

37th GRC Annual Meeting, Part Two

by Ian Crawford

“A Global Resource, from Larderello to Las Vegas”

The global geothermal community gathered once more for the 37th GRC Annual Meeting and GEA Geothermal Energy Expo in Las Vegas, Nevada, USA in late September/early October. The glitz and glitter of Vegas might have been a distraction for some but for many the meeting proved a successful educational and networking experience.

We have documented the meeting in two parts. In the last issue we reported on the Opening Session, Student Leadership Luncheon and Session, Women in Geothermal Luncheon, Golf Tournament, and Field Trips. In this issue we write about the GRC Awards, the International Luncheon and Session, the Poster and Technical Session Awards, and the winners of the 34th Geothermal Photo Contest.

Membership Meeting and Awards Luncheon

The 37th Annual Meeting of the Geothermal Resources Council (GRC) was a great success with representatives from 37 countries around the world attending Field Trips, Workshops, Technical Sessions, and enjoying networking and visiting exhibitors at the GEA Energy Expo.

As a climax to the celebrations, distinguished colleagues in the geothermal community from around the world were honored at the GRC Awards Luncheon. The GRC award winners for 2013 are:

The Joseph W. Aidlin Award recognizes outstanding contributions to the Geothermal Resources Council and to the development of geothermal resources.

Lucien Y. Bronicki



I am truly honored to receive this award. While this award is given to an individual, I must also recognize the efforts of the Ormat team including my hardworking and inspiring wife, Dita.”

The Geothermal Pioneer Award is given for outstanding achievements in the development of geothermal resources. It recognizes the pioneering efforts of members of the geothermal community who have made lasting contributions to the industry, worldwide.

Gustavo Cuéllar

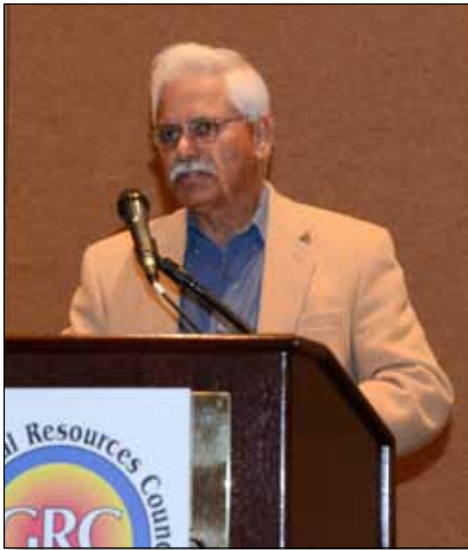


Gustavo Cuéllar and family celebrate his award.

**GRC Annual Meeting:
Awards Luncheon**

The Henry J. Ramey Jr. Award is given for lifetime achievements in geothermal reservoir engineering worldwide.

Subir K. Sanyal



A Geothermal Special Achievement Award was awarded for effective and steadfast efforts to educate, train and mentor new generations of geothermal experts.

Ingvar Birgir Fridleifsson



The Ben Holt Award is given for significant contribution to engineering works on geothermal power plant design.

Kenneth A. Phair



A Geothermal Special Achievement Award was given for acknowledgement of accomplishments at Chena Hot Springs and of steadfast support advancing interest in and development of geothermal resources.

Connie and Bernie Karl



(From left to right): GRC Awards Chair Dennis J. Gilles, Roy L. Mink who gave the valedictory speech, Bernie and Connie Karl, and GRC President Louis E. Capuano, Jr.

A Geothermal Special Achievement Award was given for outstanding contributions to the understanding and development of Engineered Geothermal Systems.

Doone Wyborn

(Was not able to attend the meeting.)

A Geothermal Special Achievement Award was given for outstanding contributions in improving the use of geophysical methods and conceptual models in the evaluation and development of geothermal resources.

William Cumming

(Pictured in the photo below.)



For more photos of the Awards Luncheon, go to <http://goo.gl/ZxFknf>



The 2013 GRC Award Winners (from left to right): Subir K. Sanyal, William Cumming, Ingvar Birgir Fridleifsson, Lucien Y. Bronicki, Kenneth A. Phair, Connie and Bernie Karl, and Gustavo Cuéllar. (Not pictured is Doone Wyborn who was not able to attend the meeting.)



Hildur Ingvarsdottir won First Place and an Honorable Mention in the 34th Annual GRC Photo Contest. (See page 36 for the winning photos.) Hildur is the daughter (dottir) of the GRC Geothermal Special Achievement Award winner Ingvar Birgir Fridleifsson.



Attendees at GRC's 37th Annual Meeting enjoyed the luxurious surroundings of the MGM Grand Convention Center. PHOTO BY IAN CRAWFORD.



38th GRC Annual Meeting & GEA Geothermal Energy Expo

Portland, Oregon · USA
Sept. 28 - Oct. 1, 2014



International Luncheon



(From left to right): Steve Ponder, Fernando Echavarría, Gosaye Mengistie Abayneh, Albert Mugo, and Peter Omenda. PHOTO BY IAN CRAWFORD.

International participation at the 37th GRC Annual Meeting was especially strong this year, with more than 37 countries represented. The growth of geothermal energy activity in emerging markets today is significantly higher than that of the U.S., and should offer unique opportunities for U.S.-based providers of geothermal goods and services. For the sixth year in a row, the Annual Meeting broadened its international outreach by

Both presentations from the GRC/GEA International Luncheon and all presentations from the GRC International Session have been made available on the GRC website at: www.geothermal.org/meet-new.html



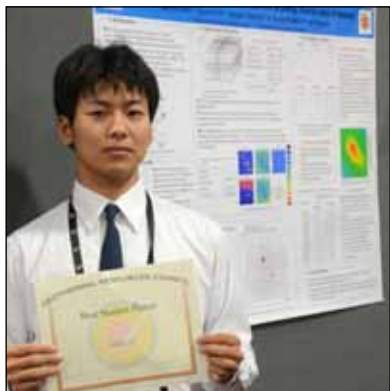
hosting an International Luncheon on the first day of the conference. The idea for the luncheon is to bring together international attendees and U.S. geothermal stakeholders from both public and private sectors.

This year the latest developments in harnessing East Africa's considerable geothermal energy resources were presented. **Gosaye Mengistie Abayneh**, Director, Energy Studies and Development, Ministry of Water and Energy, Addis Ababa, Ethiopia gave an *Overview of Ethiopian Renewable Energy Development Program and Future Geothermal Resource Market*. **Albert Mugo**, Business Development and Strategy Director at Kenya Electricity Generating Company (KenGen) presented *Geothermals Role in Kenya's Vision 2030: Opportunity for Investors*.

Poster Session Awards

Best Student Poster

Natural state Modeling of Geothermal Reservoir at Dieng, Central Java, Indonesia, Takeshi Hino, et al.



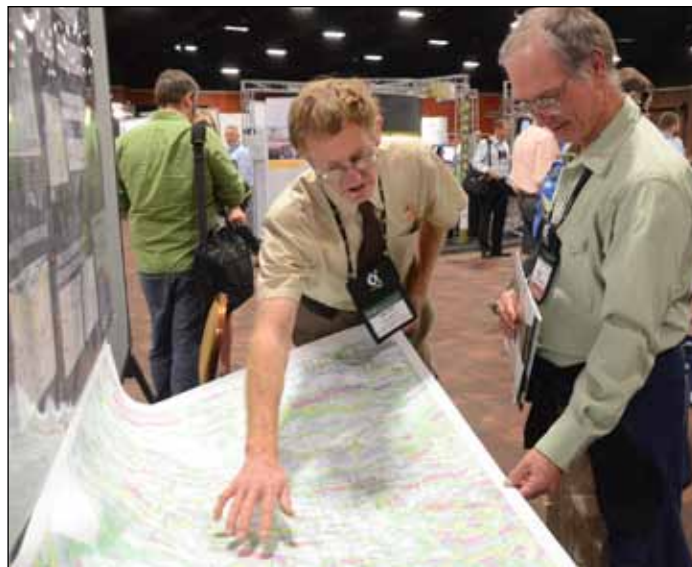
In addition to a GRC Best Student Poster certificate, **Takeshi Hino** was awarded \$500 sponsored by the U.S. Department of Energy (DOE) Geothermal Technologies Program.

Best Non-Student Poster

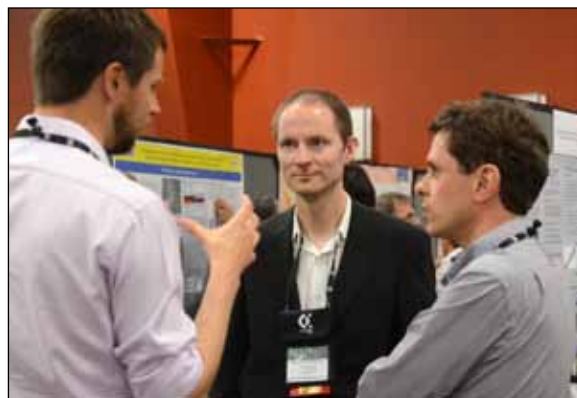
A New Investigative Approach to Understanding Heat Migration Pathways Within the Shallow Subsurface at Orakei Korako, New Zealand, Bridget Y. Lynne, & Smith, Gary J.



"Yes, **Bridget Lynne**, You're a winner!" **Robert Podgorny** announces best Non-Student Poster.



At the Poster Session Reception, **Rick Allis** (left) of the Utah Geological Survey shows off a map from his *Utah Contributions to the National Geothermal Data System* poster to **Mark Coolbaugh** of the Great Basin Center for Geothermal Energy in Reno, Nevada.



Egill Juliusson of Landsvirkjun, **Gunnar Gunnarsson** of Reykjavik Energy and **Ingvi Gunnarsson**, also of Reykjavik Energy, have an Icelandic conversation.

To view photos from
the Poster Session
Reception, go to
<http://goo.gl/v6lX9Y>



Outstanding Technical Session Presentation Awards

Awarded by Session Chair

Basin & Range – *Structural Controls of the MacFarlane Geothermal System, Humboldt County, Nevada: A Progress Report*, Kraushaar, Sabina M. & Cashman, Patricia.

Case Studies – *The McGinness Hills Geothermal Project*, Nordquist, Josh & Delwiche, Ben.

Drilling – *Non-Destructive Testing Applied to Rig Inspection*, Mulama, Desmond & Khaemba, Abraham.

EGS 1 – *Stimulation Results From the Newberry Volcano EGS Demonstration*, Cladouhos, Trenton T. & Petty, Susan & Nordin, Yini & Moore, Michael & Uddenberg, Matt & Swyer, Michael W.

EGS 2 – *Insights into Cold Water Injection Stimulation Effects through Analytical Solutions to Flow and Heat Transport*, Plummer, Mitchell.

EGS 3 – *Multi-Fluid Geothermal Energy Production and Storage in Stratigraphic Reservoirs*, Buschecka, Thomas A. & Chena, Mingjie & Haoa, Yue & Bielicki, Jeffrey M. & Randolph, Jimmy B. & Suna, Yunwei & Choic, Hyungjin.

Exploration 1 – *Geothermal Potential of Deep Sedimentary Basins in the United States*, Anderson, Tom C.

Exploration 2 – *Value of Spatial Information for Determining Geothermal Well Placement*, Trainor-Guitton, Whitney J. & Ramirez, Abelardo & Ziagos, John & Mellors, Rob & Roberts, Jeffery & Juliusson, Egill & Hoversten, G. Michael.

Exploration 3 – *Akutan Geothermal Area Exploration Results and Pre-Drilling Resource Model*, Ohren, Mary & Bailey, Alan & Rickard, Bill & Hinz, Nicholas & Oppliger, Gary & Hernandez, Jonathan & Dering, Gregory.

Geochemistry 1 – *Fluid, Gas, and Isotopic Variation of Thermal Springs in the Southern Rocky Mountains: Colorado*, Easley, Elisabeth & Morgan, Paul.

Geochemistry 2 – *Geochemical Data Collection and Evaluation as Part of the National Geothermal Data System*, Shevenell, Lisa & Zehner, Richard.

Geology – *Use of LiDAR Data for Neotectonic Evaluation of Superstition Hills and Superstition Mountain, Salton Trough, California*, Unruh, Jeff & Gray, Brian & Bozkurt, Serkan & Lutz, Andrew & Bjornstad, Steve & Tiedemann, Andrew.

Geophysics – *Distortion Effects on Magnetotelluric Sounding Data Investigated by 3D Modeling of High-Resolution Topography*, Stark, Mitchel & Soyer, Wolfgang & Hallinan, Stephen & Watts, M. Don.

Geothermal Database – *Increasing Access to Federal Data Through the DOE Geothermal Data Repository*, Weers, Jon & Anderson, Arlene.

Heat Pump/Direct Use – *Improvement of the Capacity of Ground Heat Exchangers by Water Injection*, Fuji, Hikari & Komaniwa, Yoshihito & Onishi, Kyosuke & Chou, Naokatsu.

Policy/Market Analysis/Utility – *Nobody Puts Geo in a Corner*, Sullivan, Bob.

Power Plant 1 – *Energy Recovery Using Turbo-expanders in Production Wells and Gathering Systems with High Pressures*, Garcia-Gutierrez, Alfonso & Martinez-Estrella, Juan I. & Ovando-Castelar, Rosember & Canchola-Felix, Ismael & Gutierrez-Espeticueta, Sergio & Vazquez-Sandoval, Abelardo & Rosales-Lopez, Cesar.

Power Plant 2 – *Thermal Performance of the Los Humeros Geothermal Field Fluid Transportation Network*, Garcia-Gutierrez, Alfonso &

Martinez-Estrella, Juan I. & Ovando-Castelar, Rosember & Vazquez-Sandoval, Abelardo & Rosales-Lopez, Cesar.

Power Plant 3 – *Axial Turbine for Low-Grade Heat Source*, Elliott, Ryan & Dickey, Halley.

Power Plant 4 – *Geothermal Power Generation Using Thermoelectric Effect*, Li, Kewen & Liu, Changwei & Chen, Pingyun.

Regulatory/Environmental – *Geothermal Gas Emission from Hellisheidi and Nesjavellir Power Plants, Iceland*, Gunnarsson, Ingvi & Aradottir, Edda Sif & Sigfusson, Bergur & Gunnlaugsson, Einar & Juliusson, Bjarni Mar.

Reservoir Engineering 1 – *Numerical Simulation of Instability of Geothermal Production Well*, Itoi, Ryuichi & Katayama, Yasunari & Tanaka, Toshiaki & Kumagai, Naoto & Iwasaki, Takaichi.

Reservoir Engineering 2 – *Numerical Modeling to Assess the Sustainability of Direct Use at Tauranga Low-Temperature Geothermal System, New Zealand*, Pearson, Sophie & Alcaraz, Samantha.

Reservoir Management/Modeling – *Inhibition of Antimony Sulfide (Stibnite) Scale in Geothermal Fields*, Gill, Jasbir & Muller, Logan & Rodman, David.

Resource Assessment 1 – *Geothermal Art in the N-German Sedimentary Basin: Grafting EGS with Aquifers*, Ghergut, Julia & Herold, Maria & Sauter, Martin.

Resource Assessment 2 – *Investigating Low-Temperature Hydrothermal Alteration in Drill Cuttings from Pilgrim Hot Springs, Alaska, Using a Suite of Low Cost Analytical Techniques*, Miller, Joshua K. & Haselwimmer, Christian & Prakash, Anupma.

Seismicity 1 – *Ambient Noise Cross-Correlation Study of Menengai Caldera: Geothermal Prospect in the Central Kenya Dome*, Patlan, Ezer & Wamalwa, Antony & Kaip, Galen & Velasco, Aaron A.

Seismicity 2 – *Temperature Dependent Injectivity and Induced Seismicity. Managing Reinjection in the Hellisheidi Field, SW-Iceland*, Gunnarsson, Gunnar.



NOTE: All 161 papers that were presented at the 37th GRC Annual Meeting in Las Vegas, including from the winning presentations above, are now available for members only, in the **GRC Geothermal Library** at: www.geothermal-library.org. Papers from previous years' meetings are available for all.

Call for Papers

The GRC invites you to present your latest technical work in geothermal research, exploration, development and utilization at the **38th GRC Annual Meeting** to be held in Portland, Oregon.

Successful selection to present at the GRC 2014 Annual Meeting is prestigious and recognizes the presenter as a top industry expert. International participation is key to the success of the GRC Annual Meeting technical programs and we encourage geothermal researchers and experts from around the world to submit their work for consideration to be presented.

Authors may submit an oral technical presentation and/or poster at the GRC's 2014 Annual Meeting.

Please note: Beginning last year, the GRC is no longer requiring an abstract to be submitted first. We are requiring completed draft papers as the first step. The Draft Paper submission deadline is May 2, 2014.

Photo Contest Winners

In total, 43 photos were entered in the 34th Annual Geothermal Amateur Photography Contest where they were judged for impact, relevance, composition, and technical quality.

In appreciation of their achievement, GRC awarded cash prizes to photo contest winners.

GRC appreciates the creativity and quality of all contest submissions and looks forward to next year's photo contest to be announced and showcased at the 38th GRC Annual Meeting at the Oregon Convention Center in Portland, Oregon, USA, September 28 - October 1, 2014.

1st Place – *Geothermal Sheep*, by Hildur Ingvarsdottir of Reykjavik, Iceland.

2nd Place – *Environmentally Friendly*, by Raditya Mahendra of Central Java, Indonesia. (Also our cover photo this issue.)

3rd Place (tie) – *Flow Test of Tol-4 Well at Tolhuaca Geothermal Project in Southern Chile*, by Silke Lohmar of Santiago, Chile.

3rd Place (tie) – *McGuinness (Little Power Plant in the Prairie)*, by Haim Shoshan of Yavne, Israel.

Honorable Mention – *Behind the Cotton Grass Fields*, by Hildur Ingvarsdottir of Reykjavik, Iceland.

Honorable Mention – *One Night in Kamojang*, by Sangap Yohanes Berutu of Jawa Barat, Indonesia. ■

To view all the entries online, go to <http://goo.gl/AEmFfx>



1st Place.



2nd Place.



3rd Place. (tie)



3rd Place. (tie)



Honorable Mention.



Honorable Mention.