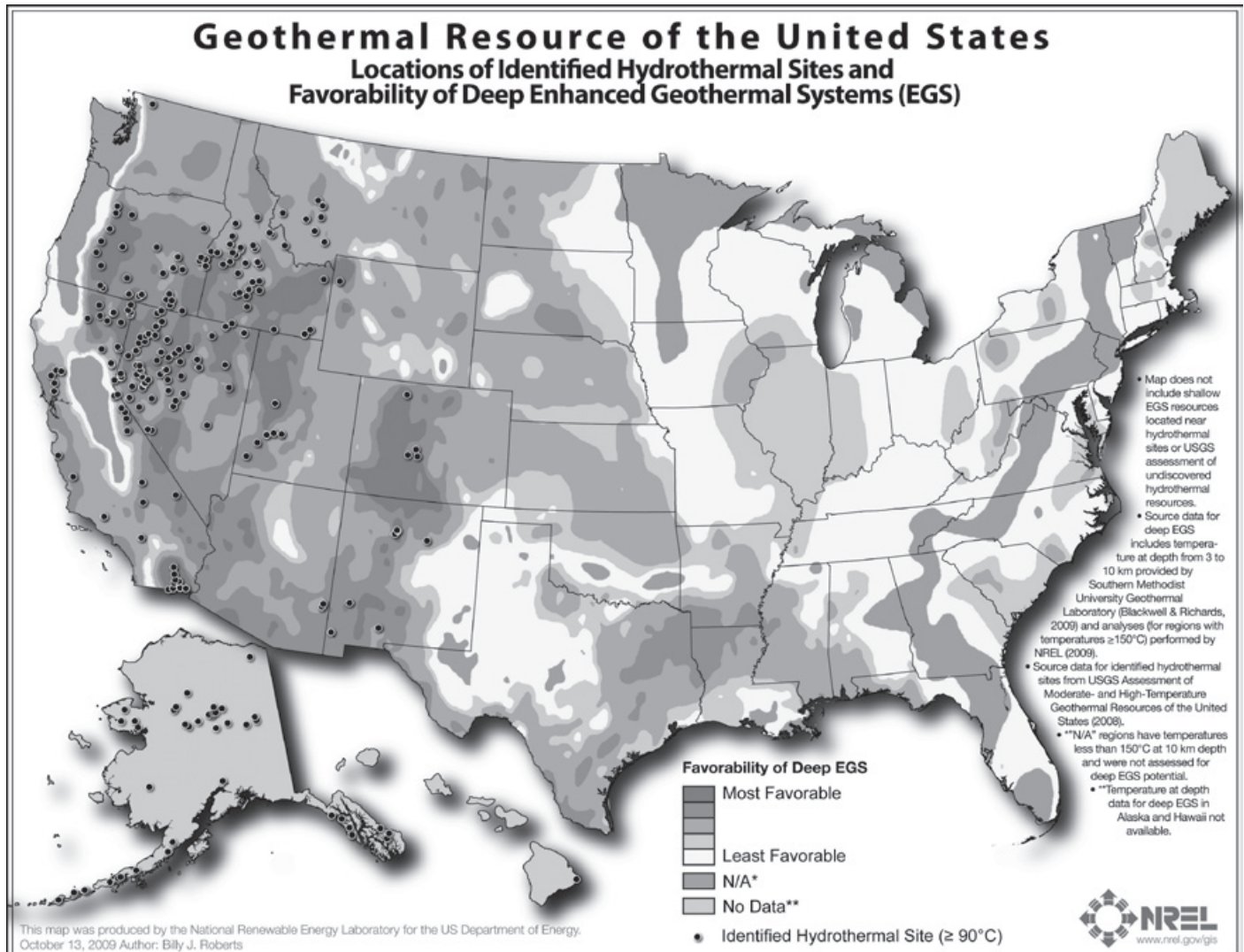


# LOUISIANA CIVIL ENGINEER

Journal of the Louisiana Section

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## Hydrothermal System Locations in the U.S.

(B. J. Roberts. (2009, 07/28/2016). Leading Clean Energy Innovation.

Available: [http://www.nrel.gov/gis/images/geothermal\\_resource2009-final.jpg](http://www.nrel.gov/gis/images/geothermal_resource2009-final.jpg))

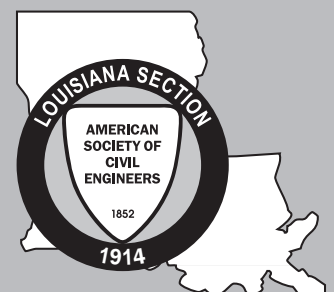
### FEATURE:

Hydrothermal System Locations in the U.S.

### NEWS:

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The Louisiana Section of the American Society of Civil Engineers was founded in 1914 and has since been in continuous operation. The Section consists of the entire state of Louisiana and is divided into four branches that directly serve over 2000 members. They are the Acadiana Branch centered in Lafayette, the Baton Rouge Branch, the New Orleans Branch, and the Shreveport Branch.

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# President's Message

By Matthew D. Redmon, PE

Happy Mardi Gras everyone! A lot has happened since my last President's message. We made it through the hustle and bustle of the holiday season and welcomed in a new year. I hope everyone found some time to relax and enjoy the company of family and friends. Now, we get to look forward to an exciting 2017.

The Society has been very busy over the past three months and has a full calendar until summertime. In January, delegates from our Branches traveled to Newark, NJ to attend the Regions 1, 2, 4 and 5 Multi-Region Leadership Conference. Participation in the conference strengthens and expands the programs and activities of Sections and Branches through the exchange of ideas, information and experiences, while exposing incoming officers to the tools needed to be effective leaders. Please ask your local delegate what they learned that could be implemented in your Branches.

Our report card committee has worked tirelessly to complete the 2017 Report Card update. Jan Evans, PE, Kam Movassaghi, PhD, PE, the executive board, and the various committees have been working with ASCE headquarters to ensure that Louisiana has a release date that will work well with our legislative session in April. They have put together a plan that will produce a great update within the budget. ASCE headquarters assisted with peer reviews, editing and graphics. The plan is to release the Louisiana Report Card update after the 2017 Infrastructure Report Card is released in March. We will be one of the first states to release our report card update after the national release. The next step will be delivering this information to our local representatives.

Every spring, ASCE holds its Legislative Fly-In Program in Washington, DC. This is an intensive two-day program that provides participants with an inside look at the public policy process. In 2016 ASCE members visited nearly 240 Congressional offices. The 2017 Legislative Fly-In will be Tuesday and Wednesday, March 14-15, 2017 in Washington, D.C. Louisiana is sending a handful of members to meet with our senators and representatives. The 2017 Infrastructure Report Card and other key legislation active in Congress will be discussed with our members of Congress. You will see an update on this in the May issue of the Journal.

ASCE is chairing National Engineers Week (E-Week) this year. E-Week is February 19-25, 2017 and a Girl Day is February 23, 2017. E-Week is a great time to celebrate how engineers make a difference in the world, increase dialogue about the need for

engineers, and bring engineering to life for kids, parents and educators. Girl Day represents a world-wide campaign to introduce girls to the fascinating world of engineering. The theme for 2017 E-Week is "Engineers Dream Big" coinciding with the release of the

IMAX film Dream Big: Engineering Our World. Check out the following link for more information and to see a preview of the new film <http://www.asce.org/dream-big/>. In addition, ASCE <http://www.asce.org/pre-college-resources/> and DiscoverE <http://discovere.org/dreambig> have materials to aid in outreach efforts. UNO hosted a half-day celebration on February 21. They showed the movie and will have some activities for the students. Contact Kim Jovanovich, PE [KJovanov@uno.edu](mailto:KJovanov@uno.edu) for more information. Engineers from the Shreveport Branch will assist Sci-Port with their E-Week activities. This is a great time to celebrate our profession and show others how wonderful engineering is. I encourage you to get involved with your local Branch or Student Chapter during this one of a kind event.

The Acadiana Branch is proud to host this year's Annual Louisiana Section Spring Conference on Thursday and Friday, April 27-28, 2017 at Parc Lafayette in Lafayette, LA. This is a great opportunity to learn from technical sessions covering a variety of topics. In addition, you get to connect with engineers from across the state. I know I always enjoy the social and crawfish boil. Please mark your calendars and I look forward to seeing you there.



Matthew D. Redmon, PE

# Geothermal Energy and its Potential Use in Louisiana

By Md Adnan Khan, M.Sc., EIT and Jay X. Wang, PhD, PE

## Introduction

Geothermal energy is one of the most promising renewable energy sources available in the world. The power generation from geothermal energy is through using the heat energy from the earth center to generate electricity. Geothermal energy is also utilized by taking the temperature difference between ground soil and the atmosphere to heat or cool buildings in different seasons. The earth's core temperature can reach up to 7000 to 12000 degrees Fahrenheit, which is caused by the slow radioactive decay of heavy elements at the earth's core [1]. Through thermal conduction the heat energy then becomes available at the earth's surface. Worldwide there were a total number of 82 countries using geothermal energy in 2015, which was about a 5.27 times increase over the 10 years before 2015 [2]. Among them the United States (US) became the world leader for generating over 3.5 GW in 2015 using geothermal energy as illustrated in Figure 1.

## Major Advantages of Geothermal Energy

Compared with other sources of energy, geothermal energy has advantages including the following:

1. Environmentally friendly- It produces less CO2 emissions in the atmosphere of earth and does not cause significant amount of pollution.
2. Remarkable cost-cutting performance- Geothermal energy does not need any fuels and maintenance cost is low as well.
3. Less land use- A small footprint on land is required and the equipment is built partially underground, thus it is a type of energy that can be developed in the backyard of a small household.

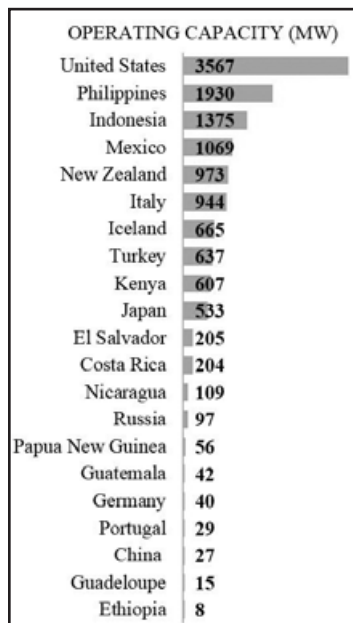


Figure 1 Geothermal Power Operating Capacity by Country [3]

4. Easily accessible- Geothermal energy is accessible everywhere, although only some resources can be profitably exploitable. It must be noted that technological advancement is moving so fast and enhanced geothermal systems have made more resources available with lowered costs.

5. Weather independent- As compared with many other types of renewable energy such as solar energy, geothermal energy is not dependent on weather.

6. Secure- Geothermal energy is excellent for meeting the base load energy demand, as opposed to other renewables such as wind or solar energy. Figure 1

Geothermal Power Operating Capacity by Country [3]

## Important Facts about Geothermal Energy

Lund and Boyd [2] explained that worldwide consumption of the direct use of geothermal energy was only 592,638 TJ in 2015. Geothermal energy was produced at the cost of a very little amount of harmful byproducts like carbon, CO<sub>2</sub>, SO<sub>x</sub> and NO<sub>x</sub> compared to the traditional energy sources. As it is estimated that a barrel (bbl) of oil equals 6.06×10<sup>9</sup> J of energy, which means that the 592,638 TJ energy is equivalent to 282 million barrels or 42.3 million tonnes of oil. According to Lund and Boyd [2], that amount of oil is about the



Md Adnan Khan, M.Sc., EIT



Jay X. Wang, PhD, PE

equivalence of a three-day consumption of oil worldwide. They also summarized the research done by Lawrence Livermore Laboratory and private consultant Goddard and Goddard, which showed that, if the 592,638 TJ energy as a form of electricity was produced from natural gas, oil or coal, a huge amount of carbon, CO<sub>2</sub>, SO<sub>x</sub> and NO<sub>x</sub> would be produced as shown in Table 1. Table 1 shows that, if the 592,638 TJ energy as a form of heat was produced using geothermal energy, all the numbers would be halved. The geothermal energy was equivalent to 176 million barrels of fuel oil if it was directly used for cooling, or 352 million barrels of fuel oil if electricity was used for cooling. However, the geothermal cooling only produced halves of the pollutions compared with electricity cooling.

	Fuel Oil		Carbon	CO <sub>2</sub>	SO <sub>x</sub>	NO <sub>x</sub>
	bbl	TOE	TOE	TOE	TOE	TOE
As Electricity	352	52.8	46.1	149.1	1.03	0.031
As direct use	176	26.2	22.9	74.4	0.51	0.015

Table 1 2015 Worldwide direct-use savings in energy, carbon and greenhouse gases using geothermal energy including geothermal heat pump in the cooling mode (Figures in millions) in terms of fuel oil (TOE = tonnes of oil equivalent, bbl = barrel of oil) [2]

In the US, there are many tax rebates available for renewable energy users including those who are using geothermal energy. There is a complete database, which was created and kept updated by the N.C. Clean Energy Technology Center [4]. The work was funded by the US Department of Energy. The database includes in-depth information about how many different types of tax rebates or financial incentives are available for using geothermal energy. The federal government and each state government including Louisiana provide the rebates and financial incentives. From the database a total of 18 financial incentives (4 from the state government and 14 from the federal government) are available for using geothermal energy in Louisiana for either residential or commercial purpose [4]. Among the 4 incentives provided from the Louisiana State Government are all indirect kickbacks (e.g., either net metering, interconnection or loan program).

**Different Types of Geothermal Energy Systems and their Potential use in State of Louisiana**

There are mainly three types of geothermal systems available in the world: the hydrothermal system, the direct use system and the heat pump system. Figure 2 is the geothermal resource map of the conterminous United States, which shows that western region of the US has higher heat flow than the eastern region, making it ideal for the development of hydrothermal system. In reality that's why most of the installed hydrothermal power plants are in the western region, especially in California and Nevada as shown in Figure 3. Based on Figures 2 and 3, the heat pump system might be the most appropriate one for Louisiana as the ground temperature is not as high as in the west.

Unfortunately, unlike other states Louisiana does not provide any direct incentive towards geothermal energy compared to the generous tax credits offered for wind and solar energy. For example, according to Louisiana Administrative Code (LAC) 61:1907, the incentive for using wind and solar energy is that the Louisiana tax credit is 50% for the first \$25,000 spending, but there is no mention of any incentives for using geothermal energy. The notable incentive, which can be used in geothermal energy installation in Louisiana

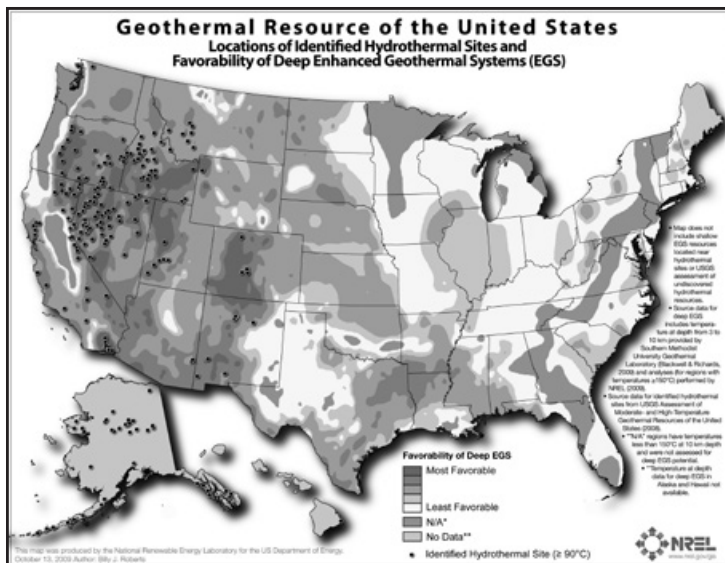


Figure 2 Suitable Hydrothermal System Locations in the US [6]

includes that the federal government provides 30% tax credit if certain efficiency criteria are met [5].

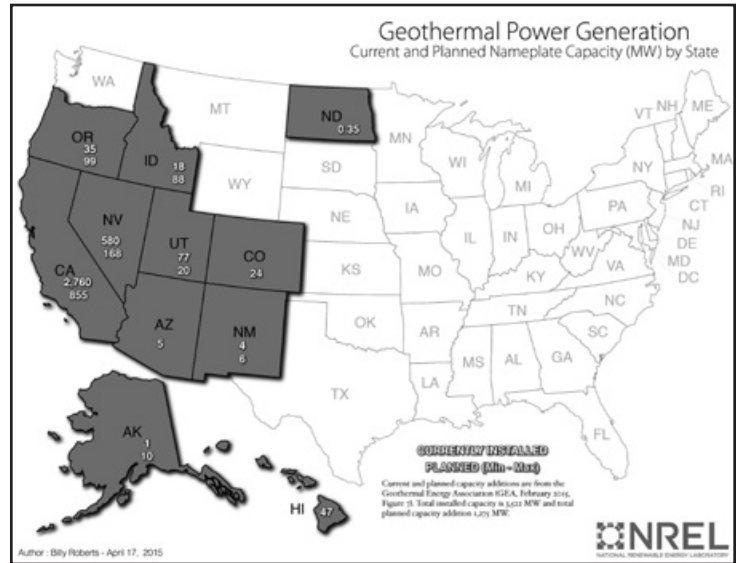


Figure 3 Geothermal Power Generation Map in the US [7]

A brief summary of all the three geothermal energy systems are given below, which were taken from the US Energy Information Administration website and Missouri Department of Economic Development's Division of Energy website [1, 8]:

**The Hydrothermal System: Heated ground water by geothermal energy is used to produce electricity as shown in Figure 4. It is further subdivided into three types:**

*Dry Steam Plant: High-pressure (geo-pressure) steam directly coming from the deep geothermal reservoir is used to produce electricity with the help of a turbine. Flash Steam Plant: Geo-pressured high temperature water is collected and then converted into steam. The steam is then used to turn generator turbine. When the steam is condensed to water, it is injected back inside the earth. Most of the hydrothermal plants follow this principal. Binary Steam Plant: Sometimes it is more convenient to make another liquid turn into steam compared to water. In this process heat energy from the geothermal hot water is transferred to the second liquid, and power is generated using the steam of the second liquid.*

Some preliminary studies of this hydrothermal system, which is also called as the Enhanced Geothermal System (EGS), have been done in Louisiana. A part of the research was conducted in 1981 near Cameron Parish where a 4825 m deep test well was drilled. The system kept running for four years until it was shut down in October 1987. The test well over the four years produced more than 67 million barrels of brine and 676 MMscf (Million Standard cubic feet, a unit used in oil industry) of associated gas. Eleven potential zones were selected where significant geo-pressure was found. However, a conclusion was made later that there was a major uncertainty about the overall reservoir size and longevity of the production [9]. In 2009 Louisiana Tank, Inc. and Jordan Oil Company, Inc. undertook a massive study. The project had a grant of \$5 million that was funded by the Department of Energy in the same parish in order to make a definitive conclusion about the prospect of EGS in Cameron.

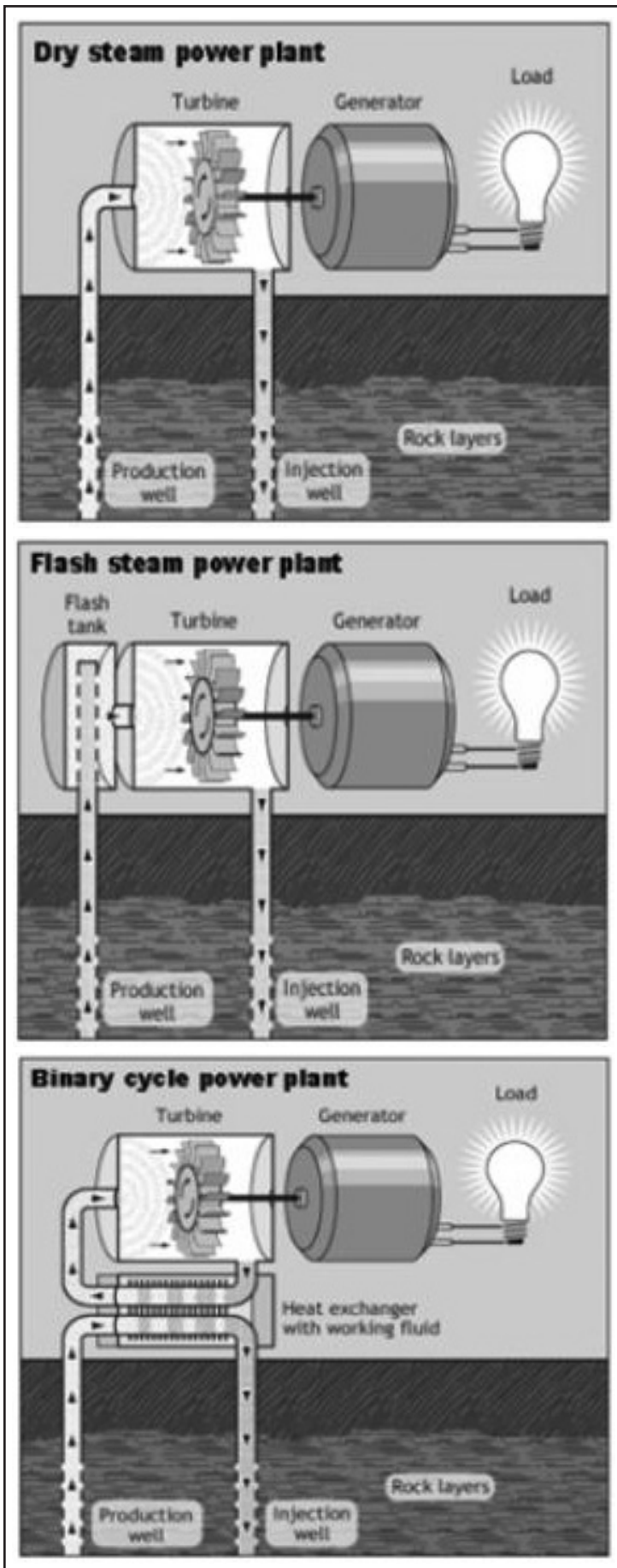


Figure 4 The Hydrothermal System [8]

In the final project report some drawbacks were mentioned about the utilization of the hydro-thermal reservoir including the absence of Renewable Portfolio Standard (RPS) in Louisiana. Concerns expressed in the report included that the policy did not require utility supply companies to produce a specified fraction of their electricity from renewable energy sources. Because Louisiana's policy makers are heavily dependent on the use of fossil fuel, it's hard for any startup geothermal company to secure a power purchase agreement (PPA) with a utility company that might be interested in paying a premium price for the "green" energy. After a total spending of \$867,850.84 out of the \$5-million grant, the project was closed [10-11].

**The Direct Use System:** In many locations in the US, hot water is available near the ground surface but not heated enough to be used in a hydrothermal system. The direct use of geothermal energy is a good option in these locations. The direct use system has been a popular option for many countries and some states in the US such as Utah, Oregon and California. Uses include heating domestic water, pool water and water at fish farms, heating, raising plants in greenhouses, drying fish and fruits, and heating sidewalks, etc. There is no evidence of the direct use of geothermal energy in Louisiana, possibly because there is no presence of heated water near ground surface in Louisiana [1, 8].

**The Heat Pump System:** In this system no electricity is generated directly. However this system significantly reduces requirements for heating, ventilating and air conditioning (HVAC) of residential and commercial buildings. This geothermal system takes advantage of the constant temperatures found just ten to fifteen feet below ground surface. The difference between the atmosphere and soil temperatures is used to heat and cool buildings in winter and summer, respectively. The most common type is the open or closed loop system. In the open loop system, fluid is not circulated in the HDPE (High density polyethylene) pipe. Fluid comes into the system from the inlet and gets out from the outlet. A good example of the open loop system is the surface water heat exchanger as shown in Figure 5. In a closed loop system the fluid constantly circulates in the HDPE pipe. The closed loop system can be mainly divided into the horizontal and vertical heat exchanger systems. In the horizontal closed loop system a HDPE pipe is generally laid in shallow-depth trenches. In the vertical closed loop system heat is exchanged with the soil using either a borehole or energy pile. In the borehole type, a heat exchanger HDPE pipe is laid vertically into the borehole, and then the borehole is grouted. This is mostly applicable for a residential building where space is limited around the building and the building does not need any pile foundation for structural reasons. If soil has less bearing capacity and a pile foundation is necessary, the HDPE pipe can be installed within the concrete piles, which are called energy piles. The two kinds of heat exchanger systems are shown in Figures 6 & 7, respectively. The heat pump system has a huge potential in Louisiana. As evidence, one of the world's largest installations of geothermal heat pump system was installed at Fort Polk army base, Louisiana. Privately funded for about \$18.9 million, the system provided heating and cooling energy for 4003 homes, saving Fort Polk annually \$345,000 for 20 years during the contract period [12-13]. Even after the contract got expired it was believed that the financial savings was about \$2.2 million per year. This installation reduced electricity consumption



by 26 million kWh (33%) and CO<sub>2</sub> emission by 22,400 tons/year. When the pile foundation is not necessary in many cases, the horizontal/vertical borehole

closed loop heat exchanger system can be an excellent solution. In south Louisiana where pile foundation is utilized more frequently, the option of energy pile is more appropriate.

**Preliminary studies on Louisiana’s Heat Pump System at Louisiana Tech University**

During past few years, at the Programs of Civil Engineering and Construction Engineering Technology, Louisiana Tech University, research was done on the geothermal energy and its application to Louisiana, Khan and Wang [14-16] focused their research efforts on the potential designs of the geothermal energy systems for buildings in south and north Louisiana, respectively. They also developed a simple graph method for a preliminary design of the vertical ground coupled heat exchanger (GHX) to use geothermal energy. The findings were introduced in the following two parts.

**Part one: Study on energy foundation design in south Louisiana**

In this study, the potential use of geothermal energy for a pile foundation-supported building in south Louisiana was investigated. The geothermal energy system was designed by integrating it in the pile foundation of the four-story building in New Orleans. The first floor is for parking and an elevator lobby. Each of the upper floors provides 696.77 m<sup>2</sup> (7,500 ft<sup>2</sup>) of office space. The building is supported by 0.33 m (12.75 in) diameter open-ended steel H piles with a wall thickness of 0.0064 m (0.25 in). The design compressive

capacity of the pile foundation is 498.2 kN (50 tons) and the tensile capacity is 249.1 kN (25 tons). To take the design Loads, a total of 145 single piles were required for the foundation below the building. The 145 piles were installed in several different pile groups, including a pile group with a maximum of 3x3 or 9 piles. It turned out that a total of 16 pile groups were used to make the

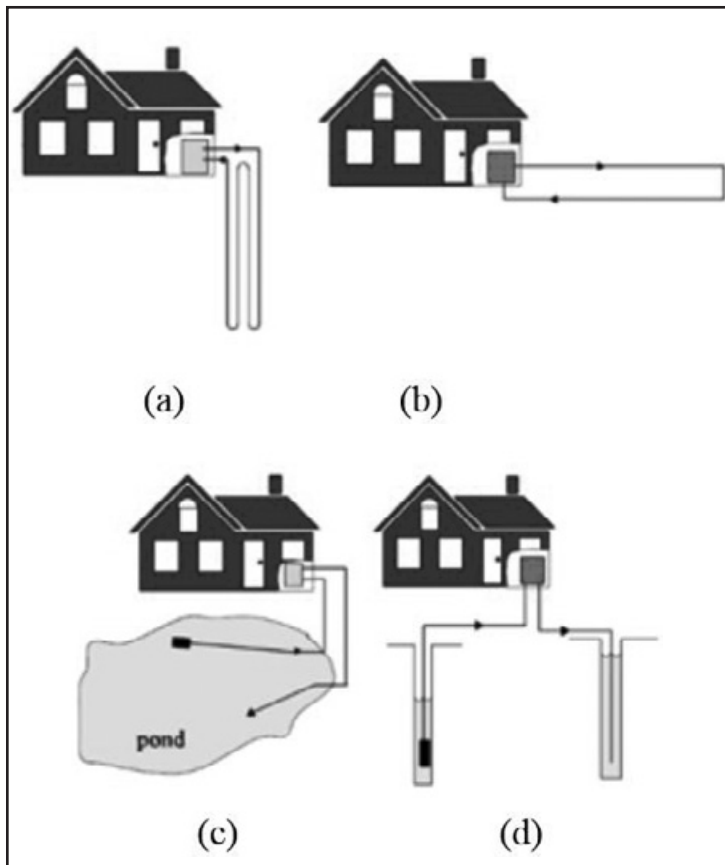


Figure 5 Different Types of GHX (a) Vertical close-loop, (b) Horizontal close-loop, (c) Horizontal open-loop, (d) Vertical open-loop [17]

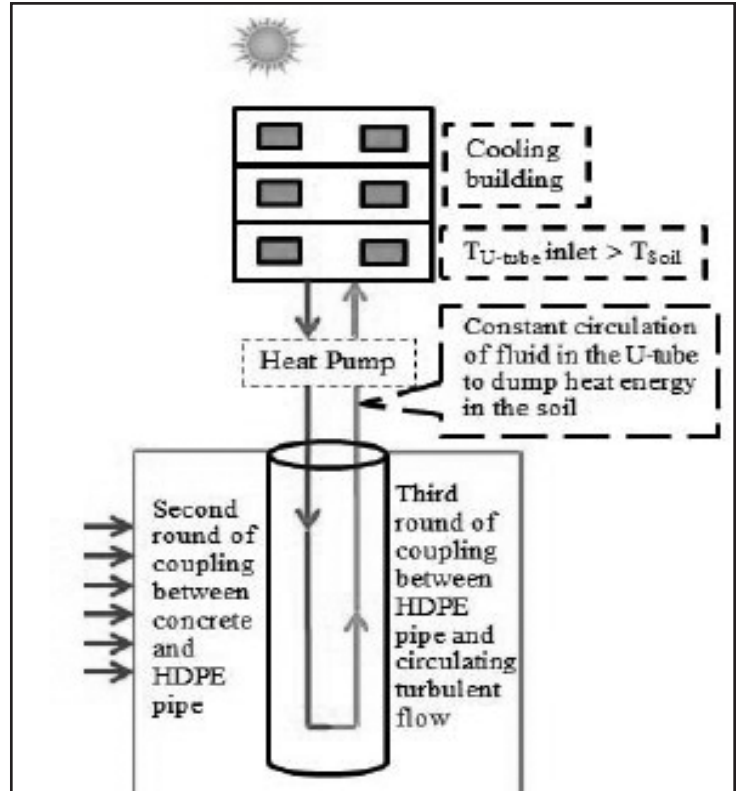


Figure 6 (a) Heat Transfers in an Energy Pile Cooling Buildings in Summer

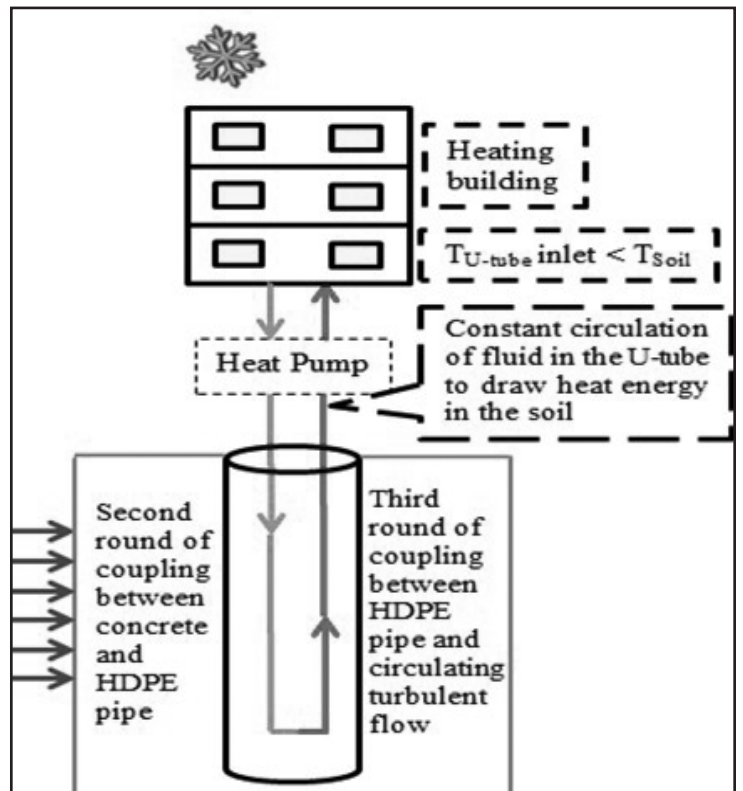


Figure 6 (b) Heat Transfers in an Energy Pile Heating Buildings in Winter



Figure 7 Borehole Installations in Fort Polk, Louisiana [12]

building foundation. The geothermal design ended up with one single pile from each pile group selected as energy pile for energy extraction to heat or cool the building. The maximum energy demand at peak hour of the building was 147.27 kW/hr for cooling (summer) and 39.54 kW/hr for heating (winter). Using the existing foundation layout, almost 20% of the cooling demand and 68% of the heating demand can be met, as listed in Table 2.

Cooling load (kW/hr)	Max demand	147.27
	Extraction from energy pile	29.31
	%	19.90
Heating load (kW/hr)	Max demand	39.54
	Extraction from energy pile	26.93
	%	68.12

Table 2 Total outputs of the energy piles [16]

Additional analyses were conducted to show the advantages of geothermal energy. If different sources of energy were used to meet the total cooling and heating demands, the costs were calculated and compared with each other. Each bar in Figure 8 showed the cooling and heating costs of the selected energy source.

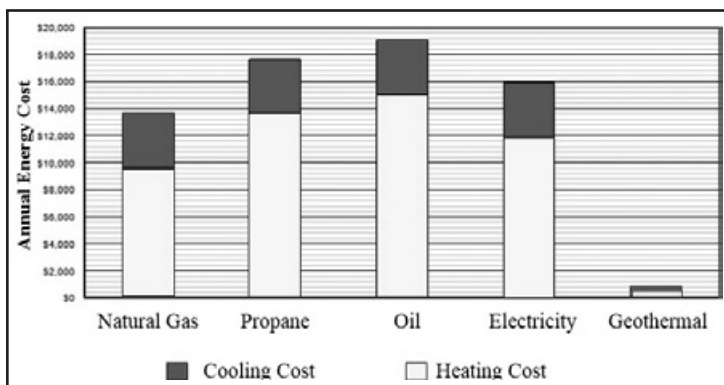


Figure 8 Annual Costs of Different Energy Sources

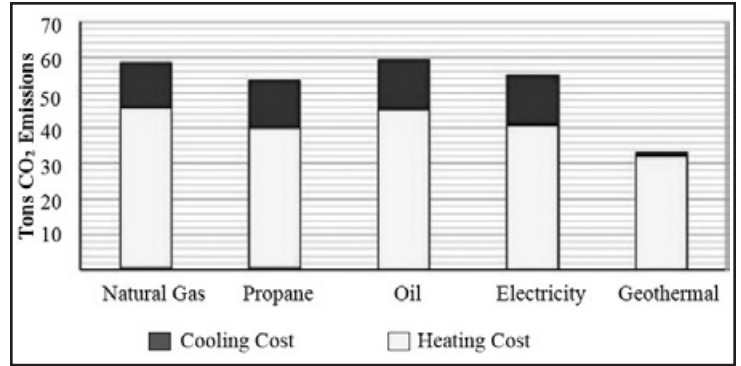


Figure 9 CO2 Emissions of Different Energy Sources

As compared to natural gas, propane, oil and electricity, the geothermal energy was found to be the cheapest. If geothermal energy was selected to cool and heat the building to meet all the heating and cooling annual demands, its expense would be 19 times less than the cost if only oil is used. Finally a comparison chart of CO2 emissions by different energy sources was produced as shown in Figure 9. It is quite clear that geothermal energy is the greenest form of energy than any other types of energy source. Furthermore it reduces the cost of HVAC significantly.

#### Part two: Development of a graph method for preliminary design of the borehole ground-coupled heat exchanger and its application to the geothermal cooling and heating design of an apartment in north Louisiana

The design of a regular borehole GHX involves much data collection and usage of a complicated software package and its time-consuming running. A GHX design even for a small residential/office building needs to deal with 19 different types of soil/fluid/HVAC data sets. Once the parameters are specified, a commercial software program is required to run with those parameters to design the geothermal system. From time to time, a quick solution should be found on how much geothermal energy can be achieved by installing a borehole GHX in backyard of a building, before the building owner decides to adopt a new geothermal energy system. To address the issue, it would be good to have a simple and easy graph method with a satisfactory design accuracy for a quick and preliminary borehole GHX design. For this reason, a simplified graph method was developed using the industry-popular software package GLD 2012. Validation of the numerical results from GLD 2012 with field measurements has not been well documented. Therefore, another software package GLHEPRO that was popular as well in green energy industry was selected and used to design the same GHX system. A sample set of graphs is shown in Figure 10, which is for a 6×6 borehole GHX system. Usage of the graph method is as follows: first the maximum demands of peak heating energy (kW) and cooling energy (kW) are acquired, and thermal conductivity of the ground soil must be obtained as well. Then from the cooling load vs. thermal conductivity graph the total borehole length is found. Another total borehole length is determined the same way using the heating load vs. thermal conductivity graph. Finally between these two lengths the maximum one is taken as the design total length. Once the total length is known, it is divided by 36 to get the actual depth of each borehole, as the graphs were produced for the 6×6 borehole orientation. For any other borehole combination and orientation, different graphs should be employed.

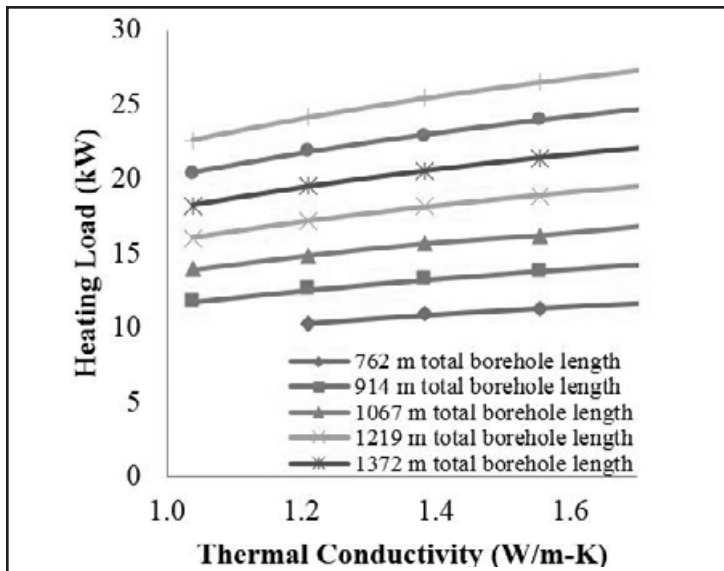


Figure 10 (a) The Graph Method for Borehole GHX Design (6x6 borehole) Total Borehole Length Required for Heating Load

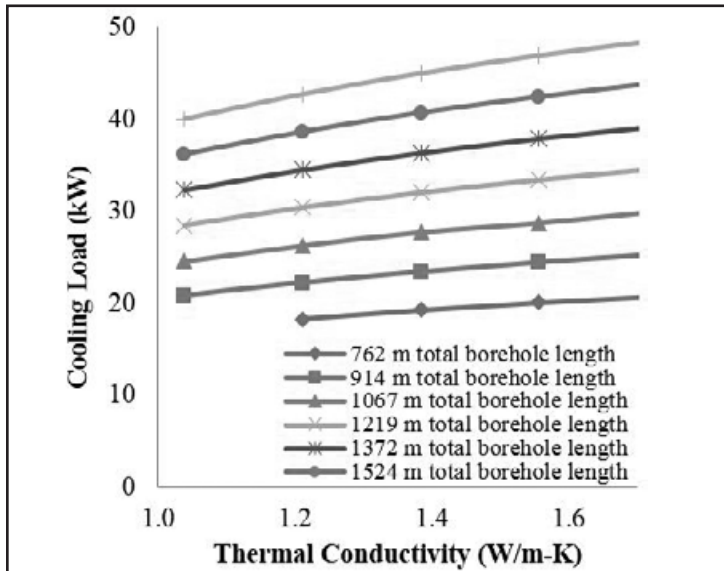


Figure 10 (b) The Graph Method for Borehole GHX Design (6x6 borehole) Total Borehole Length Required for Cooling Load

The heating and cooling load requirement of a house complex in Ruston, Louisiana, was selected as an example for which a geothermal heating-cooling system is designed using the graph method. It is a five-apartment house, with all the apartments were aligned side by side. On the average, each of the two-bedroom apartment was 9.57 m long and 7.32 m wide and had two outside doors and six windows. Annual HVAC requirements for the single apartment and the whole five apartments were recorded and given in Table 3. Walton [18] suggested that, if the peak energy demand/hr was not known, the design work could start up by selecting one percent of the total HVAC load/yr demand as the peak load/hr, and thus the peak-cooling load was 34558 W (117.92 kBtu/hr) and peak heating load was 996 W (3.4 kBtu/hr). For the peak demands using the graph method, the required borehole length was determined, it was 1311ft in total, and 36 boreholes were used with each borehole around 37 ft. deep. The solution from the graph method was then validated using the most popular commercial software packages GLD 2012 and GLHEPRO. Work presented here is for a virtue case,

as in reality no entire heating or cooling demand of a building is designed to be met by only utilizing a geothermal system. One may conduct a preliminary design by meeting 30% of the peak demands using geothermal energy.

Billing Cycle	The single apartment (kW/month)		The five-apartment house (kW/month)	
	Heating	Cooling	Heating	Cooling
17-Jan-2013	19.64	0	98.18	0
14-Feb-2013	14.36	0	71.80	0
15-Mar-2013	14.95	0	74.73	0
17-Apr-2013	0	201.63	0	1007.87
17-May-2013	0	190.50	0	951.90
14-Jun-2013	0	512	0	2559.98
18-Jul-2013	0	613.69	0	3067.87
19-Aug-2013	0	691.06	0	3455.90
16-Sep-2013	0	592	0	2960.02
15-Oct-2013	0	276.66	0	1383.88
14-Nov-2012	0	271.97	0	1359.85
14-Dec-2012	12.31	0	61.55	0

Table 3 The HVAC load for the five-apartment building in north Louisiana

### Conclusion and Future work

Louisiana has a huge potential of tapping its vast geothermal energy source. With the limited research and successful commercial venture previously done in Louisiana, it may conclude that the heat pump system is the most suitable system. Future work includes field experimental study regarding thermal effect on the mechanical performance of pile foundation and numerical simulation of thermo-hydro-mechanical interaction of energy pile.

### Acknowledgement

The research presented above was funded by the National Science Foundation (NSF) and the Louisiana Board of Regents (BOR) at the program of EPSCoR-Pfund under the contract No. LEQSF (2012)-PFUND-286. The support and assistance of the BOR personnel were gratefully acknowledged.

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*Louisiana Tech University*

**Dr. Jay X. Wang, PE**  
*Professor, Program of Civil Engineering*  
*Louisiana Tech University*

## ASCE Region 5 Director's Letter

By *Melissa Wheeler, M. ASCE*

Region 5 Members,

Do you Dream Big? ASCE does and the Society is excited about the release of the IMAX movie Dream Big: Engineering Our World. This is not a movie full of technical jargon you have to be an engineer to understand. This movie focuses on the human side of why we become engineers and how we are changing the world. I know this movie will inspire the next generation of engineers!

Your Governors have been busy this year implementing new and exciting programs for Region 5. Our new website is full of things for you to check out at: <http://regions.asce.org/region5/>. If your Section/Branch/YMG needs help with your website, the Society has an easy to use template that can help you. Contact your Governor for more information.

Our first Region 5 Assembly was a success. It was held after the Multi-Regional Leadership Conference in Newark. Leaders from all areas of Region 5 participated in discussions about our new Region programs, best practices, and how we can increase member value in Region 5. Mark your calendar now for next year's MRLC on February 9-10, 2018, in Buffalo.

Is it hard to make ends meet in your Branch? Region 5 is making mini-grants available to help you achieve the goals of your ASCE group. A short proposal and report is required for each grant request. Funding of up to \$1,500 per projects is available. Proposals will be accepted on an ongoing basis.

Now is the time to celebrate the outstanding leaders in Region 5. Please consider nominating someone by June 1st for one of three award categories: Region 5 Engineer of the Year, Young Engineer of the Year and Wall of Fame (Lifetime Achievement) awards.

Applications for the awards and mini-grants are available on our Region website.

The Purpose of Region 5 is Advancing the Profession by: Inspiring Members, Creating Excitement, and Promoting Excellence in Civil Engineering. Your Region 5 Board of Governors is always

open to hearing about what's important to you. If you have something you want to share, please feel free to contact me at any time. I will be happy to address any issues or concerns at monthly calls. Your Director and Governors are here to help you and make your group successful. Please let us know how we can help!

Melissa Wheeler  
Director, Region 5  
[mswheele@southernco.com](mailto:mswheele@southernco.com)

\*Remember, the R5BoG is made up of seven Governors who are willing and able to help:

Quincy Alexander (MS): [Quincy.G.Alexander@erdc.dren.mil](mailto:Quincy.G.Alexander@erdc.dren.mil)  
Jeff Earhart (FL): [jeff.earhart@cpwengineering.com](mailto:jeff.earhart@cpwengineering.com)  
Steven Goldstein (FL): [steven-goldstein@att.net](mailto:steven-goldstein@att.net)  
Katherine Gurd (GA): [katherine.gurd@aecom.com](mailto:katherine.gurd@aecom.com)  
Barbara Lehman (AL): [blehman@Geo-Solutions.net](mailto:blehman@Geo-Solutions.net)  
Ali Mustapha (LA): [alimm@bellsouth.net](mailto:alimm@bellsouth.net)  
Lawren Pratt (AL): [Lawren.Pratt@kbr.com](mailto:Lawren.Pratt@kbr.com)



**Melissa Wheeler, M. ASCE**



# ACADIANA BRANCH

*American Society of Civil Engineers*



## REGISTRATION FORM

### 2017 ASCE Louisiana Section Spring Conference

April 27 – 28, 2017

<b>Part 1. Registrant Information (*Required)</b>			
a. First Name*		b. Last Name*	
c. Name as to Appear on Name Tag*		d. Class ___P.E. ___P.L.S. ___Ph.D. ___E.I.	
e. ASCE Member Number* (If Applicable)			
f. Company Name			
g. Street	h. City	i. State	j. Zip
k. Telephone*	l. Email*		
<b>Part 2. Individual Registration (Check all that you will be needing)</b>			
<i>Please see cover sheet for registration inclusions</i>		<b>Postmarked ON or BEFORE March 26, 2017</b>	<b>Postmarked AFTER March 26, 2017</b>
<b>STUDENT REGISTRATION:</b>			
Technical Sessions Only (Does NOT include Luncheons)		<b>FREE</b> ___	<b>FREE</b> ___
Thursday Luncheon		<b>\$25</b> ___	<b>\$25</b> ___
Thursday Night Networking Event**		<b>FREE</b> ___	<b>FREE</b> ___
Friday Luncheon/Awards Banquet		<b>\$25</b> ___	<b>\$25</b> ___
<b>TWO-DAY/FULL REGISTRATION: (Includes Luncheons and Networking Event**)</b>			
ASCE Member ( <i>Indicate member number in Part 1</i> )		<b>\$275</b> ___	<b>\$300</b> ___
Non-Member		<b>\$300</b> ___	<b>\$325</b> ___
<b>ONE DAY REGISTRATION: (Includes Luncheons but NOT Networking Event**)</b>			
ASCE Member ( <i>Indicate member number in Part 1</i> )		<b>\$175</b> ___	<b>\$200</b> ___
Non-Member		<b>\$200</b> ___	<b>\$225</b> ___
<b>ADDITIONAL NETWORKING EVENT**:</b>			
Thursday Night Networking Event** (1 Ticket Included with Two Day/Full Registration)		<b>\$40</b> ___ (Per Person)	<b>\$50</b> ___ (Per Person)
<b>Total</b>		_____	_____

\*\*Networking Event is a combined Social & Crawfish Boil

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# ACADIANA BRANCH

American Society of Civil Engineers



## REGISTRATION FORM

### 2017 ASCE Louisiana Section Spring Conference

April 27 – 28, 2017

<u>SPONSORSHIP TYPE</u>	<u>NO.</u>	<u>COST</u>	<u>SUB-TOTAL</u>
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<u>PLATINUM SPONSOR</u>	_____	\$800.00	_____
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Includes sponsorship recognition at meals, break, or session room of choice (first come, first serve), landing page and program recognition, as well as two FREE registrations and two FREE crawfish boil tickets.

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<u>EXHIBITOR PACKAGE</u>	_____	\$400.00	_____
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Exhibitors will receive an 8' x 10' area with a table, two chairs, and drapes. Registrants may be included in the package for an additional charge as shown. Additional resources available upon request (fees may apply; see below). Donation of door prizes would be appreciated. Lunches included in Exhibitor Package. Visit [www.asceacadiana.net](http://www.asceacadiana.net) for more information.

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<i>Thursday Banquet Lunch</i>	_____	\$25.00	_____
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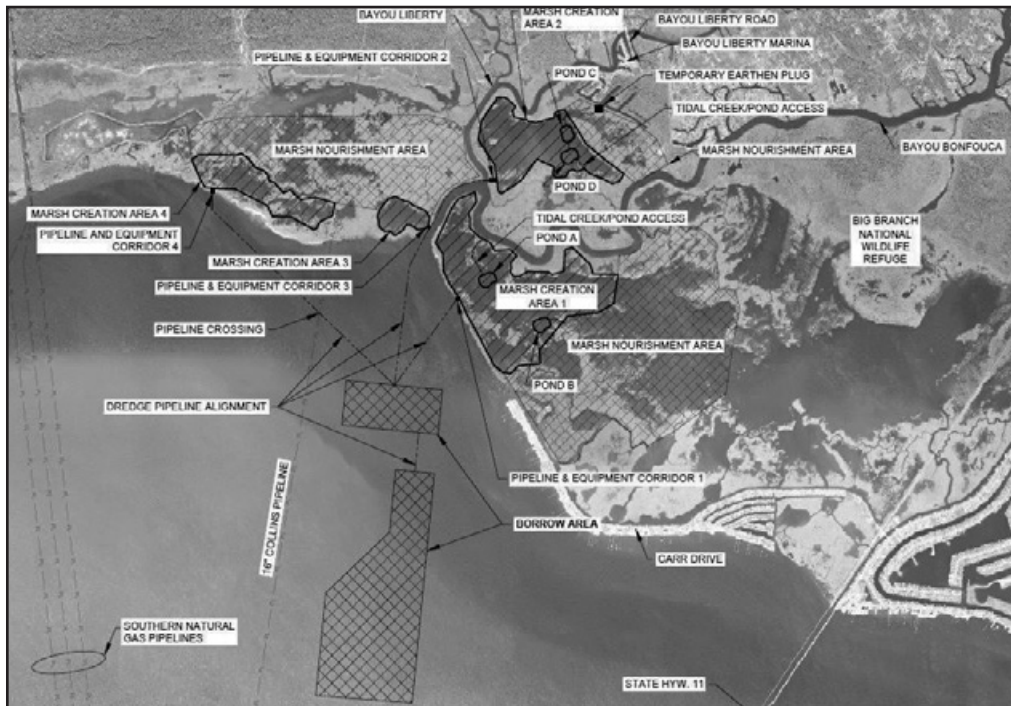
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# Large Scale Marsh Creation and Nourishment in St. Tammany Parish – Part I of II

By Gary Leonards, PE



Gary Leonards, PE



The Louisiana Coastal Protection and Restoration Authority (CPRA) initiated construction activities on a large scale marsh creation project in St. Tammany Parish in September 2016. The intent of the project is to create over 600 acres of low salinity brackish marsh and nourish an approximate additional 250 acres immediately north and east of the marsh creation areas. The project is located on the east and west sides of Bayou Liberty and Bayou Bonfouca near the intersection of Bayou Bonfouca and Lake Pontchartrain.

**Providence Engineering and Environmental Group LLC** (Providence) was awarded the construction administration component of this project for CPRA. Providence is responsible for acting as CPRA's representative throughout the construction of the project, until

final acceptance. The construction administration tasks for this project include the following: conduct pre-construction conference, review shop drawings and submittals, conduct bi-weekly construction progress meetings with CPRA and construction contractor, review construction contractor invoices, prepare required field changes and change orders, conduct daily construction inspection to ensure compliance with construction plans and specifications, conduct Davis-Bacon Act compliance interviews and payroll review, and prepare a project completion report.

Storm surge created from Hurricane Katrina and subsequent storms greatly deteriorated the low salinity marshes in lower St. Tammany Parish, with a large percentage of this deterioration on Big Branch Wildlife Refuge. A portion of the project borders Bayou Liberty, a designated Louisiana Scenic Stream by the LDW, so specialized design considerations were implemented to ensure no impact during the marsh creation construction activities. CPRA was responsible for the engineering design, with assistance from the



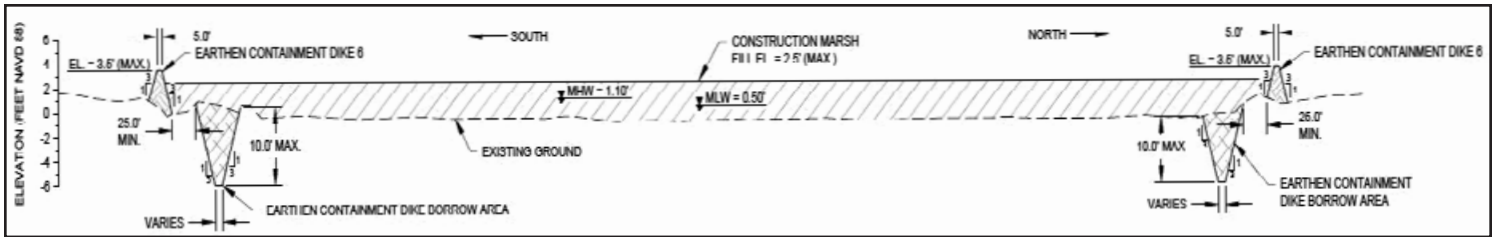


Figure 1: section of marsh creation area showing containment dike, containment dike borrows, and final marsh elevation.

local consulting community. The USFWS was also involved with the design of the project to ensure the refuge needs were met as well as the needs of the public who frequently use the refuge.

For marsh creation projects, it is important to estimate the rate of settlement with time to determine the period after which preferred marsh habitats can be established. Typically, settlement plates (SPs) are installed in the marsh creation areas to monitor the settlement of hydraulic fill. For this project, additional instrumentation including total pressure measurement cells, vibrating wire piezometers and drive point piezometers have been added to the settlement plates to estimate the settlement of hydraulic fill and foundation soils both during and after construction. These instrumented settlement plates (ISPs) have been installed at three locations in the vicinity of soil borings previously completed for the project. Data from the ISPs will be retrieved at regular intervals during the placement of the dredge fill material and surveyed to determine the in-situ settlement of foundation soil and marsh fill. This data will be plotted and compared to the theoretical marsh fill settlement estimates used for planning during the design phase.

Subsurface soil conditions at the project locations consisted primarily of firm to stiff clays and silty clays underneath and approximately five feet thick organic peat layer. The presence of the firm to stiff clay material underlying the project site allowed the design team to minimize the target elevation of the dredge spoil in the marsh creation areas to achieve the desired long term elevation of the constructed marsh areas. The long term target elevation of the top of fill for the marsh creation areas is +1.1' NAVD 88. To achieve this desired long term elevation, the top of the dredge spoil will be placed to a maximum elevation of +2.7' NAVD 88. The subsurface



soil conditions also allowed for the construction of containment dikes from the stiff clay material for the four marsh creation areas. The crown elevation of the containment dikes ranged in elevation from +3.5' NAVD 88 to +4.2' NAVD 88.

The borrow material will be obtained from the bed of Lake Pontchartrain for the creation of the marsh areas. The designated borrow sources are located between 3,000 and 9,000 feet away from the proposed placement areas. The material will be removed from the bed of Lake Pontchartrain with a hydraulic dredge and pumped in a slurry to each of the marsh creation areas.

The Bayou Bonfouca Marsh Creation Project is a CWPPRA project with the USFWS serving as the federal sponsor for the project. CIAP funds from St. Tammany Parish were responsible for a portion of the construction costs associated with the project.

**Weeks Marine, Inc.** was awarded the construction contract for the Bayou Bonfouca Marsh Creation Project. To date, approximately 58,000 linear feet of earthen containment dike has been constructed around the perimeter of the four marsh creation areas. Construction of the containment dikes was performed with long reach track hoes mounted on marsh tracks with spuds and earthen plugs have been installed to contain the dredge spoils. Articulating concrete mats are being placed on the exterior of the containment dikes along the edge of Lake Pontchartrain and several sections of the containment dikes are directly exposed to wind induced wave energy from Lake Pontchartrain. **Hydraulic dredge pipe and other dredge support equipment have been mobilized to the project site for construction of the dredge fill beginning in late February or early March 2017.** Approximately 3.5 million cubic yards of fill material will be placed within the contained marsh creation areas and approximately 2 million cubic yards of material will be placed in the designated marsh nourishment areas once dredge operations begin.

*Gary Leonards, PE, is a professional engineer licensed in Louisiana and Mississippi. He has over 18 years of experience in civil engineering, including work in environmental, infrastructure, and coastal engineering arenas. He has executed governmental and private industry projects. His background includes design, studies, regulatory permitting, engineering oversight, field investigations, risk-based evaluations and design for waste disposal facilities. Some notable infrastructure improvement projects include: site design for new industrial facilities, marsh creation and restoration, shoreline protection, roadways, drainage systems, levees, water treatment facilities, sanitary sewer systems, pump stations, solid and hazardous waste containment and disposal facilities, storm water runoff evaluations, and storm water conveyance design.*



# ASCE-COPRI Louisiana Chapter News

By Erin Rooney, PE, Director - Communications



COAST, OCEANS,  
PORTS AND RIVERS  
INSTITUTE  
Louisiana Chapter

The Louisiana Chapter of the American Society of Civil Engineers (ASCE) Coasts, Oceans, Ports, and Rivers Institute (L.COPRI) is continuing to promote membership and visibility throughout the State of Louisiana by conducting joint seminars with local Branches and State Sections of ASCE.

## Spring Seminar

L.COPRI is planning a spring seminar in New Orleans in March on wind energy and public-private partnership (P3) alternative project financing options. More specific details will be distributed via the L.COPRI email list as event details are finalized.

## L.COPRI Scholarship

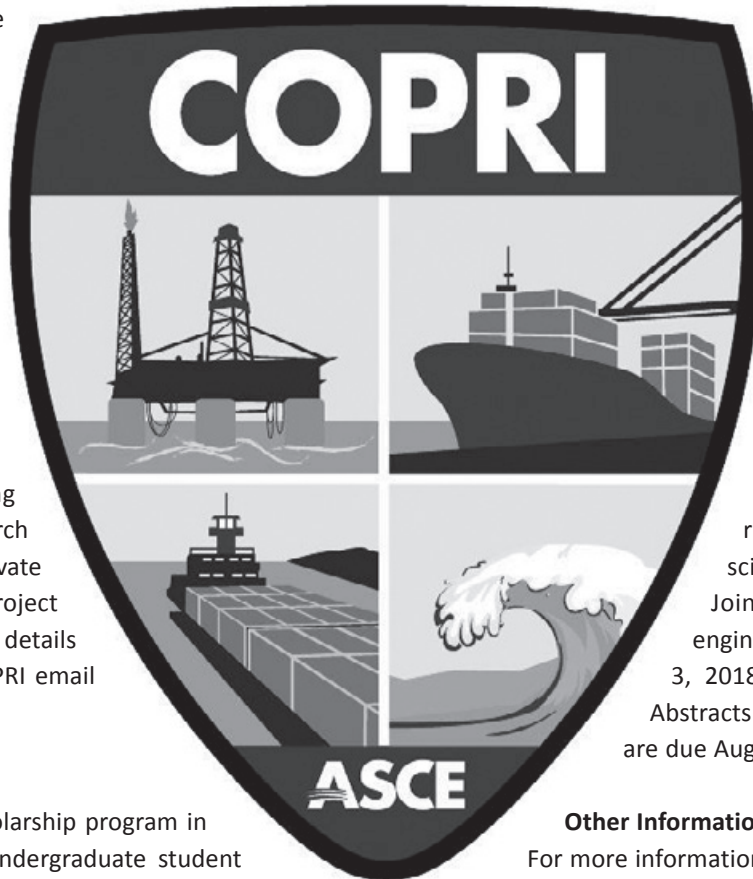
L.COPRI initiated an annual scholarship program in 2015 in which a graduate or undergraduate student studying Civil, Coastal or Environmental Engineering in Louisiana is awarded \$1,000 for their accomplishments and interest in protecting or improving the nation's coasts, oceans, ports or rivers. In 2016, we received many qualified applications from students and upon much deliberation, the L.COPRI committee decided to award scholarships to two qualified candidates with each receiving \$750. The awards will be announced at the next L.COPRI meeting in the first quarter of 2017.

## New Board Members

New board members for L.COPRI have been selected and will be introduced at the spring seminar.

Incoming board members are:

- Chair – Paul Tschirky
- Vice-Chair – Dennis Lambert
- Secretary – Tyler Ortego
- Treasurer – Erin Rooney
- Director of Programs – Andrew Woodroof
- Director of Communications – Venu Tammineni
- Director of Education – Ashly Adams-Tschirky
- YPG Chair – Myriam Bou-Mekhayel
- Past-Chair – Rudy Simoneaux



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Advisory Committee:

Ehab Meselhe  
Nancy Powell  
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Fred Tharp

## Save the Date for ICCE 2018

The 36th International Conference on Coastal Engineering (ICCE) 2018 [www.icce2018.com](http://www.icce2018.com) will provide an opportunity to learn from and network with coastal engineers, researchers, academics, and scientists from around the world. Join us at the premier coastal engineering conference July 30 - August 3, 2018 in Baltimore, MD. The Call for Abstracts opens March 2017 and abstracts are due August 1.

## Other Information

For more information on all COPRI conferences, please visit <http://www.asce.org/coasts-oceans-ports-and-rivers-engineering/coastal-engineering-conferences-and-events/>.

The activities of L.COPRI will include seminars, workshops and other activities to benefit all ASCE and COPRI members. One does not have to be an engineer to join COPRI. These Institutes are formed for the benefit of ASCE and non-ASCE members to participate and interact with other professionals interested in coastal, oceans, ports, and riverine efforts in Louisiana. If you have any questions or to add your name to our mailing list, please contact Erin Rooney, at [LCOPRI@yahoo.com](mailto:LCOPRI@yahoo.com).

# ASCE-T&DI Louisiana Chapter News

By Joffrey Easley, PE - Newsletter Editor



## 2016-2017 Scholarship Recipients

Since FY 2012, with funding from seminar proceeds, T&DI has been awarding two \$500 scholarships to junior and senior level university students who intend to pursue a career in the field of transportation. Applicants are required to submit a transcript with two academic recommendations, along with an essay regarding their interest in transportation studies, to their advisers early in the Fall semester. The applications are then reviewed and a subcommittee composed of Louay Mohammad, PhD; Bill Temple, PE; and Dan Aucutt, PE selects the recipients.

In December, the scholarship subcommittee selected Kelsie Bankston and Colby Spears as the recipients of the 2016-2017 T&DI Scholarship. Bankston is pursuing a BS in Civil Engineering from LSU while working at the Louisiana Transportation Research Center (LTRC). Spears is a senior at Louisiana Tech University and plans to graduate in May 2017. Each of the scholarship recipients received a \$500 stipend, which was sent to their respective engineering departments for distribution. Congratulations to the 2016-2017 recipients!



Rating Systems for Public Infrastructure projects. After introducing several rating systems that have been developed, the Envision Rating System was introduced and a real-world project that was rated using Envision was presented. This system was developed by the Institute for Sustainable Infrastructure (ISI), in collaboration with the Zofnass Program for Sustainable Infrastructure at the Harvard University Graduate School, and can be applied to many types of public improvement projects.

The speakers were Derek Chisholm, AICP, ENV SP, LEED GA, who is a Senior Planner/Project Manager with AECOM in New Orleans, LA and Malay Ghose Hajra, PhD, PE, ENV SP, who is an Assistant Professor in the Civil and Environmental Engineering Department at UNO. Prior to joining AECOM in 2014, Chisholm spent 14 years in Portland, Oregon, working on sustainable planning and design projects. Before working at UNO, Dr. Malay worked for multiple private engineering firms.

## Louisiana State Science and Engineering Fair

T&DI will again be participating in the Louisiana State Science and Engineering Fair. The event will take place March 21st and 22nd at the LSU Student Union Royal Cotillion Ballroom in Baton Rouge. As in past years, members of T&DI will serve as judges and present awards to the students with the top transportation and development projects. The Science Fair is always on the lookout for new judges, so if you or anyone you know is interested in being a judge, contact Lisa Graves, Director of the Louisiana Science and Engineering Fair, at [lgraves@outreach.lsu.edu](mailto:lgraves@outreach.lsu.edu) for additional information.

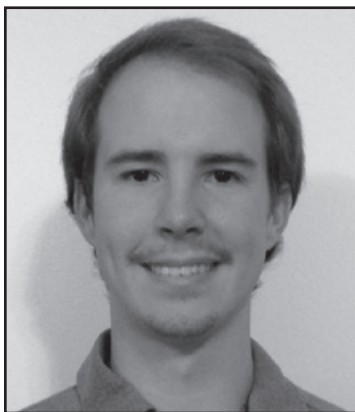
## Looking Ahead

The intent of T&DI is to promote transportation and development as a career path, and to provide training and networking opportunities for all professionals involved in transportation projects. If you are interested in co-sponsoring a seminar at your branch, the T&DI Louisiana Chapter has prepared a Seminar Coordinator's Check List to assist you in your preparation. Contact Louay Mohammad, PhD, at [louaym@lsu.edu](mailto:louaym@lsu.edu) for a copy of the checklist. Our seminars are two hours in length and are typically presented from 5:30-7:30 pm in either the New Orleans or Baton Rouge area. We have also presented out-reach seminars with the ASCE Acadiana Branch and Shreveport Branch. We are open to co-hosting seminars in additional Louisiana cities if requested. In keeping with the intent of the Institute to provide training and networking opportunities for all professionals involved in transportation projects, in addition to the upcoming seminars listed above, the Chapter is also planning the following future seminars:

- Mitigation Banking – NEPA Method
- Complete Streets from the Users Point of View
- Pavement Engineering (Part 3 of 3) Application of Earthwork and Embankment Materials



Kelsie Bankston



Colby Spears

## New Member

T&DI is excited to announce the addition of Gavin Gautreau, PE to the Executive Committee. Gautreau has served as the Senior Geotechnical Research Engineer at the Louisiana Transportation Research Center (LTRC) in Baton Rouge, LA since 2007. Prior to working at LTRC, Gautreau worked for many years in the private sector in the Environmental Services arena. He is also a past President of the Baton Rouge Chapter of the Louisiana Engineering Society (LES). He graduated from Louisiana State University (LSU) with a Bachelor of Science degree in Civil Engineering and an Environmental Engineering Minor in May of 1993.

## Sustainable Infrastructure Seminar

On November 16th, 2016, the T&DI Louisiana Chapter hosted a seminar at the University of New Orleans (UNO) on Sustainability

2017 is shaping up to be another long and difficult year around the State Capitol. A special session has been called by the Governor beginning February 13th and ending February 23rd. The purpose of the special session is to close the current mid-year budget shortfall of over \$300 million. Cuts, transfers and the possible use of rainy day funds will be used to balance the budget between now and July 1st. The 2017 regular session is a fiscal session which begins April 10th and runs through June 8th. That session will also be very trying, as the legislature will need to address structural budget problems through either tax reform, extensions of current taxes, or budget cuts. A combination of all three may be the solution. On top of that, infrastructure funding is a high priority for many. However, it will be fighting for attention against the budget problems in higher education and healthcare, as well as other tax change proposals.

The Governor's Task Force on Transportation Infrastructure Investment has concluded its work and made formal recommendations to the legislature. These recommendations include a 23 cents per gallon increase and indexing of fuel, which would raise an estimated \$700 million per year. While alternative ideas are also being proposed here are the recommendations from the Governor's Task Force: [http://www.sp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Administration/GTFTII/Pages/default.aspx](http://www.sp.dotd.la.gov/Inside_LaDOTD/Divisions/Administration/GTFTII/Pages/default.aspx). The current mid-year shortfall and the shortfall anticipated for the

coming fiscal year beginning in July coupled with plans for budget restructuring and tax reform appear to be sucking much of the air out of the legislative chambers, leaving many to worry that legislators will be too fatigued to also address infrastructure funding. If you have not already done so, now is the time to reach out to your local officials to express your desire to see our state's \$13 billion backlog of road and bridge needs addressed. In addition, reach out about the need to find a path forward to fund much needed mega-projects that are long overdue.

On the defensive front, be aware that some of the tax reform discussions and recommendations include expansion of sales taxes to new services, and we will need the engineering industry to be ready to speak out in opposition if proposals are made to expand sales taxes to engineering services. Also, we are hearing early rumors of potential renewed efforts to water down engineering testing and licensing standards, which we will stand up against to ensure public safety and to retain our high standards and national best practices here in Louisiana.

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## Branch News

### ACADIANA BRANCH

*By Sasan Daneshvar, PE, Branch President*

The Acadiana Branch with all hands on deck has been working to bring about a phenomenal experience for the attendees, speakers, and exhibitors at the 2017 ASCE Spring Conference, which is being hosted by our branch at Parc Lafayette, on April 27-28, 2017. The conference will consist of simultaneous educational tracks to maximize variety of topics, and to provide plenty of opportunities for those in attendance to obtain Professional Development Hours (PDHs). For our out-of-town visitors and those who plan to stay the night Home2 Suites, within walking distance of all conference gatherings and activities, will offer a special discount when booked in advance. Please visit our website [www.asceacadiana.net](http://www.asceacadiana.net) for additional information, to register, to sponsor, or to be an exhibitor. Sponsorship and exhibitor applications are currently available online and by mail, and recognition will be on a first-come-first-serve basis.

ASCE Acadiana has also been staying abreast of the current events by selecting meeting topics that are of great importance to the public, and inviting speakers that can best answer questions. In the wake of the devastating flood event in August 2016, the Acadiana Branch invited some of the experts in the field to explain this event, and to answer some frequently asked questions: why did this happen, how can we avoid it, will it happen again, what if I didn't flood this time. The first of these presentations was by Robert Miller, PhD a professional engineer with C. H. Fenstermaker & Associates, LLC with more than 10 years of experience in water resources

engineering, and a PhD in applied mathematics and numerical modeling from the University of Louisiana at Lafayette (ULL), who answered many questions from the curious audience. The next presentation of this series was by Emad Habib, PhD, PE, an endowed professor in the Civil Engineering Department at ULL, who also serves as the director of the Center for Water Systems Research, and associate director of the Institute for Coastal and Water Research. We also encouraged all interested parties to attend the flood codes one-day workshops provided by the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) in conjunction with the Federal Emergency Management Agency (FEMA), in February.

Another newsworthy topic that could potentially bring about some change in the transportation field is the Governor's Task Force on Transportation Infrastructure Investment that submitted its formal recommendations to the Governor in December 2016. Prior to the release of this report, the ULL ASCE Student Chapter hosted the branch meeting on campus where Bill Oliver, LADOTD District 03 Administrator, provided transportation updates in the Acadiana area. Upon the release of this report the Acadiana branch in conjunction with LES Lafayette invited Senator Page Cortez, chairman of the Senate Transportation Committee, to speak about this report, provide legislative updates, and shine light on the path ahead in the 2017 legislative session.

## BATON ROUGE BRANCH

*By Khali Cohran, PE, Branch President*

The Baton Rouge Chapter closed the books on 2016 with our annual Christmas Party. Our upbeat crowd of engineers wined, dined, and had a good old time at the Bocage Raquet Club to end the 2016 season on a Great Note! After a long year, it was an uplifting night. To round out our 2016 series of association luncheons, Scott Kirkpatrick with Capital Region Industry for Sustainable Infrastructure Solutions (CRISIS) presented in November. This provided a follow up to DOTD Secretary Dr. Shawn Wilson's presentation in October on the recently chartered Governor's Task Force on Transportation Infrastructure Investment. The task force, has been traveling the state soliciting regional input concerning transportation priorities. Kirkpatrick discussed the priorities presented by the Capital Region delegation to the Governor's Task Force.

We kicked off strong our 2017 series of event in January with a very full agenda scheduled for 2017. Our luncheon venue has moved to Juban's, which seems to be a refreshing change of setting. Despite the horrible weather, we had a great turn out for the January luncheon. Bob Jacobsen, PE was our speaker and presented a very informative discussion on the Amite River Basin (ARB), the historic August 2016 flood, history of ARB flood risk management, and challenges of ARB regional flood risk mitigation. The LSU student chapter was also treated in January, to a very special guest, Norma Jean Mattei, PhD, PE, F.SEI, F.ASCE, 2017 President.



*Baton Rouge Branch officers celebrate Christmas Party at Bocage*



*Baton Rouge Branch members enjoy the Christmas Party*



*Bob Jacobsen, PE discusses the Floods of August 2016 at the January 2017 Luncheon*



*Baton Rouge Branch members celebrate at the Christmas Party*



*LSU Student Chapter meeting with ASCE National President Norma Jean Mattei, PhD, PE*



*LSU Student Chapter presents National President Mattei a recognition certificate*

## NEW ORLEANS BRANCH

*By Tonja Koob, PE, Branch President*

The New Orleans Branch has had an active quarter with luncheon speakers, Younger Member events, and STEM outreach. In December, Glen Andersen, PhD, PE, gave a presentation on “Challenges in Managing an Aging Infrastructure: Lessons Learned from a Near Miss on the Lake Manatee Dam,” which 50 members attended. In January Tyson Ducote and Joe Harman, PE gave an ethics presentation on “LAPELS Enforcement Procedures and Recent Case Review” attended by 70 members.

Our Younger Members committee chair, Andrew Woodroof, organized a joint holiday event with the SAME Younger Members committee. Over 40 younger members attended this annual party.

Stephanie Bayne, the E-week coordinator, has been working with the University of New Orleans to bring the *Dream Big* film to the UNO campus. The film will show 5 times to middle and high school students and university students and faculty. The New Orleans Branch is underwriting the cost of the film’s presentation to our local audience. We also sponsored a pizza party for MathCOUNTS, an annual outreach program of this branch.

Scott Smith, our UNO student chapter liaison, met with the student chapter board in January to provide guidance and assistance for their

steel bridge, concrete canoe, and surveying competition fund raising efforts. Students presented their progress to date and budgetary needs at the December and January professional luncheons, providing them opportunities to give professional presentations to potential future employers.

The New Orleans Branch’s new website went live in January after a four-year hiatus. Website committee chair Om Dixit was instrumental in bringing this project to fruition. Our new website address is [www.asceneworleans.org](http://www.asceneworleans.org).

President-elect Karishma Desai attended the 2017 ASCE Workshop for Section, Branch, and Institute Leaders in Newark, NJ. This is the first time in five years we were able to send a representative from the branch to the national leadership development workshop.



*Glen Andersen and Tonja Koob at December luncheon*



*Younger Member Party*

## SHREVEPORT BRANCH

*By Jared Boogaerts, PE, Branch President*

I would like to say Happy New Year to all the readers on behalf the ASCE Shreveport Branch. We ended the 2016 calendar year with our Annual Christmas Party. It was held at Ralph and Kacoo’s Seafood Restaurant and is where we give back to our members by offering them a time to come enjoy a free lunch and participate in a drawing for door prizes. We had great turnout!

To kick off the New Year we had our first of two annual ASCE-LES joint meetings where Jim Tilley with CenterPoint Energy came to give us an informative presentation on Hydraulic Fracturing. We had a great turnout for nearly 50 members across both LES and ASCE in attendance.

We are currently planning our Annual ASCE Spring Classic for early May 2017. This is a fundraising event in the form of a golf tournament where we invite all the local Engineering and Contracting

Firms to participate. All proceeds of this tournament go towards scholarships for the Outstanding Senior and Junior at Louisiana Tech University.

The Louisiana Tech University Winter Banquet was February 10th at the Thomas Assembly Center in Ruston, LA. There our Branch gave out \$2000.00 in scholarships to 3 students. They are Mary Voisin and Colby Spears, Outstanding Seniors and Joshua Ridley, Outstanding Junior. I would like to congratulate them again on their achievements.

Our next meeting was Thursday, February 16 where we heard from Dixon Dean, PE from Contech Engineered Solutions on TOPIC. Next month’s meeting is scheduled for March 8th and will be our second ASCE-LES Joint meeting where we will be hearing a presentation of Ethics from LAPELS.



*Left to right: Mathew Redmon PE, Colby Spears (Outstanding Senior), Joshua Ridely (Outstanding Junior), Mary Voisin (Outstanding Senior), Jared Boogaerts PE, and Ali Mustapha PE*



# ASCE-SEI New Orleans Chapter News

By Om Dixit, PE, FASCE, F-SEI



The ASCE SEI New Orleans Chapter has been busy in planning seminars and workshops for 2017. The future seminars include Simplified Seismic Design for Louisiana, Embedded Anchor Design, Steel Design-Connections/joints and many more. The plans are being finalized for 2017 Annual David Hunter Lecture “Common Structural Steel Connections (R<sub>s</sub>3): Efficient Design”, which will be presented by Victor Shneur, PE (LeJeune Steel Company, Minneapolis, MN) on May 16, 2017 at UNO. More details will follow.



multi-story commercial building from roof to foundation, per the IBC 2015. Special emphasis was placed on lateral loading for high coastal wind loads, and the design of steel connections for moment frames and braced frames. About 53 members attended this seminar.

SEI-NO is planning to participate in sponsoring the Annual Regional MathCount competition. SEI NO will also providing the judges and awards for the annual New Orleans Regional Science fair planned in February.

On December 8, 2016 SEI NO invited Bryan Wert, MS, PE, SECB (Simpson Strong-Tie, McKinney, TX) to present the seminar “Design of Wood Structure Shear Walls for High Wind and Seismic Loads”. Shear walls of plywood or other rated sheathing are the primary lateral load resisting elements of most wood framed structures. Wert covered shear wall design procedures of SDPWS-2015 (Special Design Provisions for Wind and Seismic). SDPWS is the code specified by the IBC for wood-frame shear wall design. Segmented, perforated, and force transfer design methods were reviewed. Applications requiring pre-fabricated shear walls were also presented. 39 members attended the seminar.

ASCE New Orleans Branch has a new web page (<http://www.asceneworleans.org>) which went live in January. It has all the information and news about ASCE New Orleans Branch and its committees. SEI NO has a corner for its news and activities. The members could go and join our email list for the future event announcements. There is an events calendar listing all the future seminars and luncheons. Members will be directed to registration page for preregistration to the event. Members could also follow the activities and news of SEI-NO on Facebook @ SEINOCHAPTER.

On January 19, 2017, SEI New Orleans Chapter invited Matt Brown, SE (RISA Technologies, Foothill Ranch CA) to present the seminar “Structural Design of a Multi-Story Building Subjected to High Wind Loads Using 3-D Interactive Structural Analysis Software.” Brown demonstrated how engineering software can be used to design a

The committee is looking for good topics and speakers for future presentations. Members with expertise in the field of structural engineering would be welcome to join the Executive Committee. For any suggestion and information on joining the Executive Committee, contact Chairman Mark Castay, PE at [MCastay@trcsolutions.com](mailto:MCastay@trcsolutions.com).



SEI NO Seminar on January 19, 2017 – Speaker Matt Brown, SE (Left) with Seminar Coordinator Jay Jani, PhD, PE



SEI NO Seminar on December 8, 2016 – Speaker Bryan Wert, MS, PE, (Center) with Seminar Coordinator Michael Folse, PhD, PE, SE (Left)

# Student Chapter News

## LOUISIANA STATE UNIVERSITY

*By Summer Flowers*

ASCE at Louisiana State University (LSU) has held three meetings featuring guest speakers from Jacobs, the Department of Transportation (DOTD), and the International ASCE Chapter. Additionally, a total of four community service opportunities have been promoted by our community service chair William Saunders. Our Steel Bridge and Concrete Canoe teams have also been working diligently to prepare for the Deep South competitions that will be held in March 2017.

The second ASCE at LSU career fair date will be held on March 22, 2017 and will be aimed towards both civil and environmental engineers; we are confident that it will be as great of a success as it was last semester. We would like to thank our president Joshua Olivier and career fair planner Denzel Flores for helping to keep this

event going. This smaller scale career fair provides civil and environmental engineering students with a more personal experience than those on a larger scale would.

It is without a doubt that we are always looking for speakers who are eager to share their experiences to our members here at LSU. Not only does this provide our young engineers with an invaluable networking experience but it also gives a much needed insight into the professional world we will soon be diving into. If you are interested in speaking at one of our meetings about licensure, professional development, ethics, current civil or environmental projects, etc., please contact: [asce@lsu.edu](mailto:asce@lsu.edu) or visit [www.lsuasce.weebly.com](http://www.lsuasce.weebly.com). We would be glad to hear from you!

## UNIVERSITY OF NEW ORLEANS

*By Enrique Andres McDonald*

The ASCE University of New Orleans (UNO) Chapter is poising itself, once again, to be a formidable competitor at the DEEP SOUTH Regional Conference. With the support of our professors, local community, and professionals, we have been working diligently to prepare for the events hosted by The University of Memphis this spring. We can say that we have a great family here who all want to see our school succeed. When the fall semester began, and our first meeting was hosted, there were many new faces of students eager to be a part of the society and get involved. With this brought a lot of excitement, and anticipation, to get the ball rolling with our projects. With our main goals for our bridge and canoe being "simplicity and quality," let me tell you about our experiences so far this year.

Only a handful of us attended the conference last year, so we spent some time explaining the experience to our new members. We talked about our successful plans, the not-so-successful outcomes, and our newer members were able to provide creative ideas with a fresh perspective. The desire to win sparked in us all. We began designing immediately, consulting our professors, suppliers, expert welders and professionals who have design experience. Getting a head start on good designs will ensure that we will have time to address any flaws. When creating a design for each event, we exercised care and attention to detail, for the rules to the competitions change each year. For example, the concrete mix used in "The Float," our concrete canoe from last year, is not allowed because some of the lightweight aggregates that were used are now prohibited. This led us to reach out to members who participated in previous years for advice on creating the right mix. Ultimately, we tried

new mix combinations, waited 7 days for curing, then tested and measured the concretes' properties to determine which one would best suit our canoe. The Canoe Team has even installed a timed irrigation system in UNO's concrete lab, to aid the curing process.

One of our captains for the Steel Bridge Team has experience from the conference last year, in which the team exceeded the time frame for building the bridge. We decided which factors caused last year's loss, and brainstormed methods to overcome obstacles for this year. Simplicity, quality welds, and meticulous fabrication are goals that we set to achieve with this year's bridge. To fulfill these goals, we aim for a design that will be strong and quick to construct at the competition. Under the wing of a professional welder we spent hours learning and practicing, and have managed our time wisely to ensure we will have time to perfect our final products. We are on schedule with fabrication, and will be practicing the construction process soon.

With this year's goals being simplicity and quality, we have learned how to network with professionals and fabricate under expert supervision. We look forward to our success at the competition!



*Practicing welding techniques in the Steel Lab at UNO (From left to right Kristabelle Mendoza, Enrique McDonald, Donald Gllardon)*



*Preparing Mold for Concrete Pour in Concrete Lab at UNO (from left to right: Francisco Avelar, Homero Toledo, and Spencer Marston)*

# 32ND ANNUAL WORKSHOP OF THE ASSOCIATION OF LEVEE BOARDS OF LOUISIANA

Register now for the **32nd Annual Workshop of the Association of Levee Boards of Louisiana**, which will be held as a joint effort with the Coastal Protection and Restoration Authority. The Workshop will be held on May 4-5, 2017, at the Crowne Plaza Hotel, Constitution Avenue (I-10 and College Drive), Baton Rouge. **For more information, please contact:** ASSOCIATION OF LEVEE BOARDS OF LOUISIANA POST OFFICE BOX 2961, BATON ROUGE, LA 70821 Phone: (225) 405-0884 | Email: louisianalevee@live.com | Website: <http://www.albl.org/> **“Without Flood Control, Nothing Else Matters.” Cory Kief - President, ALBL**

## — CALENDAR OF EVENTS —

### MARCH 2017

March 9 LCOPRI Offshore Wind Energy Seminar – New Orleans, LA  
March 14-15 ASCE Fly-In in Washington, DC

### APRIL 2017




April 27-28 Louisiana Section Spring Conference – Lafayette, LA

### MAY 2017

May 4-5 32nd Annual Workshop of the Association of Levee Boards of Louisiana – Baton Rouge, LA

For more events visit the ASCE Events Calendar: <http://www.lasce.org/calendar.html>

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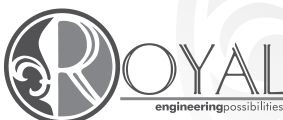
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