's (IRIS) Seismographs in Schools Program, providing a seismograph to Jerome High School in Jerome, Idaho, and training JHS teacher Steve Bruns. Through the new Idaho Education Network (IEN), students at two other high schools were able to observe the seismograph lesson delivered by Burns at JHS.

"Steve Burns brought technology and practical science to his classroom through the Idaho Educational Network. His initiative and effort will directly improve awareness of Idaho's seismic hazard," said Col. Bill Shawver, Director of the Idaho Bureau of Homeland Security. "By working together with our science teachers and groups like the Idaho Geological Survey we can make sure all Idahoans understand our risk from earthquakes and what can be done to prepare for them."

Roof Condensation Repairs During Seismic Retrofits
Submitted by Steven Saunders, Saunders Construction, Inc. "Commercial Seismic Retrofit"

Saunders Construction, Inc. "Commercial Seismic Retrofit", a 2009 WSSPC Affiliate member, in the course of their projects seismically retrofitting concrete tilt-up buildings with typical panelized roof systems, has frequently encountered roof condensation. Roof condensation is moisture that develops at the roof ceiling area and is trapped by foil insulation. If left untreated, it may damage the entire roof structure. Saunders recommends that if roof condensation is identified, prior to seismic retrofit work being performed, the engineer can include condensation repairs on the plans and roof repairs and seismic work can proceed simultaneously.

Saunders has a more detailed description of the problem, including what to look for, on their website at: *www.saundersseismic.com.*

WSSPC appreciates the support Affiliate members like Saunders have provided to us in 2009.

Other 2009 Affiliate members are:
Clark County, Nevada, Development Services
Degenkolb Engineers, Inc.
Earthquake Engineering Research Institute (EERI)
Kodiak Island Borough
State Farm Insurance Companies
TOLCO
U.S. Gypsum Company

WSSPC Member News

- Pete McDonough, Utah Seismic Safety Commission, Joined the WSSPC Board for a two- year term (2009-2011).
- Bob Swenson, Alaska state geologist and WSSPC Board member, has been appointed as the new in-state gas line project manager for the state of Alaska.
- Rob Jackson of URS Corporation has replaced Bob Kirkham as the Colorado Earthquake Hazard Mitigation Council liaison to WSSPC.
- Roger Evans, plans examiner for the Utah League of Cities and Town, is the new Chair of the Utah Seismic Safety Council.

Nevada Bureau of Mines and Geology on National Geographic
Criag dePolo, Research Geologist with the Nevada Bureau of Mines and Geology, appeared on a November 5, 2009 National Geographic special to discuss the Mogul/Somersett earthquake swarm of 2008.

For clips from this segment, visit
http://channel.nationalgeographic.com/series/naked-science/4232/Overview#tab-Videos/07382_00

John Price Receives Ian Campbell Medal
Jonathan Price, director of the Nevada Bureau of Mines and Geology, has been named the 28th recipient of the Medal in honor of Ian Campbell for Superlative Service to the Geosciences. Price has earned many awards and distinctions including a WSSPC Leadership Award (2003); the WSSPC Award in Excellence for Mitigation Efforts for the Mitigation of Fault Related Hazards (2002); the John T. Galey Sr. Memorial Public Service Award from the American Institute of Professional Geologists (1999); and the AGI Explorer Award (1995). Price was also named a Fellow of both the Geological Society of America and the Society of Economic Geologists.

http://unr.edu/nevadanews/templates/details.aspx?articleid=5210&zoneid

Ron Lynn Elected Board President of ICC
Ronald Lynn, Director and Building Official for the Clark County, Nevada, Department of Development Services, was elected President of the International Code Council Board of Directors during the 2009 Code Council Annual Business Meeting in Baltimore, Maryland. Lynn previously served as Vice President and has been a member of the Code Council Board since 2004. He also serves on the International Accreditation Service Board of Directors and acts as a liaison between the two Boards.

For the full write-up, visit
http://media.iccsafe.org/news/eNews/2009v6n17/officers.html

US and CANADA NEWS

House Advances NEHRP Bill
From the House of Representatives Committee on Science and Technology Website:
http://science.house.gov/press/PRArticle.aspx?NewsID=2657

On October 21, 2009 the House Committee on Science and Technology approved H.R. 3820, *The Natural Hazards Risk Reduction Act of 2009*, which reauthorizes the National Earthquake Hazards Reduction Program and the National Windstorm Impact Reduction Program. The following is from the Committee's press release of the same date.

"*The Natural Hazards Risk Reduction Act* reauthorizes two important programs that support research, development, and technology transfer activities to mitigate against the potential damage caused by earthquakes and severe windstorms," said Chairman Gordon, who is also a cosponsor of the legislation. "The impact of natural hazards on communities can be devastating. In the past two years in my district in Middle Tennessee, tornadoes have killed 24 people and injured over 100. Making households, businesses, and communities resistant to these forces of nature can save lives and billions of dollars."

"Today we are not only addressing the hazard that earthquakes and windstorms present, but also establishing a framework to begin a multi-hazards approach to mitigating natural disasters," stated bill author and Technology and Innovation Subcommittee Chairman Wu. "By finding commonalities among the research activities for different hazards and identifying ways to coordinate efforts, we can spend our research dollars more effectively and better protect the public's safety. In addition, this legislation addresses the biggest impediment to lessening damage from natural disasters, which is encouraging people to actually adopt mitigation measures. Science and engineering research is important, but it is the push to implement better building practices that will save lives and money."

The National Earthquake Hazards Reduction Program, known as NEHRP, has been responsible for the development of seismic codes and standards to enable buildings and other infrastructure to withstand earthquakes. This reauthorization addresses some of the biggest challenges in earthquake mitigation: developing methods to retrofit existing structures, secure infrastructure, and, most importantly, convincing people in earthquake-prone areas to invest in preparedness and mitigation measures.

The Senate has not yet scheduled a hearing for NEHRP's reauthorization.

Two Named to Earthquake Advisory Board
John Hooper, director of Earthquake Engineering of Magnusson Klemencic Associates, Seattle, Washington, and Susan Tubbesing, executive director of the Earthquake Engineering Research Institute, have been named to serve on the Advisory Committee on Earthquake Hazards Reduction (ACEHR) of NEHRP by Patrick Gallagher, then deputy director of the National Institute of Standards and Technology (NIST) and acting NEHRP Interagency Coordinating Committee chair. They join a group of 13 previously appointed academic, industry and government experts on the ACEHR.

For the full write-up, visit
www.nist.gov/public_affairs/techbeat/tb2009_0922.htm#nehrp

Senate Confirms Gallagher as NIST Director
The U.S. Senate confirmed Dr. Patrick D. Gallagher by unanimous consent as the 14th director of the National Institute of Standards and Technology (NIST). Gallagher has worked at NIST since 1993 as a scientist, laboratory director and deputy director. Since September, 2008, he has carried out the functions of director and was nominated to his post by President Obama September 10, 2009.

For the full press release, visit
www.nist.gov/public_affairs/techbeat/tb2009_1117.htm#gallagher

Serino New FEMA Deputy Administrator
The Department of Homeland Security's Federal Emergency Management Agency (FEMA) Administrator, Craig Fugate, swore in Richard Serino as FEMA Deputy Administrator. Prior to joining FEMA, Serino served as Chief of Emergency Medical Services and Assistant Director for the Boston Public Health Commission. He brings 35 years of state and local emergency management and emergency medical services experience to the position.

For the full press release, visit
www.fema.gov/news/newsrelease.fema?id=49816

New USGS Director
Dr. Marcia McNutt has joined the U.S. Geological Survey as the first woman director. Dr. McNutt previously served as president and chief executive officer of the Monterey Bay Aquarium Research Institute (MBARI) in Moss Landing, California.

As a scientist, she has participated in 15 major oceanographic expeditions and served as chief scientist on more than half of those voyages. She has published 90 peer-reviewed scientific articles. Her research has ranged from studies of ocean island volcanism in French Polynesia to continental break-up in the Western United States to uplift of the Tibet Plateau.

For more information on Dr. McNutt, visit *www.usgs.gov/aboutusgs/organized/bios/mcnutt.asp*

Jay Berger to Become EERI Executive Director
The Earthquake Engineering Research Institute (EERI) has announced that Jay Berger joined their team December 1, 2009 and will become executive director February 1, 2010. Jay will be working alongside Susan Tubbesing for two months before she retires. Susan has served as EERI's first full-time executive director for the past 22 years.

View the full story on page one of the EERI October 2009 newsletter.
www.eeri.org/site/images/eeri_newsletter/2009_pdf/Oct09.pdf

Dr. Farzad Naeim Chairs NEES
Dr. Farzad Naeim has agreed to serve as the first chair of the National Earthquake Engineering Simulation (NEES) Governance Board. He is recognized world-wide as an authority in evaluating design ground motion issues as they relate to the design of structural systems. He is Vice President and General Counsel for John A. Martin & Associates, Inc., and serves as president of the Earthquake Engineering Research Institute (EERI).

For more information on Dr. Naeim, visit *www.nees.org/news/detail/naeim_chair_operations_governance_board/*

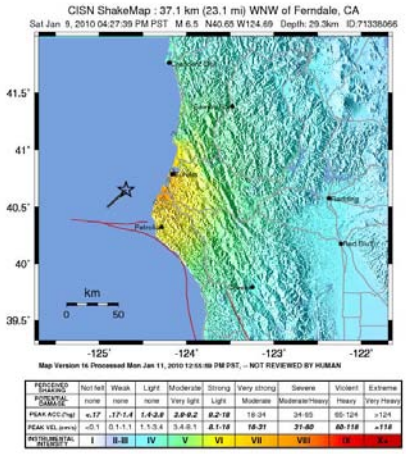
Nominations Open for SSA Awards
Seismological Society of America's (SSA) members are invited to submit nominations for the Harry Fielding Reid Medal, Charles F. Richter Early Career Award, Frank Press Public Service Award, and SSA Distinguished Service Award by February 15, 2010.

For more information on these awards and the submission process, please visit *www.seismosoc.org/news/#i2009124523*

EARTHQUAKE NEWS

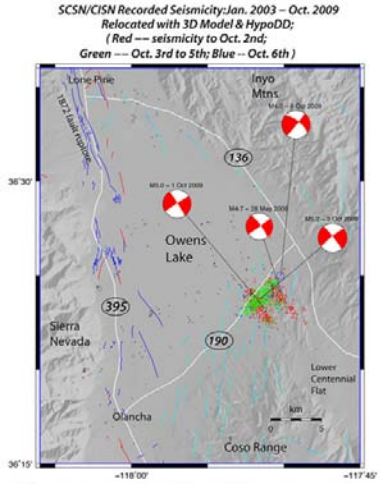
6.5 Offshore Northern California Earthquake
On January 9, 2010, at 4:27pm Pacific Time an M6.5 earthquake occurred approximately 23 miles from Ferndale, California and 29 miles from Eureka, California. According to the USGS, this is the largest quake to occur in this region since 2005. The greatest recorded shaking was observed in Eureka. No tsunami warning was issued.

For more information, visit the Center for Engineering Strong Motion Data (CESMD) site at *http://www.strongmotioncenter.org/cgi-bin/ncesmd/iqr_dist_DM2.pl?IQRID=Ferndale_09Jan2010&SFlag=0&Flag=2* or the USGS website at *http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/nc71338066.php#summary*



Credit: USGS

Olancha Earthquake Sequence
The California Integrated Seismic Network recorded at least 435 seismic events ranging from M1.0-M4.5 in Olancha, California between October 3 and October 7, 2009. The events distinctly show a new trend on a cross fault between the two existing structures. The two existing structures trend NW-SE, whereas the October 3, 2009 events trend SW-NE. This new structure is likely a conjugate fault with respect to the existing structures, as the geology in the area is rather complex. To read the full report, visit *www.scsn.org/2009olancha4.html*



Credit: SCSN

Samoa Island Earthquake Slide Show
Incorporated Research Institutions for Seismology (IRIS) has prepared an 11-slide presentation of the September 29, 2009 M8.0 Samoa Islands region earthquake. The presentation is available at *www.iris.edu/hq/programs/education_and_outreach/moments*

South Pacific Earthquake Swarm Connected to Larger Events?
An October swarm of M6 and M7 earthquakes, and many smaller aftershocks, near Vanuatu and the Santa Cruz Islands, has left many wondering if there is a connection between the these events and the September 29, 2009 Samoa earthquake, or even the Sumatra earthquake of 2004. Dr. Susan Hough of the USGS and Associate Professor Fenglin Niu of Rice University agree that it is possible, but difficult to prove.

For the full article, visit
www.abc.net.au/science/articles/2009/10/12/2711229.htm

Researchers Link 2004 Sumatran Earthquake to Weakening in San Andreas Fault
A new article in Nature magazine highlights the findings of approximately 20 years of research of the Parkfield area of the San Andreas fault. The research has revealed two occasions where long-term changes in fault strength were possibly induced remotely by the 2004 M9.1 Sumatra-Andaman earthquake and the 1992 M7.3 Landers earthquake. The fault-strength changes produced by the distant 2004 Sumatra–Andaman earthquake are especially important, as they suggest that the very largest earthquakes may have a global influence on the strength of the Earth's fault systems, leading to temporal clustering of global seismicity as was observed in the large number of >M8 earthquakes following the 2004 Sumatra-Andaman earthquake.

To view an abstract of the full article, or to purchase the article in its entirety, visit
www.nature.com/nature/journal/v461/n7264/full/nature08395.html#B4

Alaskan Way Viaduct Simulation
Parsons Brinkerhoff has created a simulation of Seattle's waterfront during a large earthquake for the Washington Department of Transportation. The simulation can be viewed here: *www.youtube.com/watch?v=hos_uIKwC-c&feature=player_embedded*

Pierce County, Washington Earthquake Exercises
Fifty agencies participated in October 21st and 22nd earthquake exercises based on a scenario prepared by Pierce County Emergency Management and the U.S. Geological Survey (USGS). Hospitals, police departments, municipalities and schools participated in the exercises, putting their emergency response preparedness to the test. The scenario is based on a magnitude-7.1 earthquake striking along the Tacoma fault. Based on USGS studies, it is predicted that the ground shaking during an earthquake along the Tacoma fault system would cause landslides, liquefaction and possibly a tsunami.

The full article is available at
www.tacomaweekly.com/article/3684/

Canadian Seismic Research Network
From the NEES Website

Researchers from across Canada have recently formed the Canadian Seismic Research Network dedicated to the development of the next-generation of methodologies and technologies to manage and mitigate the seismic risk to Canada's urban infrastructure. The Network will focus on the major Canadian urban centers dominating Canadian seismic risk: Metro Vancouver, Victoria, Montréal Urban Community, Ottawa – Nation's Capital Region, Toronto and Québec City.

Research in the Canadian Seismic Research Network is aimed at the development of tools and methodologies for engineers, planners, and decision makers faced with the challenging task of reducing urban seismic risk, focusing on the protection of critical infrastructure.

For more information, visit
www.nees.org/news/detail/canadian_seismic_research_network/

Slow Moving Faults in Arizona
Applying research methods that proved fruitful along the Alto Tiberina fault in Perugia, Italy, Richard Bennett, a University of Arizona assistant professor of geosciences, and University of Arizona geosciences doctoral candidate Austin Holland are now investigating similar faults in Arizona.

"No large earthquakes are known to have occurred on the Catalina detachment in historic times, so we don't really know if that fault is active or not," Bennett said. "Based on the results from the Alto Tiberina, it's possible the Catalina Detachment fault just slides very slowly and doesn't produce earthquakes."

The motion would be so slow as to be undetectable until the most recent technological advances in geodesy, he said. "The technology has evolved so far that we are now confident we can see little motions."

For the full article, visit
http://www.uanews.org/node/27109

Earthquake Early Warning System
According to research presented at the December 14-15, 2009 American Geophysical Union (AGU) meeting, an earthquake early warning system for California is feasible in coming years. A pilot system, the California Integrated Seismic Network (CISN) ShakeAlert System, funded by the USGS is currently in development. The system will provide warning to a small test group of emergency responders, utilities and transportation agencies. The system will not make public alerts while in the trial phase.

The early warning study is collaboration among the USGS, the California Institute of Technology, the University of California-Berkeley, the Swiss Seismological Service and the Southern California Earthquake Center.

For the full write-up visit *www.usgs.gov/newsroom/article.asp?ID=2366&from=rss_home*

WSSPC has proposed a session on earthquake early warning for Saturday, July 10, 2010 at the Natural Hazards Center Workshop in Broomfield, Colorado.

New Earthquake Monitoring May Help Predict Earthquakes
Scientists at the Carnegie Institution have found a way to monitor the strength of geologic faults deep in the Earth. This finding could prove to be a boon for earthquake prediction by pinpointing those faults that are likely to fail and produce earthquakes. Until now, scientists had no method for detecting changes in fault strength, which are not measureable at the Earth's surface.

To view the full press release, visit *www.ciw.edu/news/new_way_monitor_faults_may_help_predict_earthquakes*

Scientists Film Deepest Underwater Volcanic Eruption
By Phil Han, CNN

After attempting to film an underwater volcanic eruption unsuccessfully for 25 years, scientists have captured the live volcanic eruption of the underwater West Mata volcano near the Samoa islands. This is the first time an underwater volcanic eruption has been filmed.

The eruption was filmed by a U.S. robotic submarine 4,000 feet below of surface of the Pacific Ocean. The National Oceanic and Atmospheric Administration (NOAA) and the National Science Foundation (NSF) funded the scientists in hopes of shedding new light on how the Earth's crust was formed and how tectonic plates collide.

To read the full article and view the video, visit *www.cnn.com/2009/TECH/science/12/18/volcano.underwater.explosion.pacific/index.html#cnnSTCTex*

TSUNAMI NEWS

M8.1 Samoan Earthquake and Tsunami
From the January 2010 Edition of the EERI Newsletter

On September 29, 2009 at 5:48pm UTC (local time), an M8.1 earthquake struck about 200km south of the main Samoan Island chain and 75km east of Tonga's Niua Group. The earthquake occurred in a region of high seismicity, with 14 large earthquakes in the region since the early 1900s.

The ensuing tsunami killed nine people in Tonga, 149 in the independent country of Samoa, and 34 in American Samoa. It was the deadliest tsunami in the Samoa region in living history. The damage in Samoa alone exceeded $150 million. A tsunami warning issued by the Pacific Tsunami Warning Center16 minutes after the earthquake was too late for many, since the tsunami arrived in 11-15 minutes at some of the hardest hit villages. Fortunately, many Samoans were aware of tsunamis and knew to get to high ground after an earthquake, behaviour attributed to education and evacuation exercises initiation throughout the South Pacific over the past decade.

Most people were award of tsunami hazards and had heard that earthquake ground shaking was a natural warning, but many reported evacuating only after watching others do so or once they saw the water withdraw. A number of communities used informal community notification systems such as church and school bells.

For the full write up, download the excerpt from the January 2010 edition of the EERI newsletter at: *www.eeri.org/site/images/eeri_newsletter/2010_pdf/Samoa-Rpt.pdf*

EERI's Samoa Earthquake Virtual Clearinghouse can be found at *www.eqclearinghouse.org/20090929-samoa/*

Education and Evacuation Planning Saved Lives in the September 29, 2009 Samoan Tsunami
By Nancy Fullbright, Communications Officer, Georgia Tech Enterprise Innovation Institute

Emile Okal, a seismologist and professor of earth and planetary sciences at Northwestern University, conducted approximately 120 interviews with tsunami survivors in 70 different locations around Tutuila and Upolu. He found that most people were educated about tsunamis and knew how to react because of community-based educational programs, not ancestral stories.

"The last significant tsunami in Samoa occurred in 1917 and was very similar in seismology to the Sept. 29 tsunami. Surprisingly, no one I interviewed said they knew of family members being in a similar situation," Okal observed. "Since the 2004 Indian Ocean tsunami and the 2007 Solomon Islands tsunami, there has been a concerted effort on the part of the local government in American Samoa to post signs and conduct evacuation drills in some Samoan communities. Many villages were completely destroyed, so I am impressed that the death toll was not larger. The bottom line is education worked."

To read the full article, visit *http://peer.berkeley.edu/news/2009/samoan_tsunami.html*

GEER Team Report on the September 29, 2009 Samoan Tsunami
The Geoengineering Extreme Events Reconnaissance (GEER) team has released their report on the September 29, 2009 Samoan tsunami. This material is based upon work supported by the National Science Foundation (NSF) through the Geotechnical Engineering Program.

To view the report, visit
www.geerassociation.org/GEER_Post%20EQ%20Reports/American%20Samoa_2009/AmSamoa09_index.html

Pacific Northwest Tsunami Threat
Yumei Wang, geotechnical engineer for the Oregon Department of Geology and Mineral Industries in Portland, and Jay Wilson, Hazard Mitigation Coordinator for Clackamas County Emergency Management in Oregon, expressed their concerns over the Pacific Northwest tsunami threat and discussed the pros and cons of vertical tsunami evacuation structures in an article for the Discovery news.

To view the article, visit
http://news.discovery.com/earth/tsunami-evacuation-pacific-northwest.html

Tsunami Erosion
Scientists working on the Kuril Islands off Russia's East Coast have fortuitously been given the rare opportunity to study the before and after effects of tsunamis on coastlines. The Kuril Biocomplexity Project made detailed surveys of some of the Kuril coastlines in the summer of 2006 and then returned in the summers of 2007 and 2008, providing the scientists with the opportunity to study the before- and –after comparisons of the November 15, 2006 and January 13, 2007 tsunamis.

The scientists found that the tsunamis carried away far more sand and soil than they deposited. When revisiting the coastlines they surveyed in 2006, they found that in some places the amount of sand and soil the tsunami eroded was 50 times greater than the amount deposited.

For the full article, visit
http://uwnews.org/article.asp?articleID=53117

Building Tsunami Resistant Cities
The National Science Foundation recently ran an article on the tsunami research of Mary Beth Oshnack, a graduate student at Oregon State University. Oshnack is currently researching how tsunami forces change with distance from the shoreline, the effects of sea walls on tsunamis and the wave loading and failure modes of prototype wood and aluminum walls subject to wave loading. In her research, Oshnack has found that small seawalls can cause skyward deflection of an incoming tsunami wave, reducing its energy and force on structures directly landward of the wall. This research coincides with observations in Patong Beach, Thailand where a sea wall caused a splash up of the tsunami wave and buildings behind it suffered only moderate damage.

To read Mary Beth Oshnack's full write-up, visit
http://nsf.gov/discoveries/disc_summ.jsp?cntn_id=115749&org=NSF

Tsunami Evacuation Building Workshop
A Tsunami Evacuation Building Workshop was held in Cannon Beach, Seaside and Portland, Oregon September 28 and 29, 2009. The workshop first explored the towns of Cannon Beach and Seaside to learn of their specific geographic impediments to inland and vertical evacuations from tsunamis. Cannon Beach officials and a local architect presented ideas for creating a vertical evacuation structure as part of the community's need to upgrade their city hall. The workshop's second day in Portland covered design guidelines for constructing tsunami evacuation buildings, with examples from Japan, and FEMA's publications P646 and P646A. Staffers for federal, state and local elected officials participated in a policy discussion of the feasibility of building evacuation structures and how best to protect tsunami-prone communities. The workshop closed with presentations from Cascadia states representatives who described tsunami risk reduction efforts currently underway and policy discussion. WSSPC was a co-sponsor of the event.

RESOURCES & PUBLICATIONS

WSSPC Member Publications

2009 Seismic Vulnerability of Oregon State Highway Bridges: Report
This report is intended to be a first step in a comprehensive look at seismic risk to transportation systems that could include slides, fill slopes, local roads and bridges, and supply lines (such as fuel depots, electricity, water and sewer lines), and marks the culmination of two years of study jointly conducted by the Oregon Department of Transportation and Portland State University.

The report is available for download at
ftp://ftp.odot.state.or.us/Bridge/bridge_website_chittirat/2009_Seismic_Vulnerability_final.pdf

New Map Highlights Faults and Other Hazards in Oregon City
The Oregon Department of Geology and Mineral Industries (DOGAMI) has released *GMS-119, Geologic Map of the Oregon City 7.5' Quadrangle, Clackamas County, Oregon***,** by Ian P. Madin, Oregon Department of Geology and Mineral Industries.

This new geologic map of the Oregon City area is one of the most detailed and accurate geologic maps published in Oregon to date.

For the full press release, visit
www.oregongeology.org/sub/news&events/archives/press-release-2009-09-29.pdf

Paleoseismology in Utah
The Utah Geological Survey (UGS) has published the results of a joint UGS/U.S. Geological Survey seismic-hazard evaluation of the Weber segment of the Wasatch fault zone, titled *Paleoseismic Investigation of the Northern Weber Segment of the Wasatch Fault Zone at the Rice Creek Trench Site, North Ogden, Utah.* The study, which was partially funded by NEHRP, expands the record of Weber-segment paleoearthquakes into the early Holocene, provides new timing and displacement data for the most recent earthquake, and helps reduce uncertainties in earthquake timing, recurrence, displacement, and vertical slip rate. The report can be viewed online at *http://geology.utah.gov/online/ss/ss-130.pdf.*

Additional volumes in the Paleoseismology of Utah series are available at *http://geology.utah.gov/ghp/consultants/paleoseismic_series.htm.*

Nevada Statewide HAZUS Update
Nevada Bureau of Mines and Geology has released Open-File Report 09-7: *Nevada Statewide HAZUS Database Update*. This report is an update of Nevada's database used for estimating possible earthquake and flood- related losses with HAZUS.

Open File-Report 09-7 is available for download at *www.nbmg.unr.edu/dox/of097/of097.pdf*

Nevada Bureau of Mines and Geology
Open File Report 09-8
The Nevada Bureau of Mines and Geology has released Open File Report 09-8: *Estimated Losses from Earthquakes Near Nevada Communities.*
This report uses HAZUS-MH to estimate losses from earthquakes that could occur near thirty-eight Nevada communities, including all county seats and major population centers. It also tabulates earthquake probabilities for these communities from the U.S. Geological Survey's probabilistic seismic hazard analysis.

Open File Report 09-8 is available for download at *www.nbmg.unr.edu/dox/of098/Scenarios/OpenFileReport09-8.pdf*

New Maps Reveal Southern Extension of Southern Whidbey Island Fault
A team led by Washington State Department of Natural Resources' geologists has released maps showing that the southern Whidbey Island fault extends farther south and east than once thought and connects to the Rattlesnake Mountain fault zone. Whidbey Island fault is considered capable of generating earthquakes and represents the greatest risk to Everett, Seattle, Port Townsend, and Victoria.

For the full write-up visit *www.dnr.wa.gov/ResearchScience/News/Pages/nr09_155.aspx*

Grays Harbor County All Hazards Guide
Submitted by John Schelling, Earthquake/Tsunami/Volcano Program Manager, Washington Emergency Management Division

During the week of November 22nd, residents of Grays Harbor County, Washington received a new publication jointly developed by Washington State Emergency Management's Earthquake/Tsunami Program and Grays Harbor Emergency Management entitled *Grays Harbor County All Hazards Guide*. The *All Hazards Guide* was distributed in the Sunday edition of *The Daily World* newspaper as well as the once-weekly local editions that are targeted towards specific neighborhoods. The *Guide* is intended to serve as a compendium of resources that can easily be used by county residents and businesses to mitigate, prepare for, and respond to the hazards they are most likely to face. Further, the *All Hazards Guide* seeks to provide a 'one-stop shop' for federal, state, and local emergency management contact information. This resource document was patterned after the hurricane preparedness guides that have been successfully used in the Southeastern U.S. for the past decade.

In addition to being easy to distribute on a large scale with relatively little cost via newspaper media, the *Guide* was intentionally designed as a template that can readily be modified by other coastal and inland counties to provide a similar resource document without the expense of hiring a graphic artist. Continuing support for annual reprints of the publication can be provided by local businesses through advertisements. While the focus of the *Guide* is on the most frequently occurring hazards, earthquake/tsunami preparedness and response are the primary components. The center pages include color tsunami evacuation maps that are applicable to the County as well as a large section on tsunami preparedness. The project was completed using funding from NOAA's National Tsunami Hazard Mitigation Program.

To download a copy of this document, visit *www.co.grays-harbor.wa.us/info/DEM/Docs/AllHazDocs/GHCAllHazardsGuide.pdf*

Putting Down Roots in Earthquake Country
Idaho Geological Survey has just released *Putting Down Roots in Earthquake Country: Your Handbook for Earthquakes in Idaho.* This document highlights Idaho's earthquake hazard and provides insight into how Idaho residents can protect their families, homes and businesses before, during and after a significant seismic event.

To download: *www.idahogeology.org/uploads/Earthquake-9-10-09.pdf*

California Tsunami Inundation Mapping
The California Emergency Management Agency, California Geological Survey and Tsunami Research Center at the University of Southern California teamed up to create new Tsunami Inundation Maps for California coastal regions. Collectively known as the California Tsunami Program and funded through the National Tsunami Hazard Mitigation Program, the group has compiled 130 maps that cover approximately 50% of the state's 840-mile coastline, including 100% of the San Francisco Bay Area, which is a first for California Tsunami Inundation Mapping.

The California Tsunami Program has worked with county and city emergency managers to help incorporate these maps into their emergency response plans.

For the full press release, visit *www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/DF48B14186C8E3918825768F008090A0?OpenDocument*

To download finalized copies of the maps, visit *www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Pages/Statewide_Maps.aspx*

California Geological Survey's Note 55

The California Geological Survey has released Note 55, an informational document on tsunamis. Page 1 of the two-page document details what a tsunami is, what the warning signs are, and provides a tsunami awareness success story from the 2004 tsunami that struck Thailand. The second page specifically addresses the tsunami threat in California and offers further resources to readers.

To download your copy of California Geological Survey Note 55, visit *www.consrv.ca.gov/cgs/information/publications/cgs_notes/Documents/CGS_Note_55.pdf*

Other Publications

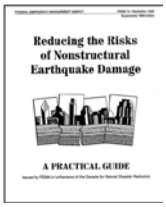
Earthquake Damage Assessments for Insurance
By Lisa Shusto, P.E., and John Osteraas, Ph.D., P.E.

The Earthquake Damage Assessment and Repair project resulted in a new guidebook, *General Guidelines for the Assessment and Repair of Earthquake Damage in Residential Wood Frame Buildings.* The guidelines provide a beneficial resource tool for the insurance community in the adjustment of earthquake related claims, and serve as a technical resource for training insurance adjusters.

To read the complete report, visit *www.claimsmag.com/Issues/2009/NOVEMBER-2009/Pages/Earthquake-Damage-Assessments.aspx*

To purchase your copy of this document, visit *www.curee.org/zc/index.php?main_page=index&cPath=9*

Release of FEMA 420



FEMA 420, *Engineering Guidelines for Incremental Seismic Rehabilitation* (ATC-68 Project) has been released and is available for download at *www.atcouncil.org/pdfs/FEMA420.pdf*

Release of FEMA P646A
FEMA P646A, *Vertical Evacuation from Tsunamis: A Guide for Community Officials* (ATC-64 Project) has been released and is available for download at *www.atcouncil.org/pdfs/FEMAP646A.pdf*

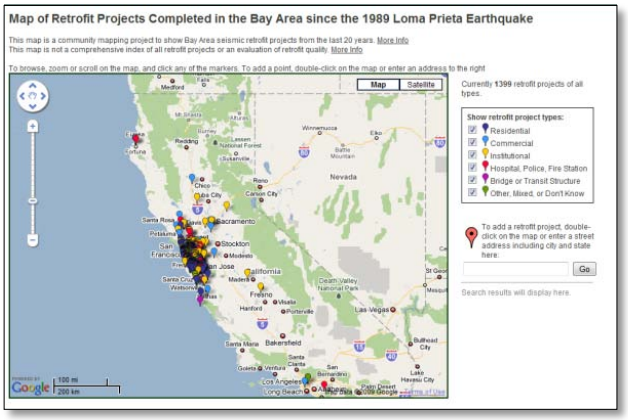
BBC World Debate: Prevent or React
The British Broadcasting Company (BBC) recorded a one-hour debate at the Global Platform for Disaster Risk Reduction entitled "Prevent or React." Nik Gowing, a senior BBC World presenter anchored the event. Panelists included Arjun Katoch, Emergency Services Branch, U.N. Office for the Coordination of Humanitarian Affairs (OCHA); Loren Legarda, Phillipine Senator and the UN International Strategy for Disaster Reduction's (ISDR) champion of Disaster Risk Reduction in the Asia Pacific region; Guido Bertolaso, Head of Italy's civil protection agency; and Edward Borodzicz, Professor of risk management at Portsmouth University Business School,UK and author of *Risk, Crisis and Security Management.*

Panelists discuss the pros and cons of disaster preparedness and early warning systems.

To view this debate, visit *www.preventionweb.net/english/professional/multimedia/v.php?id=10362*

Earthquakeretrofit.org
With a map of retrofitted buildings from Sacramento to Santa Cruz, the *www.earthquakeretrofit.org* website helps show progress in earthquake mitigation since Loma Prieta. The site allows anyone to post information and photos on an interactive map. The results, say the site's developers, show two decades of progress, one building at a time. "Several thousand retrofits have been completed since Loma Prieta, but they've never been catalogued together," says David Bonowitz, a San Francisco structural engineer who helped conceive the website. He says those retrofits could translate into hundreds of lives and billions of dollars in repair and recovery costs that will now be saved.

The City of Oakland has embraced the grass roots website and is preparing to map 369 retrofits from its New Homeowner Program, which reimbursed new homeowners up to $5,000 if they met the City's standards for seismic retrofits.



Earthquake Early Warning Featured in SRL
Earthquake Early Warning (EEW) is the focus of the September/October 2009 issue of *Seismological Research Letters* (*SRL*Vol. 80, No. 5), which features a special section on EEW methods and implementations being used now in the United States, Mexico, Turkey, Japan, Taiwan, and other locations worldwide. The issue's cover features a simple and colorful poster that tells people what to do when they hear an EEW alert.

The poster is available in several languages at *www.seismosoc.org/publications/srl/eew/posters/.*

Loma Prieta Professional Papers
The USGS has posted four Loma Prieta earthquake professional papers which comprehensively document the M6.9 event that shook the Monterey Bay and San Francisco regions October 17, 1989. Collectively the documents total nearly 3000 pages written by 401 investigators.

To access these documents, visit *http://earthquake.usgs.gov/regional/nca/1989/papers.php*

Costing Out the "Big One"
From the September 2009 Edition of the Natural Hazards Observer

A recurrence of the 1906 San Francisco earthquake would result in economic damage of between $39 billion and $328 billion in 2005 dollars, and cause between 3,000 and 24,000 deaths, according to a paper by Kevin Vranes and Roger Pielke, Jr. in the August 2009 *Natural Hazards Review.*

The researchers adjusted earthquake damages over the past 100 years for inflation, increases in wealth, and changes in population.

To read the full write-up, download the September 2009 Edition of the Natural Hazards Observer at *www.colorado.edu/hazards/o/archives/2009/sept_observerweb.pdf*

FEMA Insights on Personal Preparedness
The Federal Emergency Management Agency (FEMA) has released two new publications entitled: *Preparedness in America: Findings from the Citizen Corps National Survey* and the *Citizen Corps Urban Area Survey.* These publications offer comprehensive data on the public's thoughts, perceptions, and behaviors related to preparedness and community safety for multiple types of hazards.

To download these documents, visit *www.citizencorps.gov/news/press/2009/personal_preparedness_research_jun09.shtm*

Earthquake Resistant Design and Risk Reduction
The second edition of *Earthquake Resistant Design and Risk Reduction*, by David J. Dowrick of New Zealand, has been released. New topics include the building of low-damage structures and the spatial distribution of ground shaking near large fault ruptures. Sections on the response of buildings to differential settlement in liquefaction, performance-based and displacement-based design, and the architectural aspects of earthquake-resistant design are heavily revised.

To order your copy, visit *www.wiley.com*

Global Earthquake Model Survey
The Global Earthquake Model (GEM) is a unique private-public alliance with the mission of producing software and tools that help to reduce earthquake risk worldwide. In order to collect data to guide the design and development of software and its underlying basis, GEM is assessing user needs in a web-based survey requiring less than 10 minutes.

GEM invites all to participate by clicking on the red banner in the upper right corner of their homepage. Results of the survey will be available at the GEM website upon completion.

To take the GEM survey, visit *www.globalquakemodel.org/node/72*

California Earthquake Timeline
Version three of "California Earthquake History Timeline (1906-2008)" has been released and is available in PDF and hard copy formats. This colorful timeline illustrates California seismic events and State and Federal actions from 1906-2008.

To download or purchase your copy, visit *www.disaster-timeline.com/californiatl.html*

Disaster Management and Human Health Risk
WIT Press has published *Disaster Management and Human Health Risk: Reducing Risk, Improving Outcomes*. This document contains papers presented at the First International Conference on Disaster Management and Human Health Risk earlier this year.

To obtain your copy and to view the title and contents pages, visit *www.witpress.com/978-1-84564-202-0.html*

Communicating Emergency Preparedness
In their new book *Communicating Emergency Preparedness: Strategies for Creating a Disaster Resilient Public*, authors Damon Coppola and Erin Maloney provide an overview of public disaster preparedness education, and explore risk management and the development of a campaign strategy. Specific instructions on obtaining funding from donors, foundations and government grants, as well as case studies identifying successful public awareness campaigns in different communities have been included.

Published By: Auerbach Publications
ISBN: 978-1-4200-6510-7

Risk Communication among Low-Income Populations
From the November 2009 Natural Hazard Observer

A Guide to Enhance Grassroots Risk Communication Among Low-Income Populations, by Randy Rowell, Payam Sheikhattari, Tanyka M. Barber and Myrtle Evans-Holland, offers a system for developing a grassroots disaster communications program, which they define as enabling "public health and emergency preparedness practitioners to involve grassroots organizations such as faith-based, community-based, and business organizations serving low-income populations, in risk communication activities during imminent danger (warning), response, and recovery phases of disaster." Like most disaster preparedness efforts, it isn't something that can be done at

the last minute, but must be undertaken as a priority by emergency response organizations.

The full article is available on page 21 of the November 2009 issue of the Natural Hazards Observer at *http://www.colorado.edu/hazards/o/*

To download this document, visit *www.diversitypreparedness.org/Topic/Subtopic/Record-Detail/18/resourceId__18423.*

Ideas and Action for a Better City
The San Francisco Planning and Urban Research Association (SPUR) released *The Resilient City*, a four-section report comprised of four major policy papers mapping a road to earthquake resilience in San Francisco.

The report is available at *http://spur.org/publications/library/report/theresilientcity_part1_020109*

Cascadia Shallow Earthquakes
The Cascadia Region Earthquake Workgroup (CREW) has released *Cascadia Shallow Earthquakes 2009*, highlighting the threat of shallow earthquakes in the Cascadia region, and offering ways to promote earthquake preparation and resiliency. This report can be used to tailor specific preparation measures, some of which can dramatically reduce damage. Generalized scenario maps for possible earthquakes near Vancouver, British Columbia, Spokane, Washington, Portland, Oregon and Klamath Falls, Oregon are included.

This report is available for download at *http://crew.org/PDFs/CREWshallowFinalSmall.pdf*

CONFERENCES, WORKSHOPS AND EVENTS

EERI Annual Meeting
Dates: February 3-6, 2010
Location: Parc 55 Hotel, San Francisco, California

Registration is open until January 13th for the EERI Annual Meeting. Reflecting this year's theme, "Back to the Future," the planning committee has put together a program that kicks off in the year 2056 with a repeat of the 1906 San Francisco quake. Sessions will explore the breakthroughs in engineering, public policy, research, and education that are needed to achieve a minimal level of damage.

For more information on the EERI Annual Meeting, visit their website at *www.eeri.org*

Portland, Oregon Town Hall Meeting
Submitted by Susan Newman, SSA

Date and Time: April 21, 2010, 6:30pm-8:45pm
Location: Portland Marriott Downtown Waterfront, Portland, Oregon.

The Seismological Society of America (SSA) is sponsoring a Portland, Oregon town hall meeting themed: "The Big One Is Coming: What Are YOU Going To Do About It?" The purpose of this event is to raise the awareness of decision-makers and the public of earthquake hazards and associated risks that face them in the Portland area, western Oregon and the greater Pacific Northwest. Understanding of the magnitude of the earthquake risk in the Pacific Northwest has grown rapidly in recent years and yet progress has been slow to reduce the potential loss of life and impacts on our infrastructure and economy.

Speakers will include Sam Adams, Mayor of Portland; Peter Courtney, Oregon State Senate President; George Priest and Yumei Wang of the Oregon Department of Geology and Mineral Industries; Jed Sampson and Carmen Merlo, City of Portland; Craig Weaver, U.S. Geological Survey, and Ivan Wong, URS Corp., coordinator of the meeting.

More information on the town hall meeting and the SSA annual meeting is available at *www.seismosoc.org* or email: *2010meeting@seismosoc.org.*

World Conference on Disaster Management
Dates: June 20-23, 2010
Location: Toronto, Canada

The Canadian Centre for Emergency Preparedness 20th World Conference on Disaster Management theme will be "20 Years of Progress – Are We Prepared to Face Future Challenges? Emergency Management and Business Continuity Working Together." The program will include experts in emergency planning and management, business continuity, emergency response, risk management, IT disaster recovery, disaster management research, emergency communications, emergency health, and community planning.
For more information, visit *www.wcdm.org*

WSSPC Annual Meeting with the Natural Hazards Center Workshop
Dates: July 9-13, 2010
Location: Omni Interlocken Resort, Broomfield, Colorado

WSSPC's 2010 Annual Meeting will be held with the Natural Hazards Center Workshop in Broomfield, Colorado at the Omni Interlocken Resort, July 9-13, 2010. The WSSPC Awards in Excellence banquet, Committee, Board and Annual Business Meetings will be held Friday, July 9. WSSPC has proposed an Earthquake Early Warning (EEW) session for the morning of Saturday, July 10; Natural Hazards Center field trips will be held Saturday afternoon. The Natural Hazards Workshop will begin the morning of Sunday, July 11 and run through Tuesday, July 13.

The conference hotel room rates at the Omni are $128+tax for double occupancy. The Denver-Boulder Super Shuttle offers service from the Denver airport to the Omni for $26 one way or $46 round-trip.

For information on the hotel, visit *www.omnihotels.com/FindAHotel/DenverInterlocken.aspx*

Information on the program will be released as it becomes available. Be sure to check the WSSPC website at *www.wsspc.org* for meeting and workshop updates.

Earthquake and Tsunami Awareness Events

Nevada
Earthquake Awareness Week will be February 21-27, 2010. A "drop, cover and hold" drill will be held on February 24th.

National Tsunami Hazard Mitigation Program Tsunami Awareness
The National Tsunami Hazard Mitigation Program states' Tsunami Awareness week will be held March 22-27, 2010. This coincides with the anniversary of the 1964 Alaska earthquake. Preparedness events and drills will be held in Alaska on March 24, as well as an exercise for the entire Area of Operation conducted by the West Coast / Alaska Tsunami Warning Center.

Idaho
Idaho Earthquake Preparedness Month will be held in October 2010, coinciding with the anniversary of the October 28, 1983 Borah Peak, Idaho earthquake.

Mark Your Calendar!!

January 6-7, 2010
Mitigation Planning Workshop for Preparing and Reviewing Local Plans, Cheyenne, Wyoming
http://wyohomelandsecurity.state.wy.us/mitigationplanning/MitigationPlanning.pdf

January 14, 2010
California Seismic Safety Commission Meeting, Sacramento, California

January 21, 2010
Utah Seismic Safety Commission Quarterly Meeting, Senate Building, Salt Lake City, Utah

January 26-27, 2010
USGS 2010 Northern California Earthquake Conference, Menlo Park, California (Invitation Only)

January 27, 2010
FEMA Debris Planning Workshop, Herschler Building, Conference Room B63, Cheyenne, Wyoming
http://wyohomelandsecurity.state.wy.us/debris_planning/debris_mgt_plan.pdf

January 28, 2010
FEMA Debris Planning Workshop, Ramada Plaza Riverside, Casper, Wyoming
http://wyohomelandsecurity.state.wy.us/debris_planning/debris_mgt_plan.pdf

February 3-6, 2010
Earthquake Engineering Research Institute Annual Meeting, Parc 55 Hotel, San Francisco, California
www.eeri.org/site/meetings/2010annual-mtg

February 10, 2010
Nevada Earthquake Safety Council Meeting, Reno, Nevada

February 22-26, 2010
American Geophysical Union Ocean Sciences Meeting, Portland, Oregon
www.agu.org/meetings/index.shtml

March 2010
California Seismic Safety Commission Meeting

March 6-9, 2010
NEMA Mid-Year Conference, Hilton Alexandria Mark Center, Alexandria, Virginia
www.nemaweb.org/?2068

March 22-27, 2010
NTHMP Tsunami Awareness Week

March 24, 2010
Tsunami Drills and Exercises for the state of Alaska

March 24, 2010
Area of Operation exercise conducted by the West Coast / Alaska Tsunami Warning Center

April 21-23, 2010
SSA Annual Meeting, Portland Marriott Downtown Waterfront Hotel, Portland, Oregon
www.seismosoc.org/meetings/2010/index.php

May 2010
California Seismic Safety Commission Meeting

May 11-13, 2010
18th Annual Conference National Voluntary Organizations Active in Disaster (National VOAD), Orlando, Florida
www.nvoad.org/

May 18-20, 2010
Utah Public Safety Summit, Ogden Eccles Conference Center, Ogden, Utah
http://publicsafety.utah.gov/

May 24-29, 2010
5th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics and Symposium in Honor of I.M.Idriss, San Diego, California
http://conference.mst.edu/5geoeqconf2010/

May 20, 2009
Nevada Earthquake Safety Council Meeting, Las Vegas, Nevada

June 20-23, 2010
World Conference on Disaster Management, Metro Toronto Convention Centre, Toronto, Ontario, Canada
www.wcdm.org/

July 9, 2009
WSSPC 2010 Board, Committee and Annual Business Meetings, Omni Interlocken Resort, Broomfield, Colorado

July 9, 2010
WSSPC Awards in Excellence Banquet, Omni Interlocken Resort, Broomfield, Colorado

July 10, 2009
WSSPC Earthquake Early Warning Session (proposed), Omni Interlocken Resort, Broomfield, Colorado

July 10-13, 2010
Natural Hazards Workshop, Omni Interlocken Resort, Broomfield, Colorado
www.colorado.edu/hazards/workshop/

July 25-29, 2010
9th US National & 10th Canadian Conference on Earthquake Engineering: Reaching Beyond Borders, Westin Harbour Castle Hotel, Toronto, Canada - WSSPC is a co-sponsor of this event.
http://2010eqconf.org/

August 25, 2009
Nevada Earthquake Safety Council Meeting, Reno, Nevada

September 14-17, 2010
California Emergency Services Association Annual Meeting, Monterey, California
www.cesa.net/conferences.cfm?color=st

September 20-25, 2010
Association of Environmental & Engineering Geologists Annual Meeting, Francis Marion Hotel, Charleston, South Carolina
http://aegweb.org/i4a/pages/index.cfm?pageID=4565

October 2010
Idaho Earthquake Preparedness Month

October 2010
NEMA Annual Conference, Peabody Hotel, Little Rock, Little Rock, Arkansas
www.nemaweb.org/?2068

October 30-November 4, 2010
International Association of Emergency Managers 58th Annual Conference & EMEX 2010, Hilton Palacio del Rio & Henry B. Gonzalez Convention Center, San Antonio, Texas
www.iaem.com/events/annual/intro.htm

October 31-November 3, 2010
Geological Society of America Annual Meeting, Denver, Colorado
www.geosociety.org/meetings/2010/index.htm

November 17, 2010
Nevada Earthquake Safety Council Meeting, Las Vegas, Nevada

December 2010
American Geophysical Union Fall Meeting, San Francisco, California

Request for Newsletter Submissions
If you have a newsworthy item for the next eNewsletter, please forward it to Amy Lewis, Program Manager, by April 1, 2010 at: alewis@wsspc.org