



# **Geothermal Resources Council 39th Annual Meeting & GEA Geothermal Energy Expo**



***Geothermal: Always On***

**September 20 - 23, 2015  
Peppermill Resort Spa Casino  
Reno, Nevada · USA**

**PRELIMINARY PROGRAM**

# Register Now!

## Join Us in Reno, Nevada!

*“The biggest little city in the world”*

The GRC Annual Meeting and GEA Geothermal Energy Expo promises to be one of the geothermal energy events of the year. Don't miss it.

Connect for the latest news and event information on GRC's website [www.geothermal.org](http://www.geothermal.org)



*Reno is the biggest little geothermal city in the world!*

## Registration Now Open

REGISTER ONLINE AT: [www.geothermal.org](http://www.geothermal.org)

**Register by August 30 and save up to \$100**

**GRC Annual Meeting & GEA Geothermal Energy Expo features:**

### Pre-Meeting Workshops (2-days)

- Drilling and Risk Management
- Practical Aspects and Applications of Geochemistry

### GRC Field Trips

- Steamboat Geothermal Plant Complex (*One Day – Pre-meeting*)
- Long Valley Geology (*3 Days – Pre-meeting*)
- McGinness Hills Geothermal Plant (*Two Days – Post-meeting*)
- Peppermill Geothermal Heating System  
(*Various tours during the meeting*)

### GRC Annual Charity Golf Tournament

### GRC Opening Session

### GRC/GEA Opening Reception

### GEA Geothermal Energy Expo

### GRC International Luncheon

### GRC International Session

### GRC Technical Sessions

### GRC Student Leadership Luncheon

### GRC Annual Banquet at the National Automobile Museum

### GRC Poster Session and GEA Expo Networking Reception

### GRC Membership Meeting & Awards Luncheon



### Table of Contents

Introduction & Welcome	3
Sponsors & Contributors	4
GRC Annual Meeting Committee	5
GRC Workshops	6
GRC Field trips	7
GRC Annual Meeting Schedule	9
Other Events	12
Amateur Photography Contest	13
GRC Technical Program:	
Monday	14
Tuesday	16
Wednesday	22
GEA Geothermal Energy Expo	24
Hotel Accommodation	26
Registration Form	27

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[m.geothermal.org](http://m.geothermal.org)

# GRC 39th Annual Meeting & GEA Geothermal Energy Expo

## *Geothermal: Always On*

The Geothermal Resources Council (GRC) invites you to be part of the biggest annual geothermal conference and expo in the world.

Promoting “*Geothermal: Always On*” the 2015 GRC Annual Meeting & GEA Geothermal Energy Expo will be held September 20-23 at the Peppermill Resort Spa Casino, Reno, Nevada, USA.

Now in its 39th year, the GRC Annual Meeting was created for the fellowship of the leading voices and minds of the geothermal industry from every corner of the globe. Designed to encourage networking, business and educational opportunities for all attendees, the meeting is a technological showcase of the latest geothermal research, exploration, development and utilization.

### **Here are some of the highlights:**

In addition to the main event of the GRC Annual Meeting & GEA Geothermal Energy Expo, there will be two workshops and two field trips before the conference and one field trip just after.

The two pre-event geothermal workshops will be held over two days. *Drilling & Risk Mitigation* and *Practical Aspects and Applications of Geochemistry* will take place on September 18 and 19, before the start of the main geothermal event. The GRC Workshop presentations will be given by experts from private industry, national laboratories and universities, and should prove valuable for anyone interested in learning about the latest exciting developments in geothermal energy.

In addition, there will be two pre-event and one post-meeting field trip. There will be a one-day trip to Ormat’s Steamboat geothermal power plant complex located just south of Reno and a 3-day fieldtrip will look at the active geology of the Long Valley, just east of Yosemite, including the Mammoth Lakes geothermal power plant. The two-day post-meeting field trip will journey into the Great Basin and the 72 MW McGinness Hills geothermal power plant led by Nick Hinz and Drew Siler.

Throughout the meeting there will also be guided tours of the direct use geothermal system at the Peppermill Hotel, the only resort in the United States whose heating source is totally provided from geothermal energy produced on the immediate property.

On Sunday, the annual GRC Charity Golf Tournament will be held at the Red Hawk Golf & Resort in nearby Sparks, with a shuttle service picking passengers up from the hotel. Proceeds from the tournament will go to the Northeastern California and Northern Nevada Chapter of the Make-a-Wish Foundation and to the GRC Scholarship Fund. Registration is now open for this popular networking event.

Back at the Peppermill Resort Spa Casino, the GRC and the Geothermal Energy Association (GEA) will host an Opening Reception on Sunday night and over the following days the GRC will host an Opening Session, Technical Sessions, a Poster Session, the GRC Banquet at the National Automobile Museum, an International Luncheon and Session, a Leadership Luncheon for students, the Annual Membership Meeting and Awards Luncheon, and a showcase of the GRC Amateur Photo Contest winners.

The GRC Annual Meeting will feature distinguished international keynote speakers at its Monday Opening Session. More than 120 papers have been accepted for the Technical Sessions. Over 40 hours of presentations are offered.

In tandem with the Annual Meeting is the GEA’s Geothermal Energy Expo hosting North America’s largest gathering of vendors providing support for geothermal resource exploration, characterization, development, production and management. *Entry to the trade show is free with GRC Annual Meeting registration.*

With GRC’s strong track record of bringing together the people and issues most relevant in the industry, attendees will find tremendous value in the GRC Annual Meeting & GEA Geothermal Energy Expo.

**For more information visit our website at [www.geothermal.org](http://www.geothermal.org) or call (530) 758-2360.**



*The patio of the Edge nightclub. COURTESY PEPPERMILL*

## A Special Thanks to Our Sponsors & Contributors

The success of the Geothermal Resources Council Annual Meeting depends on the generous sponsorships and contributors of corporate and individual members. The GRC and GEA would like to thank the following for their generous support.



**NECK WALLETTS**



**ANNUAL BANQUET & BEST STUDENT POSTER PRIZES**



**GENERAL CONTRIBUTION**



**MEDIA**



**OPENING RECEPTION**



**MEDIA**



**MEDIA**



**MEDIA**



**MEDIA**

A complete list is posted online at: [www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html), and will be posted at the Annual Meeting, in the event's *Final Program*, and in the November/December issue of the *GRC Bulletin*.

If you would like to make a contribution to the 2015 GRC Annual Meeting, please contact Estela Smith at (530) 758-2360 or E-mail at [grc@geothermal.org](mailto:grc@geothermal.org).

**We are still accepting sponsorships and contributions!**

# GRC Annual Meeting Committee

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## 39th GRC Annual Meeting & GEA Geothermal Energy Expo

Reno, Nevada · USA  
September 20 - 23, 2015



# GRC 2015 Schedule of Events

## GRC Workshops

### FRIDAY & SATURDAY, SEPTEMBER 18 & 19

#### **Drilling & Risk Management**

Room: Naples 7

8am - 5pm

Cost: \$450 (Member), \$525 (Non-member)

**Presented by:** *Patrick Hanson* (Scientific Drilling Inc.) and *Louis E Capuano Jr.* (Capuano Engineering Company)

The course involves a series of lectures on drilling practices and managing drilling risks in geothermal resources. It emphasizes drilling practices used in the discovery and development of geothermal resources in a variety of geologic settings. These tools include geologic criteria for well site selection, best drilling practices, attaining drilling targets and managing the risks associated with exploration and development drilling.

Each day comprises 5-6 hours of lectures and 2-3 hours of case studies or examples of practical solutions in drilling and completing wells.

This entry-level course is designed for geoscientists and engineers, with broad backgrounds in geothermal energy. Specialized knowledge of drilling is not essential.

#### **Day 1**

- Geologic criteria for site selection
- Drilling programs
- Program execution

#### **Day 2**

- Well completion and testing
- Exploration vs. Development drilling
- Drilling risk management
- Case studies

**Costs include lunch on Friday and Saturday, and a workshop reception on Friday from 5pm-7pm.**

**Visit the GRC Annual Meeting Web Page for the full Workshop Agendas: [www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html)**

**Information is subject to change.**

### FRIDAY & SATURDAY, SEPTEMBER 18 & 19

#### **Practical Aspects and Applications of Geochemistry**

Room: Naples 6

8am - 5pm

Cost: \$450 (Member), \$525 (Non-member)

**Attendees must bring a laptop to carry out the practical problem solving.**

**Presented by:** *Stuart Simmons* (EGI, University of Utah) and *Paul Hirtz* (Thermochem Inc.)

This course emphasizes the practical geochemical tools and techniques used in the discovery, development, and management of geothermal resources. Examples from volcanic terrains, systems related to deep circulation along faults and sedimentary basins will be discussed.

This course will cover geochemical sampling and analysis, the compositions of geothermal fluids, application and interpretation of chemical geothermometers and natural tracers to understand the flow and storage of hydrothermal fluids, and a geochemical case history of a developed field.

Each day comprises 5-6 hours of lecture and 2-3 hours of practical problem solving.

This course is designed for geoscientists, students and engineers. Specialized knowledge of chemistry is not essential.

#### **Day 1**

- Geothermal systems & hydrothermal fluids
- Heat transfer concepts
- Aqueous geothermometers
- Exercise: Interpreting hot spring water compositions

#### **Day 2**

- Boiling and mixing: enthalpy-chloride plots
- Gases: steam loss effects and geothermometry
- Production chemistry & mineral scaling
- Case study of production history



*GRC Workshops offer the latest in geothermal science*

# GRC Field Trips

## FRIDAY, SEPTEMBER 18 – SUNDAY, SEPTEMBER 20

### Long Valley Geology

Depart 10am Friday, returning by 6pm on Sunday  
Cost: \$600

**Led by:** Gene Suemnicht and Duncan Foley

Join us on a trip to Long Valley caldera and the eastern Sierra. The field trip will highlight the volcanic history of Long Valley, the evolution of the caldera's geothermal system and the 40-megawatt (MW) Casa Diablo geothermal power plants operated by ORMAT Inc.

The tour will follow the Walker Lane on eastern side of the Sierra Nevada passing Steamboat Springs and thermal areas at Bridgeport and Fales Hot Springs.

Be sure to bring a camera to capture spectacular overviews of the caldera, the Sierran crest from the summit of Mammoth Mountain, the White Mountains and the Owens Valley.

Field Trip stops will include new production wells in the western caldera moat, surface manifestations at Hot Creek in the central caldera, and the ultradeep DOE magma drilling project site within the caldera's resurgent dome.

The return trip to Reno will include stops within the Inyo Domes, Bishop Tuff outcrops, the Mono Craters and the legendary ghost town of Bodie.

*Trip includes: Two nights lodging (double occupancy required), two lunches, one dinner, refreshments, and transportation in field trip vehicles.*

## SUNDAY, SEPTEMBER 20

### Ormat's Steamboat Geothermal Power Plant Complex

9am-2pm

Cost: \$60

**Led by:** Greg Rhodes and John Arkeley

Ormat's Steamboat Geothermal Power Plant Complex located just south of the city of Reno currently produces over 73 MWe (net capacity) – enough renewable energy to meet the residential electrical needs of the city of Reno.

Located in Washoe County, Nevada, Steamboat consists of six power plants with a combined generating capacity of 73 MW; Steamboat 2/3, Burdette (Galena 1), Steamboat Hills, Galena 2, and Galena 3. Except for Steamboat Hills, which utilizes a single flash system, all of the projects in the Steamboat complex utilize a binary system. The electricity generated by the complex is sold to NV Energy under separate long-term power purchase agreements.

The tour will highlight the unique geology associated with the Steamboat surface manifestations and reservoir as well the Steamboat geothermal power plant complex. This will include the state-of-the-art Galena III recuperated integrated two-level unit and Steamboat Hills single flash unit. Knowledgeable field trip guides will provide expert commentary during the trip.



*GRC Field Trips are a great networking opportunity.*

## GRC Field Trips *continued*

### MONDAY – WEDNESDAY, SEPTEMBER 21-23

#### **Geothermal Direct Use Tours of the Peppermill Resort**

Compliments of GRC & Peppermill Resort Spa Casino

**“The only resort in the United States whose heating source is totally provided from geothermal energy produced on the immediate property.”**

**Monday:** 12:40 – 1:20 pm, 4:40 – 5:25 pm

**Tuesday:** 12:40 – 1:20 pm, 4:15 – 5:00 pm

**Wednesday:** 12:00 – 12:45 pm

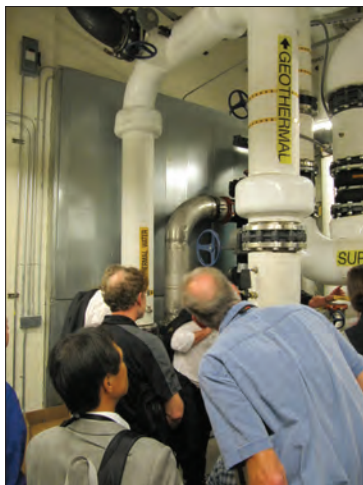
*Tours will depart from and return to the Tuscany Ballroom registration area. (Limited to 30 participants per tour)*

Located at the north end of the Moanna Hot Springs thermal anomaly, the Peppermill currently utilizes low temperature geothermal fluids for direct use heating throughout the resort. The recently renovated system replaces costly natural gas fired heating system to heat swimming pools, tap water and melt snow via heat-exchanger. A new production well drilled in 2009 increased the generating capacity of the facility and supplied over 90% of the current Peppermill’s heat generating needs. The tour will highlight the geothermal wells and engineering facilities. Knowledgeable field trip guides will provide interpretive commentary during the trip, and you won’t even need to leave the hotel.

No advanced registration required, however a sign-up sheet will be available at the GRC registration desk.



*Dean Parker, Executive Facilities Director at the Peppermill will lead the tours of the resort's geothermal direct use heating system.*



*Tour attendees can get up close with the geothermal system.*

### WEDNESDAY TO FRIDAY, SEPTEMBER 23 - 25

#### **McGinness Hills Geothermal Power Plant**

Depart 1pm Wednesday, returning by 4pm on Friday  
Cost: \$450

**Led by:** *Nicholas Hinz and Drew Siler*

The field trip will visit the relatively new production geothermal fields at Salt Wells, NV (14.3 MWe capacity, producing since 2009) and McGinness Hills, NV (began producing 36 MWe net in 2012 and was upgraded to 72 MWe net in 2015).

We will focus on the structural and geologic controls of geothermal circulation, from the crustal-scale to the geothermal field-scale in these fields and in geothermal fields throughout the Great Basin. Discussion will focus on analyses of geologic structure inferred from surface and subsurface data and how these data can inform on conceptual models of geothermal fluid flow.

The field trip will also include a tour of a McGinness Hills power plant and geothermal field and a stop at fault scarps along Fairview Peak. These scarps formed during a 7.2 magnitude earthquake in 1954 and we will discuss the effect of active faulting on permeability generation and maintenance in geothermal fields.

Trip includes 2 nights lodging (double occupancy is required), snacks, refreshment, transportation, 3 lunches and one dinner.



*McGinness (Little Power Plant in the Prairie) by Haim Shoshan, Ormat Systems, Yavne, Israel.*

Visit the GRC Annual Meeting Web Page for Field Trip Schedules: [www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html)

Please note: Field Trip itineraries are subject to change. Full schedules are available on the GRC Website.

Please arrive 30 minutes early to check-in. All GRC Field Trips depart from the Tuscany Ballroom registration area.



# GRC Annual Meeting Schedule

## SATURDAY, SEPTEMBER 19 & SUNDAY, SEPTEMBER 20

### GRC Board Meetings

3-5 pm

Peppermill Resort Spa Casino - Executive Board Room 1735



The GRC Board meeting at the Peppermill in September 2012.

## SUNDAY, SEPTEMBER 20

### GRC Annual Charity Golf Tournament

7:15am - Late Afternoon

**Red Hawk Golf and Resort, Sparks**

\$150 per individual or \$550 per foursome

Designed by three-time U.S. Open champion Hale Irwin, the Hills Course offers players a Scottish links-style layout that has small and dastardly greens, dramatic elevation changes, deep bunkering and immaculate views of one of the most scenic golf destinations in the United States.



COURTESY RED HAWK GOLF & RESORT

The Red Hawk Golf & Resort is 14 miles from the Peppermill Hotel Spa Casino. A shuttle will be provided for transportation to the golf course. The shuttle will pick golfers up at the front of the Peppermill Hotel at 7:15am. If you're driving yourself, plan on arriving at least 45 minutes early to check in, grab some breakfast and head out for some practice swings before the 8:30am SHOTGUN START!

We encourage teams to bring a raffle prize!

All proceeds will go to support the local chapter of the Make-a-Wish Foundation and the GRC Scholarship Fund.

Please visit the GRC Annual Meeting Web Page at: [www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html) to register.

### GRC & GEA Opening Reception

6pm - 8pm

Room: Tuscany Ballroom

Cost: Free with GRC Registration



The Opening Reception is a showcase for exhibitors at the GEA Expo

On Sunday evening, all registered meeting attendees are encouraged to join colleagues, friends and old acquaintances at this grand reception hosted by the GRC & GEA in the Expo Hall.

Opening Reception sponsored by Power Engineers  
Appetizers will be available at -Booth 409



## MONDAY, SEPTEMBER 21

### GRC Opening Session

8am - 12 Noon

Room: Capri Ballroom

Cost: Free with GRC Registration

The GRC Opening Session will feature top-ranking government officials and industry representatives from around the world, who will put current geothermal events into perspective for the future.

#### Tentative as of July 7, 2015

**Paul Thomsen**, Director, Nevada Governor's Office of Energy

**Doug Perry**, Nevada Division of Mines

**Jack McGinley**, Director, NV Energy

**Isaac Angel**, CEO, ORMAT

**James Kluesener**, VP Geothermal Operations, Calpine

**Dennis Gilles**, CEO, US Geothermal

**Karl Gawell**, Executive Director, GEA

**Liz Johnson**, California Division of Oil and Gas and Geothermal

**Terry Page**, Director, Enel Green Power North America

**Rick Allis**, Utah State Geological Survey

**Jim Faulds**, Nevada Bureau of Mines and Geology

**Yoram Bronicki**, GEA president

**Paul Brophy**, GRC president

**Steve Ponder**, Executive Director, GRC

# GRC Annual Meeting Schedule



*Last year's GRC Annual Meeting Opening Session*

## MONDAY, SEPTEMBER 21

### GRC International Luncheon

12 Noon - 1:30pm

Room: Naples 6/7

Cost: Free with GRC Registration

The seventh annual International Luncheon will bring together experts from around the world with U.S. private and public sector stakeholders to discuss geothermal energy developments in developing markets. Attendees will be able to meet and greet these experts, and explore partnership opportunities.

### GRC International Session

#### Updates on International Geothermal Development

1:30pm - 4:45pm

Room: Naples 4

Cost: Free with GRC Registration

Experts from around the world present the latest geothermal energy developments in regional markets: Australasia, Indonesia, Philippines, Japan, Middle East, Europe, South America, Central America, and North America.

#### Featured Speakers:

**Árni Magnússon**, Mannvit – Europe

**Gustavo Enrique Cuellar**, CASYS – Central America

**Hiroshi Asanuma**, FREA, AIST – Japan

**Juliet Newson**, Contact Energy – Australasia

**Magaly Flores Armenta**, Mexican Federal Electricity Commission – Mexico

**John Lagat**, GDC of Kenya – East Africa

**Steve Hirsch**, Consultant – East Africa

**Pierre Audinet**, World Bank (ESMAP) – International

**Tevfik Kaya**, Schlumberger – Turkey

## MONDAY, TUESDAY & WEDNESDAY

SEPTEMBER 21, 22, AND 23

### GRC Technical Sessions:

Monday 1:50 - 4:40pm

Tuesday 8am - 3:50pm

Wednesday 8am - 11:50am

See the Preliminary Technical Session schedule on pages 14 to 23. For more information on the topics, schedule and associated speakers go to the GRC Website at [www.geothermal.org](http://www.geothermal.org).



*The GRC Technical Sessions are the source form the latest developments in geothermal energy.*

### GEA Geothermal Energy Expo:

Monday 12 Noon - 5pm

Tuesday 9am - 6pm

Wednesday 9am - 12 Noon

Room: Tuscany Ballroom

Cost: Free with GRC Registration

North America's largest gathering of vendors providing support for geothermal resource exploration, characterization, development, production and management. See page 25 for a listing of exhibitors.



*A friendly face at the GEA Expo.*

# GRC Annual Meeting Schedule

## MONDAY, SEPTEMBER 21

### GRC Annual Banquet

6pm - 9pm

National Automobile Museum

Cost: \$100



Get your gear on for the evening of Monday, September 21. By popular demand the GRC Annual Banquet, the geothermal social event of the year is returning to the National Automobile Museum in downtown Reno!

The National Automobile Museum (The Harrah Collection) has a "Wow!" factor you don't often find in a museum. You'll see more than 200 eye-popping cars with authentic street scenes and sounds. The facades bring displays to life; hardware store here, a movie theater there which accompany artifacts from each era. **Purchase your tickets with your GRC Annual Meeting registration.**



Sponsored by Calpine

Shuttle buses will depart from the Peppermill at 5:30 pm.

For more information and directions go to the GRC Website at: [www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html)

## TUESDAY, SEPTEMBER 22

### GRC Student Leadership Luncheon

12 Noon - 1:30pm

Room: Naples 7

Cost: Free for students

Industry leaders will meet with students attending the GRC Annual Meeting during Tuesday's lunch hour. Discussions between the leaders and students over lunch will provide one-on-one opportunities to share ideas about key topics on a variety of geothermal interests.



Jim Lovekin gives his advice to a student attendee at last year's Student Leadership Luncheon

## GRC Poster Session/GEA Expo Networking Reception

4pm - 6pm

Room: Tuscany Ballroom

Cost: Free with GRC Registration

Meet with colleagues in the global geothermal community in the Expo Hall and view this year's selection of Posters. Please note: The posters are also available for viewing during Expo hours.



Student Poster Competition Sponsored by Calpine.



Lorenzo Trimble explaining the latest in geothermal science to Kate Young

## WEDNESDAY, SEPTEMBER 23

### GRC Annual Membership Meeting & Awards Luncheon

12:00 - 2:00pm

Room: Naples 7

Cost: \$65

The GRC will honor the best and brightest of the global geothermal community at its Annual Membership Meeting & Awards Luncheon. The GRC will present its prestigious Aidlin, Holt, Pioneer, Ramey, and Special Achievement awards, as well as awards for Best Technical Session Presentations and Photo Contest.



The 2014 GRC Award Winners (from left to right): Colin Goranson, John Brugman, Jill Haizlip, Marilyn Nemzer, Joe LaFleur, Ann Robertson-Tait and Tony Menzies.

## GRC Annual Meeting Schedule

## GRC Other Events

### WEDNESDAY, SEPTEMBER 23

#### GRC Field Trip to McGinness Hills Geothermal Power Plant

Departs at 1:00pm



All aboard for another GRC Field-Trip!

### MONDAY, SEPTEMBER 21

#### 5th Annual Geothermal Young Professionals Dinner

6:45pm

**La Cucina Italian Deli & Restaurant**, 3600 Lakeside Dr, Reno, Nevada 89509

To RSVP or for any questions please contact Daniel Fleischmann at Enel Green Power at [daniel.fleischmann@enel.com](mailto:daniel.fleischmann@enel.com)

You can also RSVP on Facebook at <https://www.facebook.com/events/403257439874491/>



### Geothermal Energy Expo

Booths are still available

More information at:  
[www.geothermalenergy2015.org](http://www.geothermalenergy2015.org)

### MONDAY, TUESDAY & WEDNESDAY

#### Women in Geothermal (WinG)

##### WinG Reception

Tuesday, September 22

5pm - 7pm

Sponsored by Calpine



The primary objective of WING is to promote the education, professional development, and advancement of women in the geothermal community. We

invite and encourage both women and men in geothermal to join us in a reception to network and discuss WING's mission and activities moving forward.

Note: You do not need to be registered for the GRC/GEA Events to attend this reception.

##### Other WING events being held during the week:

- **Running Club:** Monday and Wednesday. Meet at the Peppermill reception at 6:30 am.
- **Boot Camp:** Tuesday and Thursday. Meet at the Peppermill reception at 6:30 am.
- **Yoga:** Monday, Tuesday and Wednesday. Meet at the Peppermill Fitness Center at 7 am.
- **Meditation:** Monday, Tuesday and Wednesday. Meet at TBD.

More information can be found on the WING Facebook page at: [www.facebook.com/groups/womeningeothermal/](http://www.facebook.com/groups/womeningeothermal/)

### TUESDAY, SEPTEMBER 22

#### CanGEA B2B Networking Reception: Bringing Canada to the World

4:15-5:30pm

Cost: \$15 (register with CanGEA)

Appetizers & Beverages Included



This unique reception will feature "speed-dating" between geothermal professionals from around the world. CanGEA will also be releasing and presenting their *Canadian Skills and Projects Profile* - an inside look

at what is moving forward in Canada and what opportunities are available.

More information on the CanGEA website at: [www.cangea.ca/cangea-events/international-b2b](http://www.cangea.ca/cangea-events/international-b2b)

Contact CanGEA for more information and registration at: [info@cangea.ca](mailto:info@cangea.ca)

# GRC 36th Annual Amateur Photography Contest

The purpose of the contest is to showcase quality photography featuring geothermal energy around the world. All entries and the winning photos will be displayed in the Tuscany Ballroom registration area throughout the meeting.

Awards for the winners will be presented at the GRC Annual Member Meeting and Awards Luncheon.

Last year's winners:



1st Place: *Coil Tubing from 125 ft. Manlift* by Jay Hepper, Cobb, California, USA.

**Deadline submissions for this years photo contest is August 14.**

More information and an Entry Form at:  
[www.geothermal.org/meet-new.html](http://www.geothermal.org/meet-new.html).



2nd Place: *Nga Awa Purua Pipes* by Sarah Milicich, Lower Hutt, New Zealand.



3rd Place: *El Tatio Dawn* by James Stimac, Santa Rosa, California, USA.

	<b>ROOM: Capri Ballroom 1</b>	<b>ROOM: Capri Ballroom 2</b>	<b>ROOM: Capri Ballroom 3</b>
	<b>SCALING &amp; MINERAL EXTRACTION Chair:</b>	<b>EXPLORATION 1 Chair:</b>	<b>DIRECT USE 1 Chair:</b>
1:50	<i>Case Study of the Change of Scale With Production, Yanagisawa, Norio</i>	<i>Earthquake-realated Stress Concentrations and Permeability Generation in Geothermal Systems, Siler, Drew, L. &amp; Faulds, James E. &amp; Hinz, Nicholas</i>	<i>Point of Use Automated Irrigation System For Enhanced Bottom Heat Agriculture Using Waste Steam Condensate in New York City And Waste Geothermal Hot Water and Steam Condensate in Iceland, Foley, William &amp; Dell, Robert &amp; Wei, C.S. &amp; Unnthorsson, Runar</i>
2:10	<i>Modular Solid-State Thermoelectric Power Generation and High-Value Lithium Recovery From Low-Temperature Geothermal Brines, Renew, Jay E. &amp; Melsert, Ryan M. &amp; Rajterowski, Jake</i>	<i>Will Stratigraphic Reservoirs Provide the Next Big Increase in U.S. Geothermal Power Generation?, Allis, Rick &amp; Hardwick, Christian &amp; Gwynn, Mark &amp; Mines, Greg &amp; Moore, Joseph</i>	<i>Geothermal Direct Utilization-Design and Optimization, Jalilinasrabad, Saeid</i>
2:30	<i>Screening the Effects of Ligand Chemistry and Geometry on Rare Earth Element Partitioning From Saline Solutions to Functionalized Adsorbents, Noack, Clinton W. &amp; Perkins, Kedar &amp; Washburn, Newell &amp; Dzombak, David A. &amp; Karamalidis, Athanasios K.</i>	<i>Ice Box Calorimetry: A Test of Applicability in Non-Steaming Geothermal Areas, Lindsey, Cary &amp; Lubenow, Brady &amp; Fairley, Jerry &amp; Larson, Peter</i>	<i>Heat Exchange Rate Enhancement in Ground Heat Exchangers by Water Injection and Pumping, Farabi Asl, Hadi &amp; Fujii, Hikari &amp; Kosukegawa, Hiroyuki</i>
2:50	<i>Assessment of CHIM-XPT and Watch in Predicting the Calcite Scaling Potential of Geothermal Wells, Clemente, Vicente C. &amp; Faja, Kenneth S. &amp; Reed, Mark H. &amp; Daco-AG, Lorena M. &amp; Tamboboy, Remal J.T.</i>	<i>Pavant Butte, Utah Geothermal Prospect Revisited, Allis, Rick &amp; Hardwick, Christian &amp; Gwynn, Mark &amp; Johnson, Stuart</i>	<i>Evolution of Balcova Geothermal District Heating System - Turkey, Parlaktuna, Mahmut</i>
3:10	<b>COFFEE BREAK (3:10 - 3:40) IN EXPO</b>		
	<b>POWER PLANT 1 Chair:</b>	<b>EXPLORATION 2 Chair:</b>	<b>GEOPHYSICS 1 Chair:</b>
3:40	<i>Evaluation and optimization of the Cerro Prieto Geothermal Field steam transportation network efficiency - Estimation of heat losses from pipe fittings, Garcia-Gutierrez, Alfonso &amp; Ovando-Castelar, Rosember &amp; Martinez-Estrella, Juan Ignacio &amp; Canchola-Felix, Ismael &amp; Jacobo-Galvan, Paul</i>	<i>Plumbing and Political Will: Low Temperature Geothermal Power Exploration in Pagosa Springs, Colorado, Mink, Leland &amp; Smith, Jerry &amp; Skeeahan, Kirsten &amp; Foley, Paul</i>	<i>Separating Intrinsic From Scattering Seismic Wave Attenuation From Sonic Logs in a Geothermal Field, Duran, Evert &amp; Van Wijk, Kasper &amp; Adam, Ludmila &amp; Wallis, Irene</i>
4:00	<i>Design and Evaluation of Geothermal Steam Separators: A Review of the State of Art, Rivas-Cruz, Fernando &amp; Garcia-Gutierrez, Alfonso &amp; Martinez-Estrella, Juan I. &amp; Ortiz-Bolanos, Angel A.</i>	<i>Stochastic Modeling and Analysis of Temperature Data From Hot Springs in Yellowstone Caldera, Wyoming, USA, Lindsey, Cary &amp; Fairley, Jerry &amp; Larson, Peter &amp; McMillan, Nicholas</i>	<i>Three-Dimensional Structural Model Building, Induced Seismicity Analysis, Drilling Analysis and Reservoir Management at The Geysers Geothermal Field, Northern California, Hartline, Craig &amp; Walters, Mark &amp; Wright, Melinda</i>
4:20	<i>Thrust Bearing Load Observations in Deep-Well Enclosed Lineshaft Pumps, Reede, Chris &amp; Doumanidis, Haris &amp; Aureli, Matteo</i>	<i>Naval Air Station Fallon Mainside: An Update of Geothermal Exploration, Blake, Kelly &amp; Tiedeman, Andrew &amp; Sabin, Andrew &amp; Lazaro, Michael &amp; Meade, Dave &amp; Huang, Wei-Chuang</i>	<i>Site Specific Probabilistic Seismic Hazard Analysis For Surrounding Communities of The Geysers Geothermal Development Area, Hutchings, Lawrence &amp; Savy, Jean &amp; Bachmann, Corinne &amp; Lindsey, Nate &amp; Singh, Ankit &amp; Miah, Mamun &amp; Heidbach, Oliver</i>

**Posters available for viewing in  
the EXPO Hall 12noon - 5pm**

	<b>ROOM: Capri Ballroom 4</b>	<b>ROOM: Naples 4</b>
	<b>EGS 1 Chair:</b>	<b>INTERNATIONAL SESSION Chair: G. Suemnicht &amp; Rick Zehner</b>
1:50	<i>Permeability Measurement of Thermally Fractured Granite Under Confining Stress at 350-450°C, Numakura, Tatsuya</i>	<b>Starts at 1:30pm</b>  <b>Árni Magnússon</b> <i>Mannvit – Europe</i>  <b>Gustavo Enrique Cuellar</b> <i>CASYS – Central America</i>
2:10	<i>Fracture Characterization Using Resistivity Measured at Different Frequencies in Rocks, Li, Kewen &amp; Pan, Baozhi &amp; Horne, Roland</i>	<b>Hiroshi Asanuma</b> <i>FREA, AIST – Japan</i>  <b>Juliet Newson</b> <i>Contact Energy – Australasia</i>
2:30	<i>Data Archiving and Lessons Learned From the Pioneering Hot Dry Rock Project at Fenton Hill, USA, Kelkar, Sharad &amp; Martinez, Daniella &amp; Brown, Don &amp; House, Leigh</i>	<b>Magaly Flores Armenta</b> <i>Mexican Federal Electricity Commission – Mexico</i>
2:50		
3:10	<b>COFFEE BREAK (3:10 – 3:40) IN EXPO</b>	
	<b>RESOURCE ASSESSMENT Chair:</b>	<b>INTERNATIONAL SESSION Chair: G. Suemnicht &amp; Rick Zehner</b>
3:40	<i>Geothermal Prospector: Supporting Geothermal Analysis Through Spatial Data Visualization and Querying Tools, Getman, Daniel &amp; Anderson, Arlene &amp; Augustine, Chad</i>	<b>John Lagat</b> <i>GDC of Kenya – East Africa</i>  <b>Steve Hirsch</b> <i>Consultant – East Africa</i>  <b>Pierre Audinet</b> <i>World Bank (ESMAP) – International</i>
4:00	<i>Using Geothermal Occurrence Model as an Analogue For Estimating Potential Resource Size, Terry, Rachel &amp; Young, Katherine</i>	<b>Tefic Kaya</b> <i>Slumberger – Turkey</i>
4:20	<i>Geothermal Resource Reporting Methodology (GRRM) Developed for the U.S. Department of Energy Geothermal Technologies Office, Young, Katherine &amp; Wall, Anna &amp; Dobson, Patrick</i>	

**Monday: Reno Rodeo Lunch Buffet**

**Chilled Items:**

- Tossed Seasonal Greens with Ranch and Italian Vinaigrette
- Country-style Macaroni Salad
- Home-style Country Potato Salad
- Seasonal Diced Fresh Fruit Salad

**Entrées**

- House-smoked Spare Ribs
- Sliced Smoked Beef Brisket with Jack Daniel’s BBQ Sauce
- Country-style Broasted Chicken
- Flame-grilled Smoked Sausage

**Accompaniments:**

- Roasted Red Skin Potatoes
- Smoke-House Baked Beans
- Seasonal Vegetables
- Baskets of Buttermilk Biscuits
- Jalapeño Corn Muffins
- Honey Butter

**Dessert:**

- Warm Apple
- Cherry Cobbler with Vanilla Bean Ice Cream

**Refreshments:**

- Freshly Brewed Coffee
- Decaffeinated Coffee
- Hot and Iced Tea Service

**GRC International Luncheon**  
 12 Noon - 1:30pm  
 Room: Naples 6/7  
 Cost: Free with GRC Registration

The seventh annual International Luncheon will bring together experts from around the world with U.S. private and public sector stakeholders to discuss geothermal energy developments in developing markets. Attendees will be able to meet and greet these experts, and explore partnership opportunities.

	<b>ROOM: Capri Ballroom 1</b>	<b>ROOM: Capri Ballroom 2</b>	<b>ROOM: Capri Ballroom 3</b>
	<b>POWER PLANT 2 Chair:</b>	<b>COUNTRY UPDATES Chair:</b>	<b>GEOCHEMISTRY Chair:</b>
8:00	<i>Displaced Exergy: The Valuation of Thermal Power</i> , Harvey, William & Shurtleff, Paul	<i>The United States of America Country Update 2015</i> , Lund, John W. & Sifford, Alex & Boyd, Toni	<i>Applications of Downhole Litho geochemistry to Geothermal Exploration</i> , Libbey, Ryan & Williams-Jones, A.E.
8:20	<i>Sarulla 330 MW Geothermal Project</i> , Wolf, Nir & Gabbay, Amnon	<i>Revisiting the Assessment of Geothermal Resources &lt;90°C in the United States</i> , Williams, Colin F. & DeAngelo, Jacob & Reed, Marshall J.	<i>Geothermometric Temperature Comparison of Hot Springs and Wells in Southern Idaho</i> , Neupane, Ghanashyam & Mattson, Earl D. & Mcling, Travis L. & Dobson, Patrick F. & Conrad, Mark E. & Wood, Thomas R. & Cannon, Cody & Worthing, Wade
8:40	<i>Rerouting the Condensate in an ORC Geothermal Power Plant</i> , Inanli, Mustafa & Valdimarsson, Pal	<i>Breaking Down The Barriers To Geothermal Energy In Canada: Bridging the Knowledge Gap and Overcoming the Status Quo</i> , Crewson, Justin & Thompson, Allison	<i>Fluoride in Geothermal Waters, India</i> , Chandrasekhar, Varun & Chandrasekharam, D. & Gurav, Trupti & Singh, Hemant Kumar
9:00	<i>Geothermal Binary Power Plants at Raft River, San Emidio and Neal Hot Springs: Part 1 - Plant Descriptions and Design Performance Comparison</i> , DiPippo, Ronald & Kitz, Kevin	<i>Worldwide Geothermal Energy Utilization 2015</i> , Lund, John W. & Bertani, Ruggero & Boyd, Toni	<i>Assessment of the Downhole Geochemical Report of OW-917</i> , Wamalwa, Ruth
9:20	<i>Turboden, A Presentation of Recent Worldwide Developments and the Latest Technical Solutions For Large-Scale Geothermal ORC Power-Plants</i> , Rossi di Schio, Clotilde & Bonafin, Joseph & Duvia, Andrea		<i>Geochemistry and Alteration Mineralogy of Well NWS-10, Mt. Sabalan Geothermal Field, NW-Iran</i> , Zarei, Elahe & Tutti, Faramarz & Porkhial, Soheil
9:40	<b>COFFEE BREAK (9:40 - 10:10) IN EXPO</b>		
	<b>POWER PLANT 3 Chair:</b>	<b>BASIN &amp; RANGE Chair:</b>	<b>GEOPHYSICS 2 Chair:</b>
10:10	<i>DOE - GTO Low Temperature Project Case Study</i> , Williams, Tom & Mines, Greg	<i>Comparisons of Geothermal Systems in Central Nevada: Evidence for Deep Regional Geothermal Potential Based on Heat Flow, Geology, and Fluid Chemistry</i> , Kirby, Stefan & Simmons, Stuart & Gwynn, Mark & Allis, Rick & Moore, Joseph Moore	<i>Preliminary Results of a Heat Flow Study of the Williston Basin Using Temporarily Abandoned Oil Wells, Western North Dakota</i> , McDonald, Mark R. & Gosnold, William D. & Nordeng, Stephan H.
10:30	<i>Predictive Functional Control Applied in Vapor Temperature Control of Organic Rankine Cycle System</i> , Huang, Daxing & Wang, Zhigang & Fu, Wencheng	<i>Geothermal Potential in the Basins of East-Central and Southeastern Nevada</i> , Gwynn, Mark	<i>Magnetic Analysis of Dieng-Batur Geothermal Area</i> , Rajayu, Dewi & Fatahillah, Hilmi
10:50	<i>Evaluation of Inflow Radial Turbo Expander Field Performance for a 25 MW Geothermal Organic Rankine Cycle Train</i> , Agahi, Reza	<i>A Case History of the Dixie Valley Geothermal Field, 1963-2014</i> , Benoit, Dick	<i>Quantifying How Errors in Thermal Conductivity Estimates Affect Geothermal Production Models</i> , Crowell, James
11:10	<i>Stillwater Hybrid Geo-Solar Power Plant Analyses</i> , Wendt, Daniel S. & Mines, Gregory L. & Turchi, Craig S. & Zhu, Guangdong & Cohan, Sander & Angelini, Lorenzo & Bizzarri, Fabrizio & Consoli, Daniele & De Marzo, Alessio	<i>Comparative Analysis of Fluid Chemistry From Cove Fort, Roosevelt and Thermo: Implications for Geothermal Resources and Hydrothermal Systems on the East Edge of the Great Basin</i> , Summons, Stuart & Kirby, Stefan & Moore, Joe & Wannamaker, Phil & Allis, Rick	<i>Observations and Implications of Manetotelluric Data For Resolving Stratigraphic Reservoirs Beneath the Black Rock Desert, Utah</i> , Hardwick, Christian & Allis, Rick & Wannamaker, Philip



<b>ROOM: Capri Ballroom 4</b>	
<b>EGS 2 Chair:</b>	
8:00	<i>Analysis of Seismic Moment Tensor, Finite-Source Scaling and Fluid Imaging During EGS Resource Development at The Geysers, CA, Dreger, Douglas S. &amp; Gritto, Roland &amp; Boyd, O. Sierra</i>
8:20	<i>Simulation of Injection and Production and MEQ in Large-Scale Fracture Networks, Farmahini-Farahani, Moien &amp; Ghassemi, Ahmad</i>
8:40	<i>Completion Design Considerations for a Horizontal Enhanced Geothermal System, Olsen, Jeffrey &amp; Eustes, Alfred &amp; Fleckenstein, William &amp; Eker, Erdinc &amp; Baker, Reed &amp; Augustine, Chad</i>
9:00	<i>Thermal and Trace-Element Anomalies in the Eastern Snake River Plain Aquifer: Contribution to a Conceptual Model of the EGS Resources, Welhan, John</i>
9:20	<i>Geologic Setting of the Proposed West Flank Forge Site, California: Suitability for EGS Research and Development, Sabin, Andy &amp; Blake, Kelly &amp; Iazaro, Michael &amp; Blankenship, Douglas &amp; Kennedy, B. Mack &amp; McCullogh, Jesse &amp; DeOreo, Steve &amp; Hickman, Steve &amp; Glen, Jonathan &amp; Kaven, J. Ole &amp; Williams, Colin &amp; Phelps, Geoffrey &amp; Faulds, James &amp; Hinz, Nicholas &amp; Calvin, Wendy</i>
9:40	<b>COFFEE BREAK (9:40 - 10:10) IN EXPO</b>
<b>EGS 3 Chair:</b>	
10:10	<i>Hydraulic and Thermal Stimulation Program at Raft River Idaho, A DOE EGS, Bradford, Jacob &amp; McLennan, John &amp; Moore, Joseph &amp; Podgorney, Robert &amp; Tiwari, Shashank</i>
10:30	<i>Production Well Targeting at Newberry Volcano EGS Demonstration, Cladouhos, Trenton &amp; Swyer, Michael W. &amp; Uddenberg, Matthew E. &amp; Petty, Susan &amp; Nordin, Yini</i>
10:50	<i>Hydro-shearing and Hydraulic Fracturing for Enhanced Geothermal Systems in Archetypical Normal, Strike-Slip and Thrust Faulting Terrains, Finnilla, Aleta &amp; Dershowitz, William &amp; Doe, Thomas &amp; McLaren, Rob</i>
11:10	<i>Geologic Setting of the Proposed Fallon Forge Site, Nevada: Suitability For EGS Research &amp; Development, Faulds, James &amp; Blankenship, Douglas &amp; Hinz, Nicholas H. &amp; Sabin, Andy &amp; Nordquist, Josh &amp; Hickman, Stephen &amp; Glen, Jonathan &amp; Kennedy, Mack &amp; Siler, Drew L. &amp; Robertson-Tait, Ann &amp; Williams, Colin &amp; Calvin, Wendy &amp; Drakos, Peter</i>
11:30	<i>Numerical Simulation Model Comparisons for Enhanced Geothermal Reservoirs, Vazquez-Rubio, Ivan G.</i>

**Tuesday: Peppermill Executive Lunch Buffet**

**Soup:**

- Chef's Specialty Soup of the Day

**Chilled Items:**

- Mixed Baby Greens with Blue Cheese Dressing and Balsamic Vinaigrette
- Display of Seasonal Sliced Fruits and Berries,
- Penne Pasta Salad with Sun-dried Tomatoes, Pine Nuts, Mushrooms and Italian Vinaigrette

**Entrées:**

- Sliced Beef Tri Tip
- Wild Mushroom Sauce or Sautéed Chicken Breast in Butter with Lemon, Capers, Mushrooms and Pinot Grigio

**Accompaniments:**

- Roasted Garlic Potatoes
- Seasonal Vegetables
- Freshly Baked Rolls with Butter

**Dessert:**

- An assortment of our Pastry Chef's Finest Pastries
- Cakes
- Pies
- Tortes

**Refreshments:**

- Freshly Brewed Coffee
- Decaffeinated Coffee
- Hot and Iced Tea Service

**Posters available for viewing in  
the EXPO Hall 9am - 6pm**

	<b>ROOM: Capri Ballroom 1</b>	<b>ROOM: Capri Ballroom 2</b>	<b>ROOM: Capri Ballroom 3</b>
	<b>DRILLING 1 Chair:</b>	<b>SEDIMENTARY BASIN Chair:</b>	<b>DIRECT USE 2 Chair:</b>
1:30	<i>Use of Carbon Microfibers for Reinforcement of Calcium Aluminate - Class F Fly Ash Cement Activated With Sodium Metasilicate at up to 300°C, Pyatina, Tatiana &amp; Sugama, Toshifumi</i>	<i>Geostatistical Analysis of Bottom-hole Temperatures in the Denver and Williston Basins: North America, Crowell, Anna</i>	<i>Use of Waste Heat From Geothermal Power Plants Focusing on Improving Agriculture in Developing Countries, Gehringer, Magnus</i>
1:50	<i>Challenges of Cementing Olkaria Geothermal Field, Karanja, Nahashon</i>	<i>Sedimentary Geothermal Resources in the Piceance Basin, Colorado, Morgan, Paul</i>	<i>Accelerated Plant Growth Results From An Intensive Shallow Bottom Heat System Using Waste Geothermal Hot Water and Steam Condensate in Iceland, Dell, Robert &amp; Unnthorsson, Runar &amp; Wei, C.S. &amp; Foley, William</i>
2:10	<i>Well Design and Well Workover to Land Deep Production Casings in the Menengai Field, Khaemba, Abraham W.</i>	<i>Discrete Fracture Network Simulation for Sedimentary Enhanced Geothermal Systems: Red River Formation, Williston Basin, North Dakota, Hartig, Caitlin</i>	<i>Design of a Cooling System Using Geothermal Energy For Storage of Agricultural Products With Emphasis on Irish Potatoes in Rwanda, Africa, Uwera, Jane &amp; Ryuichi, Itoi &amp; Jalilnasrabad, Saeid &amp; Johannesson, Thorleikur &amp; Benediktsson, David Orn</i>
2:30	<b>COFFEE BREAK (2:30 - 2:50) IN EXPO</b>		
	<b>POWER PLANT 4 Chair:</b>	<b>PLAY FAIRWAYS 1 Chair:</b>	<b>OIL &amp; GAS Chair:</b>
2:50	<i>Tubular Biofilm Reactor for Hydrogen Sulphide Removal From Geothermal Cooling Water, Bierre, Emily &amp; Fullerton, Rob</i>	<i>Low-Temperature Geothermal Energy Characterization by Play Fairway Analysis for the Appalachian Basin of New York, Pennsylvania and West Virginia, Jordan, Teresa &amp; Camp, Erin &amp; Smith, Jared &amp; Whealton, Calvin &amp; Horowitz, Frank &amp; Stedinger, Jerry &amp; Tester, Jefferson &amp; Richards, Maria &amp; Hornbach, Matthew &amp; Frone, Zachary &amp; Bolat, Rahmi &amp; Anderson, Brian &amp; Xiaoning, He &amp; Welcker, Kelydra</i>	<i>A Basin-Scaled Geothermal Assessment of Co-Produced Waters in Oil and Gas Fields: Uinta Basin, Utah, USA, Hardwick, Christian &amp; Willis, Hobie &amp; Gwynn, Mark L.</i>
3:10	<i>Use of a Waste Heat Boiler to Capture Energy From Flammable Noncondensable Gas at Geothermal Power Plants, Avery, John &amp; Benn, Brian &amp; McIntush, Kenneth E. &amp; Mamrosh, Darryl &amp; Beitler, Carrie</i>	<i>Adaptation of a Petroleum Exploration Tool to Geothermal Exploration: Preliminary Play Fairway Model of Tularosa Basin, New Mexico and Texas, Nash, Gregory D. &amp; Bennett, Carlon R.</i>	<i>Produced Water Treatment Using Switchable Polarity Solvent Forward Osmosis (SPS FO) Technology, Wendt, Daniel S. &amp; Mines, Gregory L. &amp; Orme, Christopher J. &amp; Wilson, Aaron D.</i>
3:30	<i>Coso Case Study: 22 Years of Reliable Sulfur Removal, Kolar, Mark &amp; Osgood, Steve &amp; Echt, William</i>	<i>Hydrogeologic Windows: Detection of Blind and Traditional Geothermal Play Fairways in Southwestern New Mexico Using Conservative Element Concentrations and Advective-Diffusive Solute Transport, Person, Mark &amp; Kelley, Shari &amp; Kelley, Richard &amp; Karra, Satish &amp; Harp, Dylan &amp; Witcher, James &amp; Bielicki, Jeffrey &amp; Sutula, Glenn &amp; Middleton, Richard &amp; Pepin, Jeff</i>	<i>Co-Produced and Low-Temperature Geothermal Resources in the Williston Basin, Gosnold, Will &amp; Crowell, Anna &amp; Nordeng, Stephan &amp; Mann, Michael</i>
4:00	<b>POSTER SESSION (4:00 - 6:00) IN EXPO</b>		

**Posters available for viewing in  
the EXPO Hall 9am - 6pm**

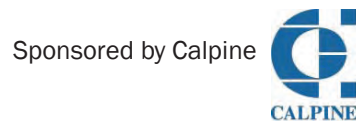
<b>ROOM: Capri Ballroom 4</b>	
<b>REGULATORY Chair:</b>	
1:30	<i>Assessment of Air Quality For Development Options at Olkaria Geothermal Field in Kenya, Ndeti, Cornelius</i>
1:50	<i>Progress Report in Silencing ORC Turboexpanders in Geothermal Service, Norris, Thomas &amp; Deanda, Kier</i>
2:10	<i>Alternative Water Policy Assessment for Enhanced Geothermal Systems - A Case Study, Schroeder, Jenna N. &amp; Horner, Robert M. &amp; Harto, Christopher B. &amp; Clark, Corrie E.</i>
2:30	<b>COFFEE BREAK (2:30 – 2:50) IN EXPO</b>
<b>GEOLOGY 1 Chair:</b>	
2:50	<i>Evaluation of Subsurface Structures Using Hydrothermal Alteration Mineralogy: A Case Study of Olkaria South East Field, Mwania, Michael</i>
3:10	<i>Examining Subsurface Process Captured in Geothermal Host Rocks Using Computerised Tomography and Scanning Electron Microscopy, Lynne, Bridget Y.</i>
3:30	<i>Geothermal Implications of Rift Zone Mini-Grabens, Geological and Geophysical Structure of the Reykjafell Mini-Graben, Hengill Geothermal Field SW Iceland, Hardarson, Bjorn S. &amp; Kristinsson, Sigurdur G. &amp; Karlsdottir, Ragna &amp; Einarsson, Gunnlaugur M.</i>
4:00	<b>POSTER SESSION (4:00 - 6:00) IN EXPO</b>



**GRC Student Poster Competition**

As part of the Poster Session entries in the Student Poster Competition will be on display in the Expo hall. The winners will be announced during the GRC Poster Session/GEA Expo Networking Reception on Tuesday, 4pm-6pm.

Calpine has kindly donated the prizes this year. Awards of \$1,000 will be given to the two winning student posters.



*Last year's winners James & Anna Crowell (center) are flanked by award presenters GRC Board Members Tony Boyd (left) and Charlene Wardlow (right).*

Tuscany Ballroom - Expo Hall | Chair: Alexandra Reid

**BASIN & RANGE**

- *Geothermal Potential in the Basins of East-Central and Southeastern Nevada*, Gwynn, Mark\*
- *Influence of Continuously Variable Permeability and Basin Rock Properties on Three Dimensional Heat and Mass Balance Models of Basin & Range Geothermal Systems*, Moulding, Ann & Brikowski, Tom
- *Origin and Potential Geothermal Significance of China Hat and Other Late Pleistocene Topaz Rhyolite Lava Domes of the Blackfoot Volcanic Field, SE Idaho*, McCurry, Michael & Pearson, David & Welhan, John & Kobs-Natwotniak, Shannon & Fisher, Meghan

**DIRECT USE**

- *Accelerated Plant Growth Results From An Intensive Shallow Bottom Heat System Using Waste Geothermal Hot Water and Steam Condensate in Iceland*, Dell, Robert & Unnthorsson, Runar & Wei, C.S. & Foley, William\*
- *Experimental Comparison of Two Heating and Cooling Based Thermal Response Tests*, Feng, Lufei & Wang, Sen & Wang, Huajun & Zuo, Liming & Wang, Ping & Wang, Ma
- *Geothermal Direct Utilization-Design and Optimization*, Jalilinasrabad, Saeid\*
- *Point of Use Automated Irrigation System For Enhanced Bottom Heat Agriculture Using Waste Steam Condensate in New York City And Waste Geothermal Hot Water and Steam Condensate in Iceland*, Foley, William & Dell, Robert & Wei, C.S. & Unnthorsson, Runar\*
- *Study of Thermal Performance and Operation Strategy of a Compound Ground Source Heat Pump Heating System*, Wei, Zhang & Lv, Junxin & Jiulong, Liu
- *The Lindal Diagram for Mining Applications*, Patsa, Eleni & Zarrouk, Sadiq & Vanzyl, Dirk

**DRILLING**

- *Broaching: An Effective Method of Well Intervention for Calcite Scale Removal*, Gilliland, John & Wilson, Daniel Robert & Austin, Andrew\*
- *Challenges of Cementing Olkaria Geothermal Field*, Karanja, Nahashon\*

**EAST AFRICA RIFT**

- *Characterization of Quaternary Extensional Structures: Tulu-Moye Geothermal Prospect, MER*, Admassu, Engdawork & Worku, Selamawit\*

**EGS**

- *Hydraulic and Thermal Stimulation Program at Raft River Idaho, A DOE EGS*, Bradford, Jacob & McLennan, John & Moore, Joseph & Podgorney, Robert & Tiwari, Shashank\*
- *Hydro-shearing and Hydraulic Fracturing for Enhanced Geothermal Systems in Archetypical Normal, Strike-Slip and Thrust Faulting Terrains*, Finnilla, Aleta & Dershowitz, William & Doe, Thomas\*
- *Numerical Simulation Model Comparisons for Enhanced Geothermal Reservoirs*, Vazquez-Rubio, Ivan G.\*

- *Permeability Measurement of Thermally Fractured Granite Under Confining Stress at 350-450°C*, Numakura, Tatsuya\*
- *Thermal and Trace-Element Anomalies in the Eastern Snake River Plain Aquifer: Contribution to a Conceptual Model of the EGS Resources*, Welhan, John\*

**EXPLORATION**

- *Heat Flow and Helium Isotopes in the Geothermal Areas of Tuscany (Central Italy)*, Bellani, Stefano & Magro, Gabriella & Gherardi, Fabrizio
- *Investigating Potential Geothermal Resources in Western Saudi Arabia*, Mellors, Robert J. & Camp, Victor & Harris, David & Al-Amri, Abdullah
- *Plumbing and Political Will: Low Temperature Geothermal Power Exploration in Pagosa Springs, Colorado*, Mink, Leland & Smith, Jerry & Skeehan, Kirsten & Foley, Paul\*
- *Structural Constraints of Buffalo Valley Hot Springs, North-Central Nevada*, Molisee, Danielle D. & Bell, John W.
- *Will Stratigraphic Reservoirs Provide the Next Big Increase in U.S. Geothermal Power Generation?*, Allis, Rick & Hardwick, Christian & Gwynn, Mark & Mines, Greg & Moore, Joseph\*

**GEOCHEMISTRY**

- *Geochemistry and Alteration Mineralogy of Well NWS-10, Mt. Sabalan Geothermal Field, NW-Iran*, Zarei, Elahe & Tutti, Faramarz & Porkhial, Soheil\*
- *The Importance of Hydrodynamic Conditions in Silicate Scale Growth Inferred From Numerical Simulation*, Mizushima, Akihiro & Mikada, Hitoshi & Takekawa, Junichi
- *Variations in the Chemical Composition of Epidote in the Karaha-Telaga Bodas Geothermal System*, McConville, Emma

**GEOLOGY**

- *Distribution of Hydrothermal Alteration in the "Cerritos Colorados" Geothermal Field, Mexico*, Rocha-Ruiz, David Alejandro & Hernandez-Zuniga, R.\*
- *Examining Subsurface Processes Captured in Geothermal Host Rocks Using Computerised Tomography and Scanning Electron Microscopy*, Lynne, Bridget Y.\*
- *The Structural Controls of the Black Warrior Blind Geothermal System, Truckee Range, Washoe-Churchill Counties, NV, USA*, Sadowski, Andrew & Faulds, James\*
- *The Thermal History of Garland Mineral Springs, North Cascades, Washington, From Apatite Fission Track Analysis of Well Cuttings From Geothermal Exploration Well GAR-1*, Callahan, Owen & Cladouhos, Trenton & Larson, Benjamin & Ketcham, Richard A.\*

**GEOPHYSICS**

- *Magnetic Analysis of Dieng-Batur Geothermal Area*, Rajayu, Dewi & Fatahillah, Hilmi\*
- *Preliminary Results of a Heat Flow Study of the Williston Basin Using Temporarily Abandoned Oil Wells, Western North Dakota*, McDonald, Mark R. & Gosnold, William D. & Nordeng, Stephan H.\*

## Tuscany Ballroom - Expo Hall | Chair: Alexandra Reid

- *Potentiality of Continuous Measurements Using a Small-Sized Superconducting Gravimeter for Geothermal Reservoir Monitoring*, Sugihara, Mitsuhiro & Nawa, Kazunari & Ishido, Tsuneo & Soma, Nobukazu & Nishi, Yuji
- *Quantifying How Errors in Thermal Conductivity Estimates Affect Geothermal Production Models*, Crowell, James\*
- *Separating Intrinsic From Scattering Seismic Wave Attenuation From Sonic Logs in a Geothermal Field*, Duran, Evert & Van Wijk, Kasper & Adam, Ludmila & Wallis, Irene\*

## INJECTION

- *Status Review of Particle Deposition in Porous Media*, Cui, Mingjie & Lei, Haiyan & Dai, Chuanshan

## OIL &amp; GAS

- *A Basin-Scaled Geothermal Assessment of Co-Produced Waters in Oil and Gas Fields: Uinta Basin, Utah, USA*, Hardwick, Christian & Willis, Hobie & Gwynn, Mark L.\*
- *Co-Produced and Low-Temperature Geothermal Resources in the Williston Basin*, Gosnold, Will & Crowell, Anna & Nordeng, Stephan & Mann, Michael\*

## PLAY FAIRWAYS

- *Adaptation of a Petroleum Exploration Tool to Geothermal Exploration: Preliminary Play Fairway Model of Tularosa Basin, New Mexico and Texas*, Nash, Gregory D. & Bennett, Carlon R.\*
- *Geothermal Play Fairway Analysis of Potential Geothermal Resources in NE California, NW Nevada, and Southern Oregon: A Transition between Extension-Hosted and Volcanically-Hosted Geothermal Fields*, McClain, James & Dobson, Patrick & Cantwell, Carolyn & Conrad, Mark & Fowler, Andrew & Gasperik, Erica & Glassley, William & Hawkes, Samuel & Schiffman, Peter & Siler, Drew & Sonnenthal, Eric & Spycher, Nicolas & Zerenberg, Robert
- *Geothermal Play-Fairway Analysis of Washington State Prospects*, Forson, Corina & Swyer, Michael W. & Schmalzle, Gina M. & Czajkowski, Jessica L. & Cladouhos, Trenton T. & Davatzes, Nicholas & Norman, David K. & Cole, Ryan A.\*
- *Integration of Data in a Play Fairway Analysis of Geothermal Potential Across the State of Hawaii*, Lautze, Nicole & Thomas, Donald & Hinz, Nicholas & Ito, Garrett & Frazer, Neil & Waller, David & Schuchmann & Hannah & Brady, Mark\*
- *Low-Temperature Geothermal Energy Characterization by Play Fairway Analysis for the Appalachian Basin of New York, Pennsylvania and West Virginia*, Jordan, Teresa & Camp, Erin & Smith, Jared & Wheaton, Calvin & Horowitz, Frank & Stedinger, Jerry & Tester, Jefferson & Richards, Maria & Hornbach, Matthew & Frone, Zachary & Bolat, Rahmi & Anderson, Brian & Xiaoning, He & Welcker, Kelydra\*
- *Play Fairway Analysis for the Central Cascadia Arc-Backarc Regime, Oregon: Preliminary Indications*, Wannamaker, Philip E. & Meigs, Andrew J. & Kennedy, B. Mack & Moore, Joseph N. & Sonnenthal, Eric L. & Maris, Virginia & Trimble, John D.\*

- *Play Fairway Analysis of the Eastern Great Basin Extensional Regime, Utah: Preliminary Indications*, Wannamaker, Philip E. & Pankow, Kristine L. & Moore, Joseph N. & Simmons, Stuart F. & Nash, Gregory D. & Maris, Virginia & Batchelor, Chase & Hardwick, Christian L.\*
- *Preliminary Ranking of Geothermal Potential in the Cascade and Aleutian Volcanic Arcs, Part II: Structural - Tectonic Settings of the Volcanic Centers*, Hinz, Nicholas & Coolbaugh, Mark & Shevenell, Lisa & Melosh, Glenn & Cumming, William & Stelling, Pete\*
- *Snake River Plain Play Fairway Analysis- Phase 1 Report*, Shervais, John W. & Glen, Jonathan M. & Liberty, Lee M. & Dobson, Patrick & Gasperikova, Erika & Sonnenthal, Eric & Visser, Charles & Nielson, Dennis & Garg, Sobodh & Evans, James P. & Siler, Drew & DeAngelo, Jacob & Athens, Noah & Burns, Erick\*

## POWER PLANT

- *Predictive Functional Control Applied in Vapor Temperature Control of Organic Rankine Cycle System*, Huang, Daxing & Wang, Zhigang & Fu, Wencheng\*
- *Thrust Bearing Load Observations in Deep-Well Enclosed Lineshaft Pumps*, Reede, Chris & Doumanidis, Haris & Aureli, Matteo\*

## REGULATORY

- *Progress Report in Silencing ORC Turboexpanders in Geothermal Service*, Norris, Thomas & Deanda, Kier\*

## RESOURCE ASSESSMENT

- *Geothermal Resource Reporting Methodology (GRRM) Developed for the U.S. Department of Energy Geothermal Technologies Office*, Young, Katherine & Wall, Anna & Dobson, Patrick\*
- *Using Geothermal Occurrence Model as an Analogue For Estimating Potential Resource Size*, Terry, Rachel & Young, Katherine\*

## RESERVOIR MANAGEMENT

- *Monitoring Ground-Surface Heating During Expansion of the Casa Diablo Production Well Field at Mammoth Lakes, California*, Bergfeld, Deborah & Vaughan, Greg & Evans, William C. & Olsen, Eric
- *Some Methods For Reducing of Steam Deficit at Geothermal Power Plants Exploitation: Experience of Kamchatka (Russia)*, Shulyupin, Aleksandr & Chernev, Ivan

## SCALING &amp; MINERAL EXTRACTION

- *Case Study of the Change of Scale With Production*, Yanagisawa, Norio\*
- *Screening the Effects of Ligand Chemistry and Geometry on Rare Earth Element Partitioning From Saline Solutions to Functionalized Adsorbents*, Noack, Clinton W. & Perkins, Kedar & Washburn, Newell & Dzombak, David A. & Karamalidis, Athanasios K.\*

## SEDIMENTARY BASIN

- *Geostatistical Analysis of Bottom-hole Temperatures in the Denver and Williston Basins: North America*, Crowell, Anna\*

## TOOLS

- *Ultra-High Temperature (250°C+) and Wide Operating Temperature Range Ultracapacitor Enabling Downhole Power Source For Geothermal Exploration*, Brambilla, Nicolo & Martini, Fabrizio\*

\*Also an oral presentation

	ROOM: Capri Ballroom 1	ROOM: Capri Ballroom 2	ROOM: Capri Ballroom 3
	<b>DRILLING 2</b> Chair:	<b>PLAY FAIRWAYS 2</b> Chair:	<b>RESERVOIR ENGINEERING/MODELING</b> Chair:
8:00	<i>Optimizing Geothermal Drilling With Petroleum Technology</i> , Denninger, Kate & Eustes, Alfred & Baker, Walt & Bolton, Dan & Bell, Jason & Bell, Sean & Jacobs, Amelia & Nagandran, Uneshddarann & Quick, Ralph & Tilley, Mitch & Visser, Charles	<i>Preliminary Ranking of Geothermal Potential in the Cascade and Aleutian Volcanic Arcs, Part I: Data Collection</i> , Shevenell, Lisa & Coolbaugh, Mark & Hinz, Nicholas H. & Stelling, Pete & Melosh, Glenn & Cumming, William & Kreemer, Corne	<i>Modelling the Effects of Seasonal Variations in Rainfall and Production Upon the Aquifer and Surface Features of Rotorua Geothermal Field</i> , Ratouis, Thomas & O'Sullivan, Mike & O'Sullivan, John
8:20	<i>Development of a Directional Drilling System for Operation at 300°C for Geothermal Applications</i> , Chatterjee, Kamalesh & Macpherson, John & Dick, Aaron & Grimmer, Harald & Klotzer, Sundaie & Schroder, Jon & Epplin, Dave & Hohl, Carsten & Gacek, Sobieslaw	<i>Preliminary Ranking of Geothermal Potential in the Cascade and Aleutian Volcanic Arcs, Part II: Structural - Tectonic Settings of the Volcanic Centers</i> , Hinz, Nicholas & Coolbaugh, Mark & Shevenell, Lisa & Melosh, Glenn & Cumming, William & Stelling, Pete	<i>Assessing the Effect of Realistic Reservoir Features on the Performance of Sedimentary Geothermal Systems</i> , Zerpa, Luis E. & JaeKyoung Cho & Augustine, Chad
8:40	<i>Broaching: An Effective Method of Well Intervention for Calcite Scale Removal</i> , Gilliland, John & Wilson, Daniel Robert & Austin, Andrew	<i>Preliminary Ranking of Geothermal Potential in the Aleutian and Cascade Volcanic Arcs, Part II, Coolbaugh, Mark &amp; Shevenell, Lisa &amp; Hinz, Nicholas &amp; Stelling, Pete &amp; Melosh, Glenn &amp; Cumming, William &amp; Kreemer, Corne &amp; Wilmarth, Maxwell</i>	<i>DNA-Encapsulated Silica Nanoparticle Tracers for Fracture Characterization</i> , Zhang, Yuran & Manley, Timothy & Li, Kewen & Horne, Roland
9:00	<i>Comparison of Drilling Technologies Between Top Drive and Rotary Table in Geothermal Field: A Case Study of Olkaria Geothermal Field</i> , Kahutu, James & Atwa, Victor	<i>Geothermal Play-Fairway Analysis of Washington State Prospects</i> , Forson, Corina & Swyer, Michael W. & Schmalzle, Gina M. & Czajkowski, Jessica L. & Cladouhos, Trenton T. & Davatzes, Nicholas & Norman, David K. & Cole, Ryan A.	<i>3D Simulation of Mixed-mode Poroelastic Fracture Propagation For Reservoir Stimulation</i> , Kumar, Dharmendra & Ghassemi, Ahmad
9:20	<i>Modelling of Geothermal Drilling Parameters - A Case Study of Well MW-17 in Menengai Kenya</i> , Miyora, Thomas & Jonsson, Magnus & Thorhallsson, Sverrir	<i>Play Fairway Analysis of the Eastern Great Basin Extensional Regime, Utah: Preliminary Indications</i> , Wannamaker, Philip E. & Pankow, Kristine L. & Moore, Joseph N. & Simmons, Stuart F. & Nash, Gregory D. & Maris, Virginie & Batchelor, Chase & Hardwick, Christian L.	
9:40		<b>COFFEE BREAK (9:40 - 10:10) IN EXPO</b>	
	<b>TOOLS</b> Chair:	<b>PLAY FAIRWAYS 3</b> Chair:	<b>EAST AFRICAN RIFT</b> Chair:
10:10	<i>Integrated Cooling Systems For an Extended Operation Range of Borehole Tools</i> , Holbein, Benedict & Isele, Jorg & Spatafora, Luigi	<i>Integration of Data in a Play Fairway Analysis of Geothermal Potential Across the State of Hawaii</i> , Lautze, Nicole & Thomas, Donald & Hinz, Nicholas & Ito, Garrett & Frazer, Neil & Waller, David & Schuchmann & Hannah & Brady, Mark	<i>The Initial-State Geochemistry as a Baseline for Geochemical Monitoring at Olkaria Domes, Kenya</i> , Wamalwa, Ruth
10:30	<i>Cementing Tool Supports Cement Plug in Large Diameter Geothermal Well Casing</i> , Balamir, Ozgur & Rickard, William M. & Wilson, Fred & Harestad, Kristian & Aarebraat, Per	<i>Play Fairway Analysis of the Central Cascadia Arc-Backarc Regime, Oregon: Preliminary Indications</i> , Wannamaker, Philip E. & Meigs, Andrew J. & Kennedy, B. Mack & Moore, Joseph N. & Sonnenthal, Eric L. & Maris, Virginie & Trimble, John D.	<i>Stakeholder Engagement Through Participatory Research: A Case Study of Eburru Geothermal Wellhead Generator in Nakuru County, Kenya</i> , Barasa, Philip J. & Mathenge, Rose W.
10:50	<i>A New Technique And Sensor For Determining Steam Quality Along a Wellbore</i> , Kerr, Robert, Gleason, Brian D. & Olzick, Adam & Denzel, Bill	<i>Integrated Geologic and Geophysical Approach For Establishing Geothermal Play Fairways and Discovering Blind Geothermal Systems in the Great Basin Region, Western USA: A Progress Report</i> , Faulds, James E. & Hinz, Nicholas H. & Coolbaugh, Mark F. & Shevenell, Lisa A. & Siler, Drew L. & Depolo, Craig M. & Hammond, William H. & Kreemer, Cornelis & Oppliger, Gary & Wannamaker, Philip E. & Queen, John & Visser, Charles	<i>The Western Branch of the East African Rift: A Review of Tectonics, Volcanology and Geothermal Activity</i> , Hardarson, Bjorn S.
11:10	<i>Ultra-High Temperature (250°C+) and Wide Operating Temperature Range Ultracapacitor Enabling Downhole Power Source For Geothermal Exploration</i> , Brambilla, Nicolo & Martini, Fabrizio	<i>Snake River Plain Play Fairway Analysis- Phase 1 Report</i> , Shervais, John W. & Glen, Jonathan M. & Liberty, Lee M. & Dobson, Patrick & Gasperikova, Erika & Sonnenthal, Eric & Visser, Charles & Nielson, Dennis & Garg, Sobodh & Evans, James P. & Siler, Drew & DeAngelo, Jacob & Athens, Noah & Burns, Erick	<i>Geology and Evolution of Eburru-Badlands Geothermal Prospect-Central Kenyan Rift</i> , Ronoh, Irene
11:30	<i>Design of a Digital Data Transmission Tool for Precision Temperature Logging</i> , Erkan, Kamil & Dogruel, Murat & Bayat, Kemal & Akkoyunlu, Bulent & Tayanc, Mete & Hamamci, Savas & Balkan, Elif	<i>Cerro Prieto, Mexico - A Convective Extensional Geothermal Play</i> , Gutierrez-Negrin, Luis C.A.	<i>Characterization of Quaternary Extensional Structures: Tulu-Moye Geothermal Prospect, MER</i> , Admassu, Engdawork & Worku, Selamawit

<b>ROOM: Capri Ballroom 4</b>	
<b>GEOLOGY 2</b> <b>Chair:</b>	
8:00	<i>Tourmaline in Geothermal Systems: An Example From Darajat, Indonesia</i> , Etzel, Thomas & Moore, Joseph & Bowman, John & Granhahbakti-Intani, Rindu & Golla, Glenn & Nash, Greg & Jones, Clay
8:20	<i>The Thermal History of Garland Mineral Springs, North Cascades, Washington, From Apatite Fission Track Analysis of Well Cuttings From Geothermal Exploration Well GAR-1</i> , Callahan, Owen & Cladouhos, Trenton & Larson, Benjamin & Ketcham, Richard A.
8:40	<i>The Structural Controls of the Black Warrior Blind Geothermal System, Truckee Range, Washoe-Churchill Counties, NV, USA</i> , Sadowski, Andrew & Faulds, James
9:00	<i>Distribution of Hydrothermal Alteration in the "Cerritos Colorados" Geothermal Field, Mexico</i> , Rocha-Ruiz, David Alejandro & Hernandez-Zuniga, R.



**Posters available for viewing in the EXPO Hall 9am - 12noon**

**GRC Annual Membership Meeting & Awards Luncheon**

12:00 - 2:00pm  
Room: Naples 7

Cost: \$65

The GRC will honor the best and brightest of the global geothermal community at its Annual Membership Meeting & Awards Luncheon. The GRC will present its prestigious Aidlin, Holt, Pioneer, Ramey, and Special Achievement awards, as well as awards for Best Technical Session Presentations and Photo Contest.



*The last time we were in Reno, R. Gordon Bloomquist won the Joseph W. Aidlin Award "For outstanding contributions to the Geothermal Resources Council and to the development of geothermal resources".*



*Joe LaFleur is pleased to be awarded 2nd place in the 2012 GRC Photo Contest. Charlene Wardlow is the presenter.*



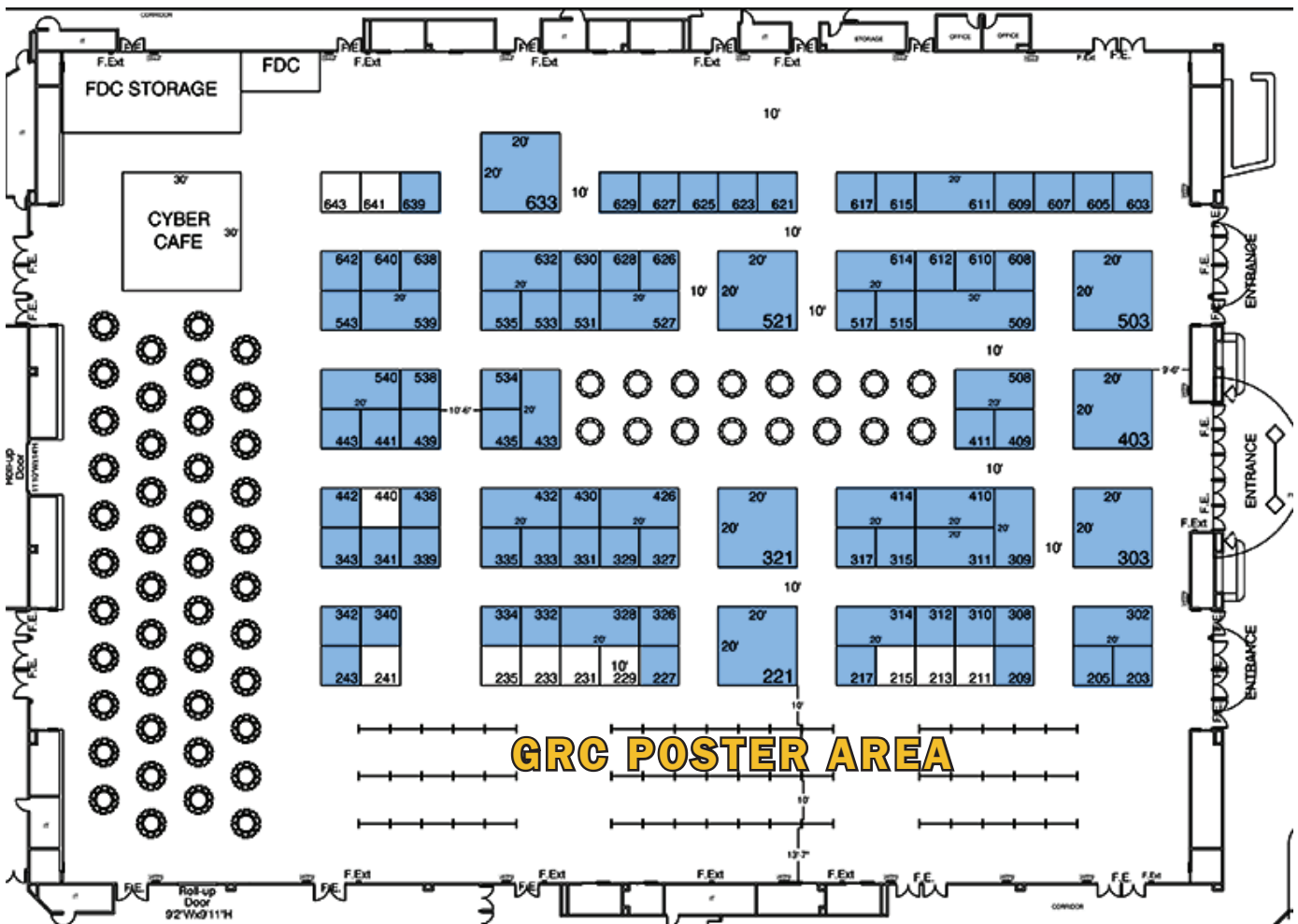
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ENERGY  
ASSOCIATION**

**DON'T MISS OUT!**

**Booths still available!!!**

To register go to:

[www.geothermalenergy2015.org](http://www.geothermalenergy2015.org)



Please check on the GEA website for most current information.



## GEA Geothermal Energy Expo *(as of 7/10/15)*

Every year, the GEA Geothermal Energy Expo hosts North America's largest gathering of vendors providing support for geothermal resource exploration, characterization, development, production and management.

It provides a unique opportunity for exhibitors to showcase their projects, equipment, services and state of the art technology to the geothermal community. More than 100 exhibitors. For more information please visit: [www.geothermalenergy2015.com](http://www.geothermalenergy2015.com).

Please note: Entry to the GEA Expo is free with GRC Annual Meeting registration.

### 2015 Exhibitors

Company	Booth	Company	Booth
3JTech	331	MD&A	640
Allied Group	334	Mill Man Steel	438
AltaRock Energy	315	Mitsubishi Hitachi Power Systems	521
AMSA, Inc.	517	Nalco Company	616,614
Baseload Power Generation Parts and Service, LLC	227	Nash, A Gardner Denver Product	623
Boart Longyear	607	National Renewable Energy Laboratory	441
Brush	333	Nevada Division of Minerals	310
BS&B Safety Systems, LLC	702	Ormat Technologies, Inc.	403
Bureau of Land Management	312	Paul Graham Drilling & Service Co	542,540
Cameron	515	PERMA-PIPE®	443
Capuano Engineering Company	533	PM International Suppliers, LLC	632
Coastal Technologies, Inc.	535	POWER Engineers, Inc.	409
Cooling Tower Depot, Inc.	621	PowerChem Technology	433,532
Dewhurst Group	412,410	Quantec Geoscience	340
Directorate of Geothermal, Ministry of Energy and Mineral Resources of Indonesia	342	Resource Cementing LLC	538
DOSECC Exploration Services, LLC	327	REXA	638
Drill Cool Systems, Inc.	543	Rotork	627
EGS Consulting, Inc.	531	Schlumberger	509,511,513
Emerson	335	Scientific Drilling International	321
Environmental Science Associates	341	Sinclair Well Products	603
EvapTech, Inc	308	Snake River Geothermal Consortium	309
EXERGY	203	SNC-Lavalin Thermal Power	408
Expro	303	Solenis	534
Fuji Electric Co., Ltd.	508,510	SPX Cooling Technologies	316,314
GEFCO	439	ThermaSource, LLC	416,414
Geotemps, Inc.	332	Thermochem, Inc.	630
Geothermal Development Associates	428,426	TIMET	209
Geothermal Institute	343	TIX-IKS Corporation	642
GeothermEx	509,511,513	TNG Energy Services	541,539
Global Power Solutions	217	Toshiba International Corporation	313,311
GNS Science	442	Turboden	521
Horizon Well Logging	326	U.S.-East Africa Geothermal Partnership (EAGP)	611,613
Hydro Resources	626	US Department of Energy Geothermal Technologies Office	330,328
Indar Electric, S.L.	629	USC Center of Geothermal Studies	639
Industrial Cooling Solutions	302,304	Val-Matic Valve & Mfg Corp.	617
Itasca	605	Veizades & Associates, Inc.	628
ITT Goulds Pumps	503	Vooner FloGard Corporation	434,432
John M. Phillips, LLC	329	Webco Industries, Inc.	608
Keller Electrical Industries, Inc.	435	WEG Electric Corp.	610
Kelly Pipe	317	Well Analysis Corporation	529,527
KMS Technologies	205	Wieland Thermal Solutions, Lda	615
Kuster Company/ALT	339	WWT International	609
Leapfrog Software (ARANZ Geo Canada)	625	Zonge International Inc	612
Mannvit	430		

# GRC Hotel Accommodations

All the events and accommodation are in one location, the luxurious **Peppermill Resort Spa Casino**, the only resort in the United States whose heating source is totally provided from geothermal energy produced on the immediate property.

## Discounted room rates end August 28.

### Peppermill Resort Spa Casino

2707 South Virginia Street

Reno, NV 89502, USA

Tel: (866) 821-9996

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### Choose from three room styles at discounted rates:

#### Peppermill North & West Wings



Peppermill North & West Wing room

The newly remodeled Peppermill North and West Wings are separate from the main resort, and located across the skywalk on the third floor of the Peppermill Tower or adjacent to the Tuscany Tower via an outdoor

covered walkway. The North and West Wings at Peppermill Reno offer comfortable hotel rooms with approximately 300 sq. ft. of space with mahogany furnishings and marble bathrooms. One King Bed or Two Double Beds can be requested and are based upon availability.

**USD 79.00 Average nightly rate +Taxes & Fees**

#### Peppermill Tower Room



Peppermill Tower room

Award winning luxurious tower rooms offer panoramic views of the majestic Sierra Nevada mountains. These richly appointed rooms are designed in a spacious 365 sq. ft. floor plan that offers smoking or non smoking rooms. One King Bed or Two Queen Beds

available on request.

**USD 99.00 Average nightly rate +Taxes & Fees**

#### Tuscany Tower Suite



Tuscany Tower Suite

The Crown Jewel of a \$400 million expansion is represented in the lavish accommodations you will find in the new Tuscan suite. Hand painted Italian art and private foyers provide an elegant and personal space. From custom made pillow top king beds and

42 inch plasma television to the spacious marble bathroom with European soaking tub, separate marble shower and high def television, you are sure to find true elegance. One King or Two Kings available upon request.

**USD 139.00 Average nightly rate +Taxes & Fees**

Through a special arrangement the GRC/GEA room rate (single and double) this year starts at an affordable \$79 (plus applicable fees and taxes).

- If you make your reservations over the phone make sure you mention you are part of the Geothermal Resources Council/ Geothermal Energy Association group to get the special rate.

OR

- We strongly recommend making your hotel reservations on-line through a dedicated Webpage available from the GRC website at [www.geothermal.org](http://www.geothermal.org). The preferred rate is automatically applied.

**IMPORTANT:** It has been brought to our attention that two companies, **Global Housing Corp** and **CBS International**, have been contacting exhibitors by email claiming to be offering a 5% discount on hotel rooms.

**We are not affiliated with these companies and believe it is a scam.** Do not provide any credit card or payment information!!!

Use the dedicated website for GRC and GEA hotel room reservations available from the GRC website at [www.geothermal.org](http://www.geothermal.org). The preferred rate is automatically applied.

# GRC 2015 ANNUAL MEETING

## Registration Form

Peppermill Resort Spa Casino • Reno, Nevada • USA

September 20 - September 23

Please use one form for each registration. Thank you.

PLEASE TYPE OR PRINT CLEARLY - All correspondence and a list of participants will be sent to the address provided below.

FIRST & LAST NAME		
NAME ON BADGE		
NAME OF COMPANY OR INSTITUTION		
ADDRESS		
CITY	STATE/PROVINCE	POSTAL CODE
COUNTRY		
PHONE		
FAX		
E-MAIL		
NAME(S) OF ACCOMPANYING GUEST(S) (NON-MEETING REGISTRANTS)		

Guest(s) are allowed access to GEA Energy Expo only. Lunch NOT included for guest(s) but may be ordered separately (see below). Guest Passes can **only** be picked up by paid registrant.

### REGISTER EARLY!

As of August 31, registration will require an additional fee of up to \$100 per person.

The 3-day registration includes entry to the Opening Reception, the International Luncheon, the GEA Expo and a copy of the *Transactions* CD-ROM.

**On-site registration will be charged an additional \$50 late fee.**

**Early Bird Registration Expires: August 30, 2015**

(must be postmarked or faxed by 8/30/2015)

**Its easy to register online! Go to: [www.geothermal.org](http://www.geothermal.org)**

### REGISTER EARLY!

- 3-Day: Current GRC Member (**includes** *Transactions*, Vol. 39 on CD-ROM) (by Aug. 30) \$795 \$ \_\_\_\_\_  
 Does *not* include 2016 Membership Dues, **Includes** lunch for Mon. & Tues. (after Aug. 30) \$895 \$ \_\_\_\_\_  
 Choose Monday Lunch Option:  Lunch in Expo  International Lunch
- 3-Day: Non-GRC Member (**includes** a complimentary GRC Partial 2015 and 2016 full year membership **and** *Transactions*, Vol. 39 on CD-ROM), **Includes** lunch for Mon. & Tues. (by Aug. 30) \$895 \$ \_\_\_\_\_  
 Do not want membership (after Aug. 30) \$995 \$ \_\_\_\_\_  
 Choose Monday Lunch Option:  Lunch in Expo  International Lunch
- 3-Day: Student Registration: (*must fax a copy of current academic identification/class schedule*) \$5 \$ \_\_\_\_\_  
**Includes** lunch for Mon. & Tues. Plus a complimentary partial 2015 and 2016 Full-Year Membership and *Transactions*, Vol. 39 on CD-ROM  
 Choose Monday Lunch Option:  Lunch in Expo  International Lunch
- 1-Day: Registration: (CHECK ONE OR MORE)
- Monday  Tuesday (by Aug. 30) \$375 per day \$ \_\_\_\_\_  
 Does *not* include 2016 Membership Dues, **Includes** lunch for the days selected. (after Aug. 30) \$475 per day \$ \_\_\_\_\_  
 Choose Monday Lunch Option:  Lunch in Expo  International Lunch
- Wednesday \$175 \$ \_\_\_\_\_  
 Does *not* include Lunch or 2016 Membership Dues

**REGISTRATION TOTAL: \$ \_\_\_\_\_**

**ADDITIONAL** copies of *Transactions*, Vol. 39 on CD-ROM: (*picked up at conference*) Additional CDs# \_\_\_\_\_ @ \$27 ea. \$ \_\_\_\_\_  
 (Post-meeting price is \$50)

**ADDITIONAL** lunch tickets @ \$35 per ticket: Mon. \_\_\_\_\_ Tues. \_\_\_\_\_ Additional Lunch Ticket Total: \$ \_\_\_\_\_

**PAGE 1 SUBTOTAL: \$ \_\_\_\_\_**

# GRC 2015 ANNUAL MEETING

## 2016 MEMBERSHIP RENEWAL

- Regular \$100 \$ \_\_\_\_\_
- Retired \$50 \$ \_\_\_\_\_
- Benefactor \$180 \$ \_\_\_\_\_
- Company/Institutional \$500 \$ \_\_\_\_\_
- Supporting \$1,000 \$ \_\_\_\_\_
- Sustaining \$1,750 \$ \_\_\_\_\_
- Patron \$2,500 \$ \_\_\_\_\_
- Group Membership please call \$ \_\_\_\_\_
- Non-U.S. Members add \$50 \$ \_\_\_\_\_  
(for overseas postage)

## OPTIONAL EVENTS:

Provide total based on number of persons.

### International Luncheon

Monday, Sept. 21, 12-1:30pm

- Non Meeting Registrants (\$35 per person) \$ \_\_\_\_\_

### Annual Banquet at the National Auto Museum

- Monday, Sept. 21, 6pm-8pm (\$100 per person) \$ \_\_\_\_\_  
*(Note: Transportation will be provided to the Museum. Directions to the Museum on GRC website)*

Check here if you require a seat on the bus.

### Student Leadership Luncheon (students only, free with registration)

- Tuesday, Sept. 22, 12-1:30pm \$ (FREE)

### Membership Meeting & Awards Luncheon

- Wednesday, Sept. 23, 12:00-2:00pm (\$65 per person) \$ \_\_\_\_\_  
*(Please purchase your ticket ahead of time)*

Check here if you would like vegetarian meals.

## FIELD TRIPS: (Limited Seating)

### Friday, Saturday 18 - Sunday, September 20

- Long Valley Geology (\$600 per person) \$ \_\_\_\_\_

### Sunday, September 20

- Ormat's Steamboat Geothermal Plant Complex (\$60 per person) \$ \_\_\_\_\_

### Wednesday, September 23 - Friday, September 25

- McGinness Hills Geothermal Plant (\$450 per person) \$ \_\_\_\_\_

**CANCELLATIONS:** If you must cancel your registration for the GRC Annual Meeting, Optional Events or Field Trips, please notify the GRC by August 26 in order to receive a refund (minus a \$50.00 handling fee). **Cancellations received after August 26 can not be refunded.** Substitution(s) can be made at any time, with prior approval.

## WORKSHOPS:

Provide total based on number of persons.

### Friday & Saturday, September 18 & 19

- Drilling & Risk Management  
\$450 Member / Non-Member \$525 per person \$ \_\_\_\_\_

- Student \$100 \$ \_\_\_\_\_

### Friday & Saturday, September 18 & 19

- Practical Aspects and Applications of Geochemistry  
\$450 Member / Non-Member \$525 per person \$ \_\_\_\_\_

- Student \$100 \$ \_\_\_\_\_

Total This Page	\$ _____
Total Previous Page	\$ _____
<b>TOTAL ENCLOSED</b>	<b>\$ _____</b>

## PAYMENT:

Pre-payment by one of the following methods must accompany this form. The GRC cannot bill participants.

- Check payable to Geothermal Resources Council in U.S. currency through a U.S. bank.

- Government Purchase Order (enclosed).

- Please charge my:

- VISA       MasterCard       American Express

NAME ON CARD (please print)	
BILLING ADDRESS	
CREDIT CARD NO.	EXPIRATION DATE
SIGNATURE	

Return Completed Registration Form to:

## GEOTHERMAL RESOURCES COUNCIL

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