

GEOTHERMAL ENERGY UTILIZATION

ASSOCIATED WITH OIL & GAS DEVELOPMENT



Southern Methodist University, Dallas, Texas

June 14-15, 2011 SMU Geothermal Conference

Roy M. Huffington
Department of Earth Sciences
Dallas, Texas



SMU | GEOTHERMAL
LABORATORY

<http://smu.edu/geothermal/>

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Conference Agenda

Tuesday, June 14

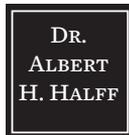
- 7:00 AM **Registration & Networking**
- 8:30 AM **Bruce Bullock & Dave Blackwell**
Southern Methodist University
Welcome & Geothermal Overview
- 8:50 AM **Kip Averitt**
Former Texas State Senator
Clean Energy Coalition
- 9:15 AM **John Fox**
ElectraTherm, Inc.
Small Scale Power Generation from Geothermal
and Coproduced Fluids
- 9:40 AM **Kevin Wallace**
Power Engineers, Inc.
Dinosaur and Ant are Friends! - O&G and Geothermal Can Join Forces
- 10:00 AM **Networking**
- 10:30 AM **Bruce Cutright**
UT Austin Bureau of Economic Geology
The Transformation of Tight Shale Gas Reservoirs
to Geothermal Energy Production
- 10:55 AM **Lyle Johnson**
U.S. DOE Rocky Mountain Oilfield Testing Center
Coproduced & Low Temperature Geothermal Resources as
Electrical Power Producers
- 11:20 AM **Kevin Myers**
GE Global Research
High-Potential Working Fluids for Next-Generation
Binary Supercritical ORC for EGS
- 11:45 AM **Lunch**
- 1:20 PM **Tim Reinhardt**
DOE Geothermal Technologies Program
Update on Funding Opportunities through the DOE
- 1:45 PM **Hal Macartney**
Pioneer Natural Resources USA, Inc.
A Raton Basin Geothermal Prospect

Conference Agenda

Tuesday, June 14

- 2:10 PM **Will Gosnold**
*UND, Petroleum Research, Education, & Entrepreneurship
Center of Excellence*
North Dakota Geothermal Binary Power Projects
- 2:30 PM **Networking**
- 3:00 PM **Howard McLaughlin**
Tristream Resources
An Overview of Australian Geothermal Projects
- 3:20 PM **Finance Panel**
Steve Erdahl
*GreenTech Renewables LLC - Financial Analysis of Geothermal
Hydrocarbon Coproduction Opportunities*
Elias Hinckley
Kilpatrick Townsend & Stockton LLP - Tax Incentives
James Smith
SMU COX School of Business - Oil and Gas Motivation
Allan Muns
Enhanced Geothermal Technologies - Moderator
- 4:00 PM **Networking**
- 4:30 PM **Keynote Address • Charles Levey**
Pratt & Whitney Power Systems
Electric Power Industry Generation Trends
and the Role of Renewable Energy
- 5:30 - 8 PM **Networking Reception**

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Conference Agenda

Wednesday, June 15

- 8:00 AM **Poster Session**
- Jamie Hutchins**
Masdar Institute of Science and Technology
Extending the Economic Life of Onshore Petroleum Wells
by Reducing Operating Costs
- Toni Boyd**
Geo-Heat Center Oregon Institute of Technology
Trials and Tribulations of the Oregon Institute of Technology
Small-Scale Power Plant
- Zach Frone, Joe Batir, Mitchell Williams**
SMU Geothermal Lab
Google.org US Resource Project Update
- Kevin Kerlin**
Helidyne LLC
Total-Flow Geothermal Power Generation
- Anna Crowell**
UND Department of Geology & Geological Engineering
Using GIS to Estimate Geothermal Energy Reserves in
Sedimentary Basins
- 9:00 AM **Dave Blackwell**
Overview and Welcome - Day Two
- 9:15 AM **Richard Langson**
Langson Energy
Generating Low-Cost Electricity from Pressure
- 9:40 AM **Seiichi Nagihara**
Texas Tech University
A Borehole Geothermal Database for the
U.S. Exclusive Economic Zone of the Gulf of Mexico
- 10:05 AM **Susan Petty**
AltaRock Energy, Inc.
Multiple Zone Stimulation of EGS Wells -
Key to Reservoir Optimization
- 10:30 AM **Networking**
- 11:00 AM **Halley Dickey**
TAS Energy, Inc.
Keeping it Simple: Developing Financeable Geothermal Projects

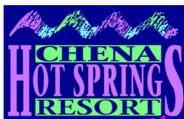
Conference Agenda

Wednesday, June 15

- 11:25 AM **Bob Wright**
Baker Botts L.L.P.
Key Legal Issues and Their Impact on Geothermal Development
- 11:45 AM **Lunch**
- 1:30 PM **Mark Leidig**
Weston Geophysical Corp.
Methods of Monitoring Hydraulic Stimulation
- 1:55 PM **Paul Dunn**
Gas Equipment Engineering Corp.
Baseline System Costs for 50 MW EGS -
A Function of Working Fluid, Technology & Location
- 2:20 PM **Suri Suryanarayana**
Blade Energy Partners
Alternative System Designs and Optimization for
Total Energy Recovery from Oil & Gas Wells
- 2:40 PM **Networking**
- 3:15 PM **Martin Kay**
MLKay Technologies
Data Availability for Projects
- 3:40 PM **Bernie Karl**
Chena Hot Springs
Sustainable is Attainable

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Alaska



Biosketch of Presenters

(Alphabetical order following Keynote)

Keynote Address by Charles E. Levey

As Vice President of Pratt & Whitney Power Systems (PWPS), Mr. Charles Levey's responsibilities include worldwide sales and marketing of all PWPS products and services, directing product and market expansion, and business development activities. These areas of responsibilities include new gas turbine products, renewable energy (geothermal, wind & solar technologies), industrial gas turbine component and repair services, aftermarket services, power plant operations and maintenance, project development activities and the management of joint venture relationships.

Before his career at PWPS Mr. Levey was the Director of Business Development for Energy Services, Inc. Prior to that he was a project manager for a large gas turbine combined cycle cogeneration project and held project engineering positions involved in the engineering, design and construction of domestic cogeneration projects. Charles began his professional career working as a design and project engineer for the US Dept. of Defense, designing and building gas turbine test facilities for the United States Navy Surface Combatant Fleet.

Mr. Levey obtained his MBA from the University of Connecticut and graduated from the State University of New York, Maritime College with a Bachelor's of Mechanical Engineering. He has also participated in graduate studies in Engineering Management at Widener University, Philadelphia and senior executive studies at University of Virginia, Darden School of Business. Presently, he serves on the Advisory Board of Directors at the University of Connecticut School of Business.

Kip Averitt

Senator Kip Averitt earned a BBA and MBA in economics and finance from Baylor University. Kip currently holds the position of Chairman of the Texas Clean Energy Coalition (TCEC). After serving 9½ years as a Texas State Representative, including tenure as Chairman of the House Committee on Financial Institutions, Averitt was elected to the Texas Senate in 2002, serving as Chairman of the Texas Senate Committee on Natural Resources, Chairman of the Oilfield Cleanup Fund Advisory Committee, and Co-chair of the Environmental Flows Advisory Group. He also served on the Finance, Business and Commerce, Education and Higher Education committees. Senator Averitt crafted and passed legislation protecting in-stream flows, conservation of existing water resources, new water projects, clean air incentives, increased funding to the Children's Health Insurance Program (CHIP), and a constitutional amendment providing permanent property tax relief for senior and disabled Texans. A member of the Board of Trustees of the Texas Nature Conservancy and the Texas Water Foundation, Averitt is a CPA and consultant. The father of four, he resides in Waco, Texas.

David Blackwell

David Blackwell received his Ph.D. in Geophysics from Harvard University and joined the faculty at SMU after a year of postdoctoral study at the Seismological Laboratory at Cal Tech. He holds the W. B. Hamilton Chair of Geophysics. Dave's research specialties are the thermal field of the Earth, working primarily on regional heat flow, and on geothermal development. Dave has received grants and contracts most recently from the USDOE, Google.org, TXSECO and the CNMI. He was a member of the BOD of the Geothermal Resources Council and was President in 1991-92. In 2009 he received the Joseph W. Aidlin Award from the GRC for outstanding contributions to the development of geothermal energy. Under his direction, the SMU Geothermal Lab produced the Geothermal Map of North America published by the AAPG (2004) and the resource chapter in the 2006 Future of Geothermal Energy Report. Recently, they have updated the temperature-at-depth maps available on Google.org/EGS and are a lead for the new National Geothermal Data System.

Bruce Bullock

Bruce Bullock has served as Director of the Maguire Energy Institute within the SMU Cox School of Business since May 2007. Mr. Bullock has steered the Institute's programs in energy education, energy policy and economics, helping to prepare students for careers in energy. He has authored numerous articles on energy issues, technology, and economics. Prior to joining the Cox School, Mr. Bullock served as Director of Corporate Communications for FMC Technologies, Inc., a leading oilfield equipment supplier in Houston, Texas. FMC was voted the leading oil and gas equipment service company on Fortune's most admired list multiple times during his tenure. Bruce is a member of the Advisory Board of the Texas Institute of Sustainable Technology Research. He holds a Masters of Public Affairs from the University of Texas LBJ School of Public Affairs and a BA in Economics and Political Science from SMU.

Bruce Cutright

Bruce Cutright is a Research Associate at the University of Texas at Austin, Bureau of Economic Geology. He is engaged in geothermal research in unconventional areas, alternative energy resources, and in particular, development of geopressured-geothermal resources using alternative heat extraction fluids. His experience prior to joining the Bureau of Economic Geology includes deep-well injection projects, in-situ mining, water resources development in arid, humid and island environments and environmental impact assessments for DOD and NASA facilities worldwide. He has developed master plans for environmental compliance for businesses in the pulp and paper sector, chemical plants, automotive and heavy manufacturing facilities. He served as Chairman of the Board of Supervisors and Director of Operations for the Midtown Miami Project which was the recipient of the 2009 EPA Phoenix Award for Environmental Excellence in Brownfields Redevelopment.

Halley Dickey

Halley Dickey is the Director of Geothermal Business Development for TAS Energy Inc., a technology company providing clean economic power solutions by focusing on the energy efficiency and renewable energy markets. TAS designs and manufactures modular energy conversion and cooling systems for the power generation industry, for use in district, commercial and industrial process cooling, mission critical locations and the renewable energy sector. TAS specializes in high efficiency standard product designs optimized for high life cycle return performance. Product capabilities include geothermal and waste heat power generation solutions, and gas fired generation, augmentation, chilled water systems, modular data centers and clean heat and power on-site energy systems.

Paul Dunn

Paul Dunn is the COO of both Gas Equipment Engineering Corporation (GEECO) and Avācence LLC. GEECO focuses on high performance air separation systems for military and commercial applications. Avācence produces high pressure, compressor free hydrogen generators based on alkaline electrolysis of water. Mr. Dunn comes to GEECO and Avācence after a long career with the Naval Sea Systems Command (NAVSEA), Naval Undersea Warfare Center (NUWC) in Newport, RI. He has a Bachelor's of Science degree in Mechanical Engineering from Tufts University and a Master's of Mechanical Engineering from the University of Rhode Island.

Steven Erdahl

Steven Erdahl is founder and CEO of GreenTech Renewables, LLC. As an attorney, a CPA, a Certified Valuation Analyst and an entrepreneur with over 25 years of domestic and international experience, his skill set is diverse. He is Board Certified in Tax Law by the Texas Board of Legal Specialization. His experience includes legal and corporate finance executive positions in Dallas with Oryx Energy Company (now Anadarko Petroleum) and Verizon Communications. After many years in the oil & gas industry, he now focuses on the renewable energy sector. Mr. Erdahl holds four degrees: M.B.A. (Finance) from the SMU Cox School of Business, LL.M. (Taxation) from New York University School of Law, J.D. (Law) from the University of Tulsa School of Law, and B.S. (Accounting) from Montana State University.

John Fox

John Fox joined ElectraTherm as Chief Executive Officer in April 2010, where he has overseen the complete design turn of ElectraTherm's Green Machine. Since his arrival, ElectraTherm was awarded a \$1 Million grant from the Dept. of Energy and has hosted US President Barack Obama. He joined the team from UTC's Pratt & Whitney Power Systems Division, where he was Director and General Manager of the Organic Rankine Cycle Business. John's management of the PureCycle® program drove the ORC technology from the development phase to successful commercialization. John spent 19 years at UTC, with his early career focused on engineering and product development at Pratt & Whitney's aircraft engine division. Since 2004, John managed the launch of the PureCycle® and PureComfort® product lines for the renewable energy and on-site power generation markets.

Will Gosnold

Will Gosnold is Professor of Geophysics in the Dept. of Geology and Geological Engineering at the University of North Dakota. He earned a baccalaureate degree in Physics from the State University of West Georgia in 1971 and a Ph.D. in geophysics from SMU in 1977. Throughout the 1980's and 90's, he worked on geothermal resource assessments for the DOE in Nebraska, South Dakota, and North Dakota. Recent research includes continental heat flow, borehole paleoclimatology, global change, flood frequency analysis, crust and mantle rheology, gravity signatures of geological structures and tectonics. He's concluded an NSF project to study terrestrial heat flow and climate change in Jordan and is continuing the research in the US. Gosnold is leading a science team of 36 research faculty from three universities in an effort to establish a multi-disciplinary climate research center. He is Custodian of the Global Heat Flow Data Base and is currently part of the SMU team working to create the National Geothermal Data System.

Elias Hinckley

Elias Hinckley, a Partner with Kilpatrick Townsend & Stockton LLP, focuses his practice on clean energy business, tax, and policy issues for clients at public utility, banking, private equity, real estate, manufacturing, engineering, construction and alternative energy companies. His energy experience includes solar, wind, geothermal, biomass, biofuels, hydroelectric, batteries, fuel cells, energy efficiency, demand response, transmission, natural gas and advanced coal. Mr. Hinckley was a partner and leader of the clean energy practice for Venable LLP, handling issues ranging from global operation of natural gas markets to positioning new technologies for policy programs. He co-developed and chaired their clean technology and venture business incubator program. While at Deloitte & Touche LLP, he was National Practice Leader - Alternative Energy Tax. Elias is a strategic advisor on energy policy and markets and is an Adjunct Professor of Energy Policy at Georgetown University. He holds degrees from Boston University School of Law (J.D.) and Georgetown University Law Center (LL.M.).

Lyle Johnson

Lyle Johnson, Geothermal Advisor for the U.S. DOE Rocky Mountain Oilfield Testing Center, develops plans for geothermal activities and monitors the activities of the contractor in executing geothermal plans and testing at RMOTC. Lyle also reports on projects involving oil production as well as other renewable energy and environmental projects. He has worked for the past six years with the integration of geothermal power production in the oil field using both coproduced fluids and low temperature geothermal sources. Lyle has over forty years of experience in Enhanced Oil Recovery and Improved Oil Recovery, oil production, environmental aspects of oil production, development and testing. He has extensive experience in project development, management and testing of environmental remediation, tar sand, oil shale, heavy oil and coal bed methane with over 75 technical publications and patents. Lyle is a licensed Professional Engineer and holds a B.S. in Chemical Engineering and a B.S. and M.S. in Petroleum Engineering, all from the University of Wyoming.

Bernie Karl

Bernie Karl was born the sixth of sixteen children and grew up on a farm in Peoria, Illinois. At 20, with itchy feet and a dream of making it big, Bernie ventured north to the Last Frontier. While employed on the trans-Alaska pipeline, he met his wife Connie and in 1984 established K&K Recycling, the largest recycling facility in Alaska. In addition, Bernie and Connie own Kodiak Narrow Cape Lodge, Chena Power, and Chena Hot Springs Resort. Within a week of owning the resort, Bernie drilled the property's first geothermal well for district heating. In January 2004, the Aurora Ice Museum was built at Chena Hot Springs Resort. It was to be the first year-round ice structure in the world. Unfortunately, it melted that summer, leading Forbes magazine to name it "Dumbest Business Idea of the Year." Undaunted, the Aurora Ice Museum was rebuilt with new technology in Fall '04 and is still standing. Bernie has focused his attention on making Chena Hot Springs a sustainable community by establishing three greenhouses, all of which are heated by geothermal energy. This provides fresh grown produce for the resort's restaurant even in the cold winter months. He has also constructed and installed the first geothermal power plant in Alaska which provides all of the resort's electricity and operates on the lowest water temperature of any geothermal power plant in the world, 160°F. Given Bernie's history in recycling and leading geothermal technology research, he could very well be considered Alaska's green energy pioneer.

Martin Kay

Martin Kay is Director of MLKay Technologies, a leader in information and analytic services with a focus on oil & gas, geothermal and other renewable energy data. Over the past four years, Martin has worked closely with SMU and various state geology and regulatory bodies to capture, compile and analyze millions of oil and gas records to identify resources valuable for geothermal energy production. Martin has worked with a broad spectrum of clients including public and private companies, academic institutions, national laboratories, county, state and federal agencies. He is a sub-contractor on SMU's DOE grant to help build a National Geothermal Data System.

Richard Langson

Richard Langson: Inventor, Founder, President and Chairman of the Board of Langson Energy. Mr. Langson started in the construction industry building large commercial complexes and dams. As a champion race car builder and driver, he beat "Big Daddy" Don Garlits for the 1993 IHRA World Championship and set many world records, some still standing. Always an innovator and performance orientated person, Mr. Langson became interested in cogeneration and was hired by Amerada Hess Microgen in 2000 to spearhead new projects and business development. He then formed Vector CoGen, LLC to target the residential and light commercial (1-65kW) marketplace. In 2005 Langson formed ElectraTherm, Inc. with his modular "Waste Heat Generators." It is now one of the world leaders in small-scale, ORC binary power products. Awards he earned in conjunction with his former company include, but are not limited to:

- 2009 Wall Street Journal Technology Innovation Award - Energy Category
- 2008 Popular Science Magazine – Best of What's New Award, Green Tech.

Mark Leidig

Mark Leidig has been a Seismologist with Weston Geophysical Corp. for over eight years. He joined Weston after obtaining a Geophysics undergraduate degree from SMU and a Geophysics Master's degree from the University of Arizona. Mark worked with Dr. David Blackwell as a research scientist in the SMU Geothermal Lab studying geothermal fields in the Western U.S. At Weston Geophysical, Mark worked extensively on seismic source phenomenology and event location for the U.S. nuclear monitoring community. Currently, he focuses on applying these skills to reservoir scale induced seismicity detection, location, and characterization.

Charles Levey

See Keynote Address listed above.

Hal Macartney

Hal Macartney holds a Bachelor's degree in Geology from Dartmouth College. With over 30 years in the oil and gas business, principally in exploration and production, he has experience ranging from the Rockies to the Permian Basin in the US, and from the North Sea to Brazil internationally. As a Geoscience Advisor for Pioneer Natural Resources USA, Inc., he serves as an internal consultant to management with focus on their Rockies assets and operations, and is also involved with projects of special interest, including geothermal.

Howard McLaughlin

Howard McLaughlin is the CEO of Tristream Resources, a Company engaged in geothermal developments in Texas. Previously, Howard was the CEO and Managing Director of Antares Energy Ltd., an Australian company with oil and gas exploration and development in Texas, and the Vice President of Global Exploration for BHP Billiton Petroleum in Houston, where he had worldwide oversight of all exploration and appraisal activity. Howard's career began as a Petroleum Geologist for Esso Resources Canada in Calgary after completing his Bachelor of Science from the University of Calgary. He is currently a Board Member of Torrens Energy, an Australian company with geothermal interests in Australia.

Allan Muns

Allan Muns has worked in energy and energy finance for 30 years. After graduating from the University of WI at Madison with degrees in Economics, Political Science and Education, Mr. Muns began his career at the Chicago Board of Trade. His first private corporate equity venture in the energy sector was in 1989 as founding shareholder of Richmond Oil & Gas. From 1992-95 he was a Co-General Partner of the Melrose Energy Partnerships in London, raising approximately \$90 million to acquire and explore oil and gas properties in TX, NM, WY and LA, culminating in a public listing on the London Stock Exchange in 1993. In 1995 Mr. Muns became a founding shareholder in Sibir Energy, the largest market capitalized company traded on the UK AIM market at the time. From 1999-2006, he served as founding Chairman of TeleGenis Ltd. U.K. Today, Mr. Muns continues to work in finance, energy, and technology focusing on geothermal energy resources. His new company, Enhanced Geothermal Technologies, will participate with educational institutions, power generators and equipment manufacturers to build a portfolio of clean geothermal energy and power generating assets.

Kevin Myers

Kevin Myers is a Mechanical Engineer in the Edison Engineering Development Program at General Electric's Global Research Center. While there, he held positions in the Electronics Cooling Laboratory and the Energy Systems Laboratory. Before joining GE, Kevin was a research assistant in the Solar Energy Laboratory at the University of Wisconsin, Madison. His previous work includes research in the areas of geothermal power cycles, wind turbines, and solar photovoltaics. Kevin received a BS in Mechanical Engineering from Clemson University and a MS in Mechanical Engineering from the University of Wisconsin, Madison.

Seiichi Nagihara

Seiichi Nagihara is an Associate Professor of Geosciences at Texas Tech University in Lubbock, Texas. He has a Ph.D. in Geological Sciences from the University of Texas at Austin. Seiichi has worked on a number of geothermal research projects in the Gulf of Mexico and elsewhere over the last two decades. He currently collaborates with SMU in the development of the National Geothermal Data System and also collaborates with NASA in lunar heat flow research.

Susan Petty

Susan Petty has 30 years of experience in the geothermal industry that include well testing, and reservoir engineering and management. Petty was a founding partner in Black Mountain Technology, a geothermal consulting firm. She has designed and implemented more than 25 geothermal well stimulations, and was involved in early stage EGS fracture stimulations. Petty is a named inventor on numerous AltaRock patent applications and supervises AltaRock's technology development program. Petty was a significant contributor to the 2006 Future of Geothermal Energy Report produced by MIT and has been on the Geothermal Resources Council Board of Directors.

Tim Reinhardt

Tim Reinhardt is currently at the Dept. of Energy (DOE), working in the Geothermal Technologies Program (GTP) as a Program Analyst and Program Lead/Technical Manager for Low Temperature Resources. As Technology Manager for the Low Temperature, Coproduced and Geopressured resources, Tim provides oversight for existing demonstration projects, guidance and direction for future low temperature geothermal projects and activities. He received his Bachelor's degree from Northwestern University in Environmental Sciences. He then joined the US Navy as an officer, serving for nine years as a Naval Aviator. He holds a Master's degree from the University of Oklahoma in Human Resources, and a Master's degree in Energy and Earth Resources from the University of Texas at Austin.

James Smith

James Smith holds the Cary M. Maguire Chair in Oil and Gas Management for the SMU Cox School of Business. He specializes in both economics and energy. Smith is an expert in microeconomic theory, managerial economics, and energy economics and policy. His research includes international oil taxes and investment, auction theory, real options, energy finance, and risk management. Over the years Smith has consulted for organizations such as: U.S. Dept. of Energy, Marathon Oil Company, ConocoPhillips, British

Petroleum, Saudi Aramco, ExxonMobil Corp. and the Alaska Oil and Gas Conservation Commission. Smith's education background includes a PhD and Master's degree from Harvard University and a BS from the University of Illinois, Urbana.

P. V. (Suri) Suryanarayana

Suri is the Executive Vice President of Engineering, Research, and Development for Blade Energy Partners. He has 18 years of professional experience including an extensive background in tubular mechanics, coiled tubing technology, multiphase flow modeling and probabilistic design (Quantitative Risk Analysis) techniques. He is currently one of Blade's lead instructors in their Advanced Under Balanced Drilling (UBD) Well Design and UBD Flow Modeling courses. He has extensive experience in the design, engineering and implementation of complex UBD projects. Recently, he has been active in reservoir-based probabilistic valuation of UBD, and quantitative assessment of the impact of formation damage during conventional drilling. A founding partner of Blade Energy Partners and a member of the Society of Petroleum Engineers, Suri has authored or co-authored over 37 archival papers. He received his PhD in Mechanical Engineering from Rice University.

Kevin Wallace

Kevin Wallace is a professional chemical/mechanical engineer, and the geothermal market lead for POWER Engineers. He has been a project director, project manager, project engineer and principal design and field engineer for more than 500 MW of new geothermal plant capacity in Asia, Africa, Latin America and the U.S. since 1997. Based in Idaho, he is now a Senior Project Manager for POWER and its Renewables Market Manager. He is a notable specialist in plant conceptual design and feasibility evaluation and has a formidable background in field support engineering for the construction of large plants in remote locations around the world. As POWER's Geothermal Project Director, he has extensive experience in project definition, detailed engineering supervision, and consultation for geothermal flash, binary and dry steam projects. He is now leading POWER's work in Turkey, the Geysers, Kenya, Chile, and Nicaragua. Before joining POWER, he worked as a chemical/mechanical and controls engineer for PG&E in California. He holds a B.S. in Chemical/Nuclear Engineering from the University of California at Berkeley, and a M.S. in Chemical/Environmental Engineering from San Jose State University.

Robert Wright

Bob Wright is a lawyer with Baker Botts L.L.P. concentrating on commercial real estate, industrial transactions and on environmental matters related to commercial transactions. Mr. Wright represents developers, institutional lenders, landowners and users in projects locally and around the country. The work he does for these clients includes acquisitions, debt and equity financing, workouts, development, leasing and disposition of such major real estate projects as shopping centers, hotels, high-rise office buildings and subdivision developments. He has substantial experience in transactions involving wind farms, power plants, pipelines, chemical facilities and other large-scale industrial projects. In the environmental area, Mr. Wright represents clients in connection with investigations, remediation, transaction structuring and contract negotiation, voluntary cleanup programs, public disclosure requirements and claims relating to asbestos, soil contamination, underground storage tanks, and indoor air quality.

Poster Session Presenters

Tonya (Toni) Boyd

Toni Boyd is an Engineer-In-Training and has a Bachelor's degree in Civil Engineering from Oregon Institute of Technology. She has been with the OIT Geo-Heat Center since 1995 as a Research Assistant and her current position is Senior Engineer. She is primarily responsible for the technical assistance program and for the Center's webpage, which has over 2,000 files. She has been active in the Geothermal Resources Council, working on the technical paper review and publications committees, and is presently on the Geothermal Resources Council Board of Directors. She is also a member of the International Geothermal Association. She has received training as an Installer and Designer from the International Ground Source Heat Pump Association. She has participated in many geothermal conferences as a speaker and organizer, and contributes in the review of technical papers for 2000, 2005 and 2010 World Geothermal Congresses.

Jamie Hutchins

Jamie Hutchins has a BS in Civil Engineering from Rensselaer Polytechnic Institute and a pending MS in Engineering Systems and Management from the Masdar Institute in Abu Dhabi, UAE. Ms. Hutchins is a licensed Civil Engineer in California and is a LEED accredited professional with over six years of professional experience in geotechnical engineering consulting and construction project management. Ms. Hutchins was named the American Society of Civil Engineers 2008 Young Engineer of the Year and recently served as a Young Future Energy Leader at the World Future Energy Summit in Abu Dhabi in 2011. Ms. Hutchins' current research at the Masdar Institute focuses on integrating geothermal solutions into the oilfield for electricity generation.

Kevin Kerlin

Kevin Kerlin began his career in 1999 as an automotive mechanic while completing his undergraduate studies from the University of Utah. After receiving a BSME in 2003, he worked as a mechanical engineer at Raser Technologies for five years in the R&D department designing electric motor prototypes. After completing his MBA from Southern Utah University in 2008, he cofounded Helidyne LLC where he co-developed an innovative geothermal and waste heat expander. The total-flow design is the first of its nature to provide a self-cleaning mechanism for scale deposit removal, and is the only known rotary design to fully accommodate TFC (Trilateral Flash Cycle) operation. He remains with the company today serving as V.P of both Business Development and Engineering.

Anna Crowell

Anna Crowell is a graduate student at The University of North Dakota, focusing on the use of GIS to enhance understanding and identification of geothermal resources. She earned her undergraduate degrees in Management and Computer Information Systems from Park University in 2002. Current research interests include: continental heat flow, bottom-hole temperature corrections, estimating

geothermal energy reserves in sedimentary basins, identifying sites for geothermal power plants in oil fields using coproduced fluids, and working on a characterization of the geothermal potential for the Rio Grande Rift.

Zachary Frone

Zachary Frone has a Bachelor's of Science in Geology from the State University of New York at Binghamton and is now a PhD student in SMU's Geothermal Lab. He is focusing on the EGS potential in the Eastern U.S. and on volcanic EGS systems. Zach is also interested in the potential for small-scale geothermal power applications in developing areas of the world.



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Power Systems



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