

# LOUISIANA CIVIL ENGINEER

Journal of the Louisiana Section

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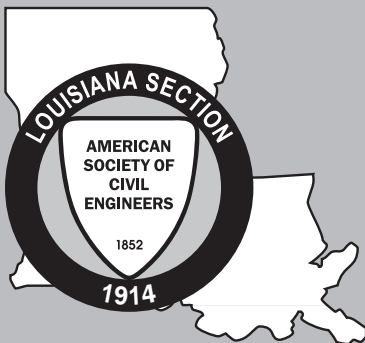
Draining the Bowl:  
New Orleans' Drainage  
System is a Civil  
Engineering Landmark

## NEWS:

Louisiana Section  
Installation & Awards  
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**Malay Ghose Hajra, PhD, PE**  
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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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*Louisiana Civil Engineer* quarterly journal is an official publication of the Louisiana Section of the American Society of Civil Engineers with an average circulation of approximately 2100. The Section neither guarantees the accuracy of the information provided nor necessarily concurs with opinions expressed. It does not claim the copyrights for the contents in this publication. Please submit letters and articles for consideration to be published by email to [nedrasuedavis@gmail.com](mailto:nedrasuedavis@gmail.com) or mail to the Publications Committee c/o Nedra S. Davis • 622 Steele Blvd. • Baton Rouge, LA 70806-5742.



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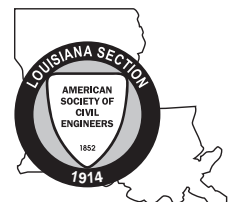
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*The Louisiana Section is located in ASCE Region 5 that consists of the Louisiana, Mississippi, Alabama, Georgia, and Florida Sections.*



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# President's Message

*By Malay Ghose Hajra, PhD, PE*

Greetings to all American Society of Civil Engineers (ASCE) – Louisiana section members, section affiliates, student chapters, and those with an appreciation for and interest in civil engineering. Welcome to another exciting year with ASCE in Louisiana. I want to thank the membership of the Louisiana Section of ASCE for its faith and confidence in allowing me to serve as the Section President in 2017-2018. I am honored and privileged to take on this responsibility.

It is exciting to kick-off this term knowing that the past leadership has laid a strong foundation on which to continue expanding community initiatives, student and younger member group events, increase membership, and overall visibility to the civil engineering profession. I would like to congratulate and welcome members of the board, institutes and numerous committees. You are the individuals that help make the section accomplish its short and long term goals and objectives. So thank you for volunteering your time and efforts - they truly make a positive difference in our success.

I want to thank members of the 2016-2017 ASCE Louisiana section board for their commitment and hard work during the past year. Led by Matthew Redmon, PE, the board accomplished a lot including the colossal task of updating Louisiana's infrastructure Report Card, which included a new category. An expert team of more than 50 civil engineers assembled to evaluate and study 11 major components of Louisiana's infrastructure for more than 18 months. The updated 2017 Louisiana Report card was unveiled in April of this year and included specific policy and funding recommendations that will assist state leaders and stakeholders allocate necessary funding for construction, upgrade, and maintenance of civil infrastructure systems. I want to personally thank the entire team for their outstanding accomplishment with the 2017 Louisiana Report Card.

On September 22nd, 2017 the New Orleans branch hosted the Annual Louisiana Section Officer Installation and Awards Banquet in Metairie, Louisiana. Over 45 members attended the event, which honors the exceptional accomplishments of our outstanding members throughout the state. I am delighted to congratulate all the Louisiana section award recipients. It is a great triumph when your peers and colleagues overwhelmingly recognize you for your service to the civil engineering profession and success in your professional and personal endeavors. Learning about the amazing undertakings of our outstanding members truly inspires and motivates every one of us to work harder and reach for new professional and personal goals, while giving back to our profession. ASCE and the Louisiana engineering profession are thankful to have such outstanding professionals, and we are glad we could honor you.

The auxiliary purpose of this meeting is the installation of the Louisiana Section officers for 2017-2018. We were honored to have Norma Jean Mattei, PhD, PE, the current President of ASCE,

install the new officers. I want to extend my sincere gratitude and appreciation in advance, to the Louisiana section board members for the coming year – President elect – Rudolph Simoneaux, PE; Vice President -- Beau Tate, PE; Secretary-Treasurer -- Joe "Butch" Ford, PE; past President – Matthew Redmon, PE; and directors – Tonja Koob Marking, PhD, PE, Kirk Lowery, PE, Deborah Keller, PE, Brant Richard, PE, Tyler Roy, PE, David Smith, PE, Karishma Desai, PE, Jared Veazey, MS, PE, and Tim Wright, EI for their time and effort in organizing the different ASCE related events throughout the year.

A special recognition goes to Norma Jean Mattei, PhD, PE for representing ASCE New Orleans and the Louisiana section at the international level by serving as the President of ASCE during the 2016-2017 term. Dr. Mattei – you have been a diligent ambassador and true champion for our region and we appreciate and celebrate your accomplishments as ASCE President.

The American Society of Civil Engineers represents more than 150,000 members of the civil engineering profession in 177 countries. Founded in 1852, ASCE is the nation's oldest engineering society. Through the expertise of its active membership, ASCE is a leading provider of technical and professional conferences and continuing education, the world's largest publisher of civil engineering content, and an authoritative source for codes and standards that protect the public. Founded in 1914, the Louisiana section of ASCE is divided into four branches and currently serves its almost 2000 members.

I joined ASCE back in 1998 while pursuing my graduate degree at Kansas State University. ASCE is a great organization that helps build relationships through monthly meetings and networking events. I have been fortunate enough to know and work with many of you in different capacities. I can say that the networking opportunity and friendship with my peers have served me well over the years. ASCE also provided me with numerous opportunities and avenues to hone and improve on my leadership and communication skills.

Like previous years, I would like to focus on growing and retaining our membership in the coming year. As ASCE members, we are all in a position to support the advancement of our profession while enjoying the benefits of camaraderie and community building.



**Malay Ghose Hajra, PhD, PE**

If you know of a civil engineer who are currently not member of ASCE, I encourage you to invite them to your local ASCE events and monthly luncheons. Please encourage them to join ASCE by sighting the multitude of benefits enjoyed by its members.

For our current members, I want to encourage the branch and institute leadership to continue to serve them by providing affordable continuing education events and conferences. At the Louisiana section level, I plan to continue a recent tradition of having a half-day technical seminar near one of our underserved areas, such as Covington, Alexandria, Monroe, or Houma. This program has been well received in the past in Lake Charles. This event provides members in areas away from larger Louisiana cities to acquire their professional development hours (PDH) for licensure renewal. The four ASCE branches can also consider similar monthly luncheon events to serve local members located away from their city.

I also want to encourage leadership and members of each branch to stay connected with their local ASCE student chapters and younger member groups. One of our professional responsibilities is to provide effective mentoring to civil engineering students and younger members. As indicated in ASCE's Mentoring Tips and Strategies Guide, the rewards of mentoring in the profession of civil engineering are immense — for both mentors with practice experience, management skills or a technical expertise and protégés eager to learn and gain insight. Great civil engineers can and need to be constantly developed and nurtured through effective and ongoing mentoring and training programs to ensure the vital transfer of knowledge. It is upon us to help shape the future of our beloved profession by cultivating young engineers and leaders, who will carry the baton to greater heights of engineering excellence, professionalism, and ethical conduct. Planning joint monthly events and speaking at their regular gatherings are great ways to share the positive aspects of the civil engineering profession. I also encourage the branch leadership to contact local schools to arrange presentations on career opportunities in engineering. This will help more students to consider (civil) engineering as a rewarding career choice when they are debating on which profession to

choose. ASCE headquarters can help you with the presentation and supplementary handouts/ hands-on-activity ideas.

In partnership with MacGillivray Freeman Films, and presented by the Bechtel Corporation, ASCE has created a giant-screen film about engineering named "Dream Big: Engineering Our World." This film is intended to take viewers on a journey of discovery from the world's tallest building to a bridge higher than the clouds. Along the way, the audience will witness how today's engineers are shaping the world of tomorrow. Combined with educational programming and powerful media, Dream Big will:

- Inform the public about the important work engineers do, helping to heighten interest and change perceptions about the profession.
- Inspire young people to consider careers in engineering, and
- Answer the demand for K-12 engineering education resources, in alignment with the Next Generation Science Standards

I recommend the branch leadership to use this resource to host a university campus or high school screening and spread the words about the Civil engineering profession.

Our scheduled programs for the upcoming year are taking shape and I encourage you to explore all the ways we aim to provide value to our members and the community. Each branch hosts community outreach events, technical institute seminars, college student mentoring, younger member activities, monthly luncheons, and various networking and social happenings. I encourage all of you to find a way to become an active participant with your local ASCE branch in whatever aspect of ASCE you feel passionate about. We hope to see you all at many of the upcoming events and activities.

In the coming year, the Louisiana Section of ASCE will continue to be active in its endeavors to serve both its members and the public. I am excited about this upcoming year and look forward to, with the help of the board and committee members, continuing to meet the challenges that the Section has undertaken. I invite all of you to join

my fellow board members and I in this journey to enhance the Civil Engineering profession among us and within the Louisiana community through exchange of knowledge, outreach work, volunteer work, and any other forms of community service. If you have any ideas or would like to participate or organize any event, or suggest a good speaker for one of our technical luncheon meetings, please contact me, or any of the board members. Please also visit our website [www.lasce.org](http://www.lasce.org) for upcoming events and announcements.





# Draining the Bowl: New Orleans' Drainage System is a Civil Engineering Landmark

By Benjamin Maygarden and Tonja Koob Marking, PhD, PE; Gaea Consultants, LLC

Post-Katrina controversies contributed to mis-appreciation of how civil engineering has shaped the City of New Orleans. In the 1800s, New Orleans was unlikely to attain its potential importance without an effective drainage system. Forward-thinking civil engineers designed such a system in the 1890s, but those engineers--Rudolph Hering and Benjamin Harrod of the New Orleans Drainage Commission, and L.W. Brown, City Engineer-- are now largely forgotten. Attention to the Wood screw pump has overshadowed the contributions of the civil engineers, but the drainage system's success was not based on Wood's later mechanical improvements. The civil engineers devised a system for lifting groundwater and normal precipitation runoff to an outfall into Lake Borgne, with diversion of stormwater into Lake Pontchartrain. The Drainage Commission began system construction in 1897, and the system allowed New Orleans to increase exponentially in size during the twentieth century. Whether New Orleans' growth may be untenable in the future does not affect the significance of the New Orleans drainage system to the history of American civil engineering.

Hurricane Katrina provided an indelible image of an inundated New Orleans, suggesting an ultimate engineering failure to prevent the disaster, or the inexorability of the forces of nature, depending upon one's perspective. However, the rush of post-Katrina debates and controversies has contributed to a mis-appreciation of how civil engineering has shaped the city -- for both good and ill.

New Orleans has unique topographical conditions that are not naturally favorable to urban development. The highest land is along the banks of the Mississippi River, where alluvial deposition formed natural levees over thousands of years. From the natural river levees, the land descends in elevation toward areas naturally in baldcypress swamp, before rising again to smaller natural levees that formed along distributary bayous: Bayou Metairie, Bayou St. John,

and Bayou Gentilly. On the lake-side of these bayous, backswamp transitioned into marshes along the shore of Lake Pontchartrain, a brackish estuary connected to the Gulf of Mexico. The powerful Mississippi River is naturally capricious, and periodically breached the feeble artificial levees erected by the inhabitants to hold back floodwaters.

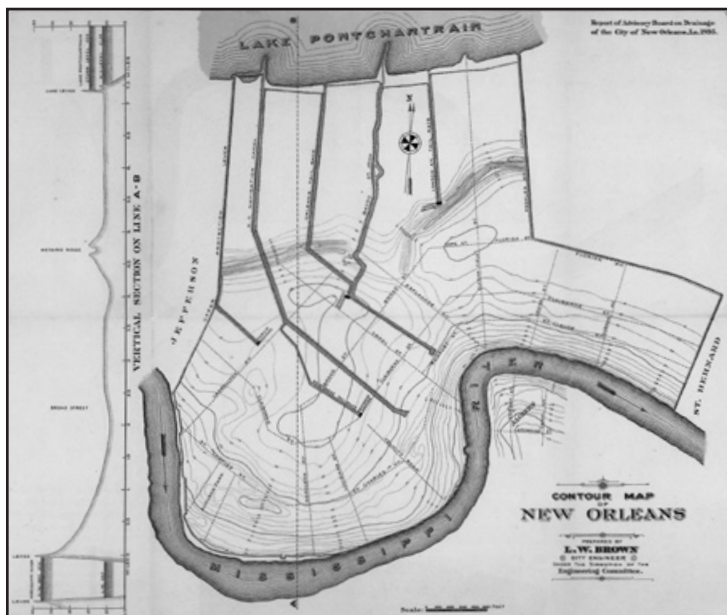
Despite the challenging natural environment, New Orleans became a major city as a result of its economically strategic position near the mouth of the Mississippi River. Between 1810 and 1880, New Orleans' population grew 12-fold and remained among the top ten U.S. cities in total population. In the late 1800s, New Orleans was in large part still perched precariously along the banks



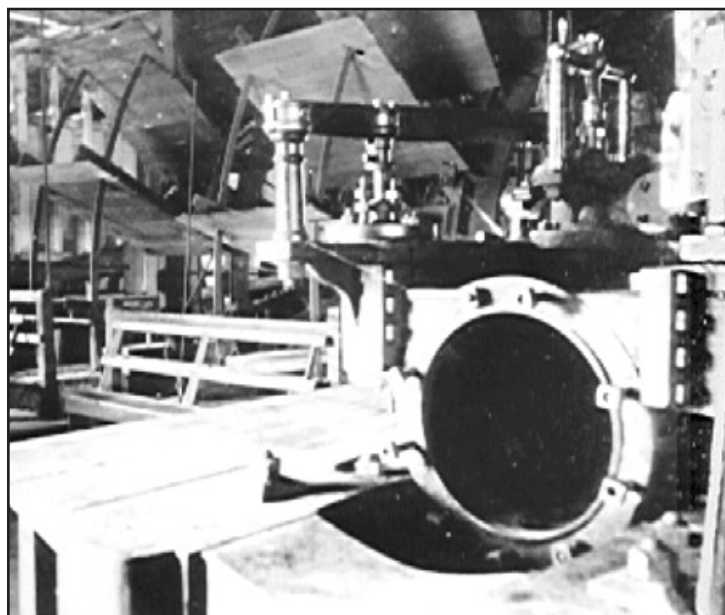
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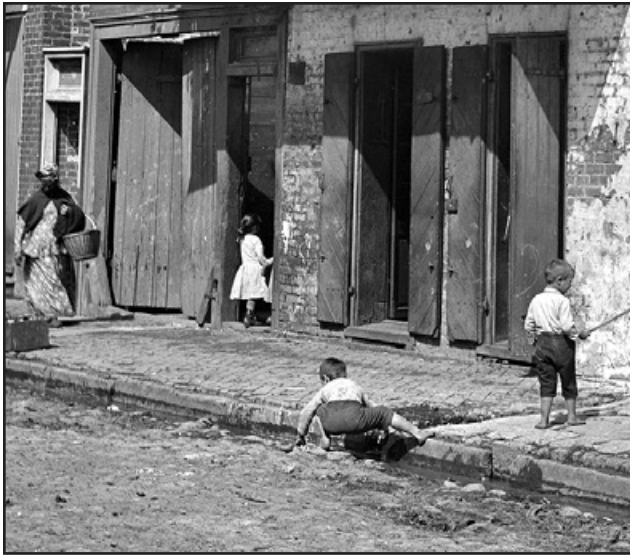
*Tonja Koob Marking, PhD, PE*



*Contour Map of New Orleans (1895)*



*Dublin drainage machine*



*Gutter (1890)*



*Life boat practice, west end (1890-1901)*

of the Mississippi River and along the bayou ridges, hemmed in by swamps. The city was highly unlikely to attain its potential economic and cultural dimensions without an effective and flexible system of drainage.

Improving drainage of the settled areas of the city were long a matter of great public interest in New Orleans, but real improvement was difficult, not only because of natural conditions. By 1871, it was acutely obvious that drainage had to be improved. The city embarked on a plan of drainage improvement, but was seriously hampered by insufficient technical and technological knowledge. Civil engineering knowledge was advancing rapidly during the nineteenth century, but applying that knowledge to New Orleans conditions was not straightforward.

The 1871 plan consisted of draining the developed areas of the city by a series of canals to “drainage machines,” steam-powered paddle wheels that lifted the drained water into outfall canals that ran to the lake. It did not work well for a number of reasons. First, there was no effective network of street drainage. Precipitation runoff into the canals was woefully haphazard, and only areas in proximity to the drainage canals had any sub-surface drainage effect. Secondly, the levels of the outfall canals were based on insufficient hydraulic evaluation, so the water did not flow efficiently either to or from the drainage machines to the outfalls. Lastly, the drainage machines were simply inadequate to handle the subtropical rain events that befell the city. Centrifugal drainage pumps had been developed in 1851, but two decades later civil engineers could not yet apply sufficient pumping lift to the problem of how to drain New Orleans.

In the second half of the 1880s, New Orleans civil engineers began to analyze the city’s drainage challenges in innovative ways. Two engineers in particular, Linus W. Brown and Benjamin Morgan Harrod, share engineering credit for the basis of the New Orleans drainage system and for executing the fundamental design. While not entirely forgotten, the contributions of these civil engineers to New Orleans drainage, without which the city’s history would have been radically different, has largely been overshadowed by the later contributions of mechanical engineer Albert Baldwin Wood and his revolutionary drainage pumps. However, the drainage plan adopted

by the City of New Orleans in 1895 and its primary success were not based on Wood’s pumps, but on the quality of its civil engineering.

Brown is usually credited with “planning” the New Orleans drainage system. Harrod is often viewed as merely executing Brown’s plan. The working relationship of L.W. Brown and B.M. Harrod was complex, and the reality of the system’s development is such that credit cannot go to a single engineer. Brown and Harrod had different backgrounds. The older man, Harrod, was a native New Orleanian who studied at Harvard and served in the Confederate Army. As Louisiana State Engineer in 1877 and member of the Mississippi River Commission in 1879, Harrod worked with many aspects of hydraulics, flood control, and drainage. Harrod became City Engineer of New Orleans in 1888. Brown was a New Yorker trained as a mechanical engineer at the Stevens Institute of Technology and came to Louisiana to work for the Southern Pacific Railroad. Brown was also the assistant City Surveyor.

Brown began studying drainage issues in New Orleans in 1885. In 1888, the same year he became Assistant City Engineer under Harrod, he presented a draft of the eventual general drainage plan to the New Orleans Auxiliary Sanitary Association. While Assistant City Engineer, he and Harrod thoroughly discussed the city’s drainage problems. They agreed that no real drainage planning work could go forward without a detailed topographic survey of the city, something which had never been performed. Harrod had tried in vain to convince the state legislature to fund a topographic and hydrographic survey of New Orleans in 1888, and pressed the City Council to do the same after he became City Engineer.

A window of opportunity opened in 1892 when the new Mayoral administration of John Fitzpatrick took office. The city named an Advisory Board of Engineers to study drainage issues, composed of B.M. Harrod, Louisiana State Engineer Henry B. Richardson, and nationally-renowned hydraulic engineer Rudolph Hering. The City Council finally agreed to appropriate funds for a topographic survey. The Advisory Board instructed City Engineer Brown as to “necessary investigations,” to “obtain information to formulate a drainage plan” while the survey was underway, and to “pass upon such a plan as may be submitted to the City Council.”



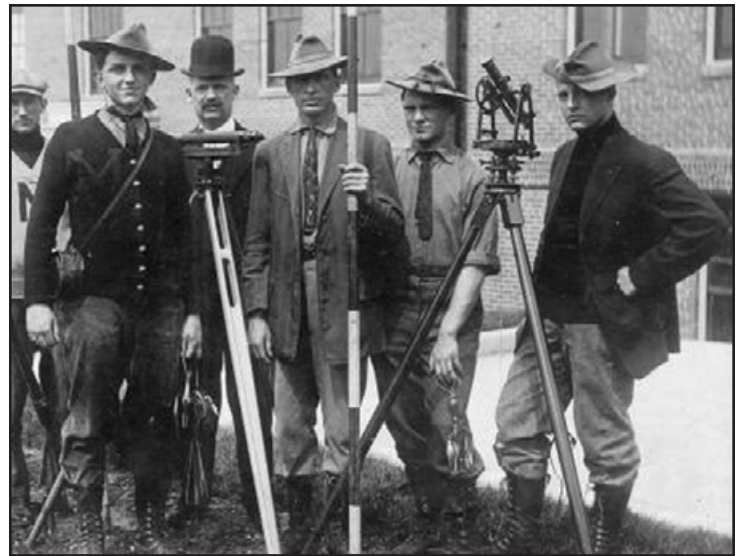


*Drafting room*

The three senior engineers became the Engineering Committee when the Advisory Board enlarged to include political appointees. The Engineering Committee had a great depth of civil engineering experience. B.M. Harrod likely was the lead, and after the 1895 drainage plan was adopted, he was Chief Engineer for the New Orleans Drainage Commission. From 1896 to 1902, Harrod was responsible for the technical specifications of the drainage system power station, drainage pumping stations, drainage network, and canals. This detailed work made a functioning system possible. Harrod supervised construction of the system elements until 1902. His reputation grew with the project, and he was named to the Isthmian (or Panama) Canal Commission. He was the only member of the first commission re-appointed on the second. Harrod was also a notable architect, and among his many other achievements, he served a term as president of the American Society of Civil Engineers.

German-born Rudolph Hering was a renowned engineer in drainage, river, sanitary, and hydraulic engineering. Among his major accomplishments, was as Chief Engineer of the Chicago Drainage and Water Supply Commission during the Chicago Sanitary and Ship Canal project. Hering served as vice-president of the American Society of Civil Engineers. Henry B. Richardson was for 24 years the Chief State Engineer of Louisiana, a period when the state's river levee system was much improved, and succeeded B.M. Harrod as a member of the Mississippi River Commission. He also served on the Board of Directors of the American Society of Civil Engineers.

The survey began in July 1893 and was completed in the spring of 1895. City Engineer L.W. Brown was in charge of the survey, and subsequently credited W.C. Kirkland, second assistant City Engineer and future Sewerage and Water Board engineer, as his chief assistant in the survey. The topographic survey provided the crucial quantitative data that had not been available to previous engineers attempting to solve the city's drainage problems. As quantified by the survey, the lowest portions of the city laid between the Mississippi River natural levees and those of Bayou Metairie and Bayou Gentilly. The natural levees form a "bowl," the most common analogy used to describe New Orleans' topography. However, large portions of the City's area were outside of the bowl. Mostly



*Surveyors*

backswamps or marsh, these naturally swampy areas were largely undeveloped in the 1890s.

The primary design concern was New Orleans' prodigious subtropical precipitation. Previous drainage efforts had no systematic collection network of street gutters and drains. Consistent rainfall data for analysis had only become available in recent decades. Between 1880 and 1890, New Orleans averaged more than 57 inches of rain per year, with precipitation almost one day in three, and periodic rains of 6+ inches in 24 hours. Since the ground could not absorb all of that water, drainage had to convey most of the precipitation out of the developed areas of the city. The secondary concern was lowering the ground water table. The drainage capacity necessary in the subtropical climate led the engineers to decide on separate systems of drainage and sanitary sewerage. New Orleans was not the first, but was an early American example of separate sewerage and drainage systems. Sanitary sewerage and water supply were projects of the Sewerage and Water Board (organized in 1899), which had no part in the design or construction of the drainage system before 1902.

Topography posed a problem in conveying runoff from areas of higher elevation to potential outfalls. Since high river stages were higher than nearly all of the city, and since variations in the level of the lake were smaller than variations in the river stage, drainage outfalls could realistically be either Lake Pontchartrain or some other sea-level outfall such as Lake Borgne, but not the Mississippi River. The Engineering Committee considered the capacity required for "pump to the river," from the lowest portions of the city to the highest, unrealistically large with the pumps available at that time.

Previously, city drainage emptied haphazardly into Lake Pontchartrain via drainage and navigation canals. The largely organic pollution in runoff was a problem and considered unsustainable as the city grew. The Advisory Board wanted to change this situation. The lake itself was an important resource, and real estate on the lake edge of Orleans Parish had become valuable for resort and recreational development. The Advisory Board reflected the concern of business leaders and politicians to maximize the benefits of improved drainage in as much of the city as possible without destroying the

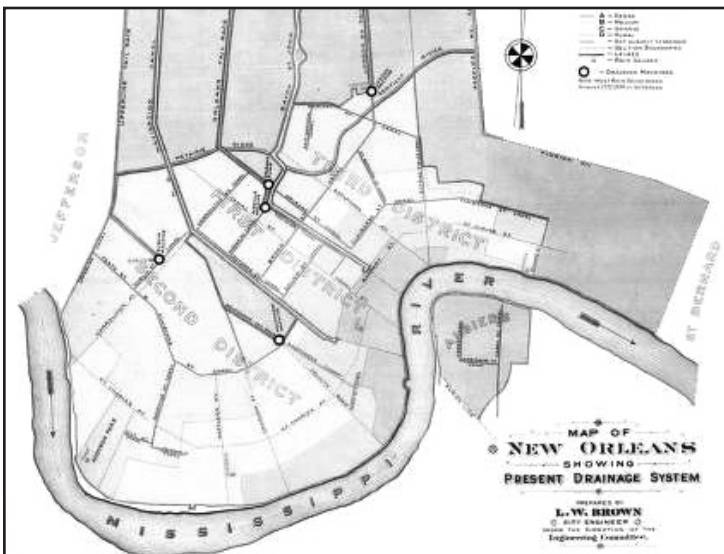


Orleans Canal (1898-99)

existing and potential economic value of the Lakefront. Therefore, they carefully considered the outfall issue.

The 1895 Drainage Plan for the City of New Orleans is usually credited to L.W. Brown. The maps of the plan included in the official Report on the Drainage of New Orleans state that they were prepared by L.W. Brown as City Engineer, but “under the direction of the Engineering Committee” of Harrod, Hering, and Richardson. It is likely that a number of the engineers made contributions to the Plan as it finally appeared in the Report.

Engineers conceived the New Orleans drainage system on a large scale, encompassing a population of 280,000 persons, plus a large area of soggy cut-over forest and uninhabited wetlands. The central problem facing the engineers was how to create artificial slope where there was little to no natural slope, or even negative slope, so that gravity drainage could occur with a minimal amount of mechanical pumping required. Very few of the slapdash existing drainage features were re-used, and all those incorporated in the new system were hydraulically re-vamped. The plan was a drainage network flowing to stations where intermediate, low lifts by pumps



Present drainage system (1895)



London Ave., north of Gentilly Rd. (1905)

were sufficient for the water to gravity flow to the next lift station, or to the ultimate outfall. The plan was simple and adaptable.

The City Council adopted the plan in 1895, and the state legislature approved bond issues in 1896, initiating the age of modern drainage in New Orleans. There were six salient elements of the 1895 drainage plan:

- The system allowed for future expansion of the developed area of the city;
- The drainage system was separate from a sanitary sewer system;
- Street drainage collection was planned in the system;
- Intermediate lift pumping stations conveyed drainage to gravity outfalls;
- The more polluted normal precipitation outfall went to Bayou Bienvenue and Lake Borgne;
- The less polluted storm precipitation outfall went to Lake Pontchartrain.

Harrod, as Chief Engineer for the Drainage Commission, wrote the specifications for the power plant, pumping stations, and canals. The basic elements of the system remained in place beyond the historic period, as the system grew greatly in geographic extent and geometrically in pumping capacity.

In 1897, the National Contracting Company won the first contracts to build the central electric power station, Drainage Pumping Stations 1, 2, 3, 6, and 7, and the drainage system canals. L.W. Brown joined the National Contracting Company soon after the signing of the construction contracts for the system. The relationship of Brown and Harrod went sour sometime after 1898. As Drainage Commission Chief Engineer, Harrod allowed the National Contracting Company to substitute cement not originally specified. The cement substitution became a public controversy and subject of a lawsuit. During the controversy, Brown “threw Harrod under the streetcar” in New





*Levee work (1903)*



*Survey crew*

Orleans terms. Harrod resigned as Chief Engineer, but was later fully exonerated. Brown left the National Contracting Company when it changed hands in 1902, and became Engineer for the Orleans Levee Board. One of Brown's wharf designs failed spectacularly, and he got in a nasty fight with the newspapers. He subsequently moved to California where he became a pioneering petroleum engineer and held several patents for petroleum production devices. Brown later stated that W.C. Kirkland, second assistant City Engineer and later with the Sewerage and Water Board, helped him develop the New Orleans drainage plan, omitting reference to Harrod. Harrod was ultimately not tarnished by the cement controversy and enjoyed a distinguished later career.

The New Orleans Sewerage and Water Board, which had been working on the sewerage and water supply systems since 1899, took over the operations of the Drainage Commission in late 1902. The General Superintendent of the Sewerage and Water Board from 1900 to 1931, George G. Earl, brought the drainage plan to fruition and steered its expansion. New Jersey-born Earl worked as a USGS engineer, and in railroad, construction, and sewerage engineering before becoming Chief Engineer for the New Orleans Sewerage Company in 1892 and the Sewerage and Water Board. Alfred F. Theard, a native New Orleanian and former Drainage Commission Engineer, assisted Earl and later became the Sewerage and Water Board's Assistant Engineer for Drainage in 1914. Continuing in that position until 1934, Theard became General Superintendent of the Sewerage and Water Board in 1934.

Mechanical Engineer Alfred Raymond was in charge of the operation and maintenance of the drainage pumping stations in 1899, and continued in that capacity with the Sewerage and Water Board.

By 1914, the New Orleans drainage system covered about thirty-five square miles or 22,400 acres. The system consisted of hundreds of miles of street drainage, about sixty-nine miles of open and closed canals, and seven pumping stations with a combined capacity of 4600 cfs, or over 2.5 billion gallons in twenty-four hours. Between 1900, and 1914, the City of New Orleans spent about \$25.4 million on drainage, sewerage, and water systems. About \$9.3 million (or 37 percent of the total) was for drainage.

The achievements of the drainage system in the fifteen years after construction began were truly remarkable. Not only were developed areas of the city routinely and effectively drained for the first time, but thousands of acres of former swamp (such as Broadmoor, the Ninth Ward, and Lakeview) became available for development. As a result of utility infrastructure improvements, between 1900 and 1914, New Orleans' death rate dropped 25 percent, and assessed property values nearly doubled.

The New Orleans drainage system was not completed, however, in its first fifteen years. In fact, the system has almost always been undergoing expansion, adaptation, and modernization, in fits and starts, and with funding always an issue. The performance of pumps originally installed in the New Orleans drainage stations at the initiation of operations was the Achilles heel of the system. More pumping capacity was necessary for greater system effectiveness.

In 1912, Alfred Raymond's assistant, A. Baldwin Wood, devised a new horizontal centrifugal low-lift drainage pump that was superior to any extant pump in terms of performance, efficiency, and reliability. The first round of Wood pumps installed in New Orleans in 1917 more than doubled system capacity. The Wood pump became the workhorse of the New Orleans drainage system, and hand in hand with network engineering, allowed system capacity to continue expansion along with the developed area of the city. Well into the twentieth century, the drainage capacity of the New Orleans system remained the largest of any urban drainage system in the world.

New Orleans' population grew until 1960, when the out-of-city suburbs outpaced the city in growth, but the developed area within Orleans Parish continued to grow even as population density decreased. As important as the Wood pump was, and remains in the functioning system today, the New Orleans drainage system was first a civil engineering achievement, conceived and initially constructed without the benefit of the Wood pump. With the Wood pump, mechanical engineering caught up with the civil engineering innovation and the skill of Brown, Harrod, Hering, and the other engineers who participated in design and development of New Orleans' drainage system.



The New Orleans drainage system must be considered a success in that it achieved the goals set for it in 1895. Indeed, the New Orleans drainage system was a model for large-scale drainage works elsewhere in the world. By the early-twenty-first century, the Sewerage and Water Board's drainage network included approximately 90 miles of open canals and 90 miles of subsurface canals. Many of the subsurface canals are very large, large enough to drive an 18-wheeler through them. The drainage system's pumping capacity is over 29 billion gallons a day, enough to empty a lake 10 miles square by 13.5 feet deep, every 24 hours. Flow rate is over 45,000 cfs, ten times the capacity of 1914.

Among examples of large-scale environmental modifications, New Orleans now has a singular importance as a long-term case study of the environmental consequences of urban drainage. Besides the elimination of wetlands within Orleans Parish that occurred during the city's growth, unintended consequences of the drainage system include the acceleration of subsidence caused by the removal of groundwater, making the challenges of drainage that much greater. The 1915 hurricane caused storm surge in Lake Pontchartrain to back up in the outfall canals and flood interior portions of the city. Although these areas were less developed than in later decades, the 1915 storm was an omen that tropical storms could defeat the drainage system. It was a harbinger of potential disasters in the future, which became actual disasters in 1965 and 2005. One significant evolution from the basic 1895 Plan occurred only after Hurricane Katrina, when additional pumping stations were placed at the mouths of the original outfalls at Lake Pontchartrain, Metairie Outfall Canal, Orleans Relief Canal, and London Avenue Canal - after more than 100 years of those canals being open to the lake.

Whether the New Orleans drainage system led to development that may or may not be tenable in the future does not affect the significant contribution of the system to the historical development of civil engineering in the United States.

ASCE's Historic Civil Engineering Landmark Program recognizes historically significant local, national, and international civil engineering projects, structures, and sites. The landmark program

increases public appreciation of civil engineering contributions to the progress and development of society, provides civil engineers with an historical awareness of their own profession for both practical insights and pride, encourages the preservation of significant historic civil engineering works, and fosters the inclusion of civil engineering landmark information in encyclopedias, guidebooks and maps.

Thanks to the work of the History and Heritage Committee, Louisiana already has five ASCE Civil Engineering Landmarks: Eads South Pass Navigation Works, Huey P. Long Bridge, Lake Pontchartrain Causeway Bridge, McNeil Street Pumping Station, and Bonnet Carré Spillway. An ASCE Landmark nomination for the New Orleans Drainage system is now underway by the History and Heritage Committee.

In the committee's opinion, the New Orleans drainage system meets all of the criteria of an ASCE Engineering Landmark:

- The nominated project must be of national historic civil engineering significance.
- The project must represent a significant facet of civil engineering history.
- Projects must have some uniqueness (e.g. a first project constructed), or have made some significant contribution (e.g. the first project designed by a particular method), or used a unique or significant construction or engineering technique. The project itself must have contributed to the development of the nation or at least a very large region.
- Projects should be generally available for public viewing.
- Nominated projects should be at least 50 years old from the substantial completion at the time the ASCE plaque is presented.

The New Orleans Branch will submit its application to the national History and Heritage Committee in Spring 2018.

## ASCE Region 5 - New Director

Peter M. Moore, PE, ENV SP, F. ASCE is the 2017-2020 Region 5 Director for ASCE. Hailing from Florida, he received his BSCE and ME degrees in Civil Engineering from the University of Florida. He has held various positions in ASCE, including Past Branch and Section President, Part Chair of the Committee on Younger Members and was a Region 5 Governor from 2013-2016. He is currently the President and CEO of Chen Moore and Associates, a multi-disciplinary consulting firm with five offices in Florida.

### CHEN MOORE AND ASSOCIATES

Peter M. Moore, P.E., F. ASCE  
Office Direct (954) 947-1758  
Mobile +1 (954) 818-9552



*Peter M. Moore, PE, ENV SP, F. ASCE*

## 2017 ASCE Convention Highlights

The 2017 ASCE Convention was held on October 8-11, 2017 in downtown New Orleans. The conference had close to 1000 participants from all over the world. Tonja Koob, PhD, PE, New Orleans branch, Rudolph Simoneaux, PE, Baton Rouge branch, Karishma Desai, PE, New Orleans branch, and Malay Ghose Hajra, PhD, PE were some of the ASCE Louisiana section leaders, who attended the conference. Norma Jean Mattei, PhD, PE, from the New Orleans branch and who is the current ASCE President also attended the conference. Several other ASCE members from the New Orleans branch volunteered during the different technical sessions. A local planning sub-committee representing the ASCE New Orleans chapter: Angela DeSoto Duncan, William E. Rushing, Norma Jean Mattei, Meg Adams, Ben Cody, Om Dixit, Joel Dorsa, Tonja Koob-Marking, and Malay Ghose Hajra helped the convention planning committee with speakers, technical tour planning, student activities, and community service project planning. The ASCE Louisiana section contributed \$2000 towards the convention sponsorship.

The theme of the conference was Engineering>Innovating>Leading. The conference presented many opportunities for technical tours, community service projects, technical presentations, leader's luncheon, student and emerging leader's breakfast, and short courses. However, due to Tropical storm Nate, the technical tours and community service project had to be canceled at the last moment. The ASCE student chapter from the University of New Orleans showcased their concrete canoe and steel bridge at the convention. It was a great networking opportunity for the students as they communicated with industry leaders and students from other chapters.

The sessions of the conference offered valuable lessons learned in the industry and profession. The participants were educated on

how New Orleans used the opportunity of rebuilding to strengthen social justice and community life. The attendees also heard first-hand accounts from experts on natural disaster response and recovery. The participants were able to secure up to 20 Professional Development Hours (PDHs). The convention presentation and discussion topics included (i) history and heritage, (ii) natural and man-made disasters, (iii) professional development, (iv) significant projects, (v) strategic issues/ public policy, (vi) state of the industry/ profession, and (vi) multidisciplinary technical topics.

The conference also offered great non-technical sessions and forums with distinguished speakers. Several networking opportunities were available during the conference. For the opening session, Marci Rossell, PhD, of The Economist, collaborated the fact that America's infrastructure needs have never been greater, yet investment has been disappointing in the post-Financial Crisis environment. The current interplay between politics and productivity has brought the issue to a stalemate. Dr. Rossell considers the road forward will be in private and public investment in the U.S. economy. Several ASCE Louisiana section members also presented during the technical sessions.

The conference also featured the National ASCE Annual Business Meeting with the induction ceremony of our 2017-18 Board of Directors. Our very own, Norma Jean Mattei, PhD, PE was sworn in as Past President. The closing session featured inspirational business speaker, Kaplan Mobray, Leadership Coach and Motivation Expert; Acclaimed Author, "The 10Ks of Personal Branding" at Kaplan Mobray Inc., discussed the steps someone can take to give themselves a brand makeover and career boost.

The 2018 ASCE convention will be held in Denver, Colorado on October 12-15, 2018.



# 2017 ASCE Louisiana Section Awards and Officers Installation Luncheon

The 2017 Louisiana Section Awards and Officers Installation Luncheon was held on September 22, 2017, at the Metairie Country Club, Metairie, Louisiana and was hosted by the New Orleans Branch. New Orleans Branch Past President Tonja Koob Marking, PhD, PE, called the meeting to order, gave the invocation, and welcomed everyone to the luncheon. Section President Matthew Redmon, PE made the opening remarks and introduced National President Norma Jean Mattei, PhD, PE. Dr. Mattei gave a brief presentation on her national and international travels with ASCE and promoted the Dream Big ASCE movie.

Continuing the presentations, Louisiana Section Awards Committee Chair Brant Richard, PE opened the awards ceremony. Brant Richard Awards.jpg The ASCE Louisiana Section Awards were instituted to recognize the outstanding contributions of Louisiana civil engineers for service to their profession and ASCE. He thanked the branches for nominating an outstanding slate of candidates for consideration for each award. The quality of the nominees for the various awards made the awards committee's task to determine this year's award recipients very difficult. Brant also thanked the awards committee for their efforts in reviewing the numerous nominations and assisting in selecting this year's recipients.

#### **This year's Section Award recipients were:**

**Kirk Lowery, PE** – Outstanding Civil Engineer

**Janet Evans, PE** – Outreach Award

**Deborah Ducote Keller PE** – Lifetime Achievement Award

**Kenneth Perret, PE** – Wall of Fame

**Kam Movassaghi, PhD, PE** – Wall of Fame

**Kyle Galloway, PE** – Outstanding Young Civil Engineer

After Brant presented the Section Awards, Section President Matthew Redmon, PE announced the final award of the ceremony, the President's Medal, to **Janet Evans, PE**. This award was given to Janet because of her hard work on the 2017 Infrastructure Report Card.

ASCE National President Norma Jean Mattei installed the incoming Section Officers and Board of Directors for the Louisiana Section for the 2017-2018 administrative year.

#### **The 2017-2018 Section Officers are:**

President – Malay Ghose Hajra, PhD, PE

President-Elect – Rudolph Simoneaux, PE

Vice-President – Beau Tate, PE

Secretary-Treasurer – Joe. E. "Butch" Ford, Jr.

Past President – Matthew D. Redmon, PE

The Board of Directors are:

#### **Directors-at-Large**

Kirk Lowery, PE

Deborah D. Keller, PE

#### **Branch Directors**

Jared Veazey, MS, PE, Acadiana

Blake Roussel, PE, Baton Rouge

Karishma Desai, PE, New Orleans

Tim Wright, EI, Shreveport

#### **Assigned Branch Directors**

Tonja Koob, PhD, PE

Brant Richard, PE

Tyler Roy, PE

David Smith, PE

The meeting concluded with outgoing President Redmon and incoming President Ghose Hajra exchanging the President's Plaque and Past-President pin. Incoming President Ghose Hajra closed the luncheon by presenting his goals for his upcoming presidency, and thanked everyone for attending.







ASCE National President Norma Jean Mattei, PhD, PE installs 2017-18 Section Board (left to right): Matthew Redmon, Malay Ghose Hajra, Rudolph Simoneaux, Beau Tate, Butch Ford, Tonja Koob, Kirk Lowery, Deborah Keller, Brant Richard, Jared Veazey, Blake Roussel, Karishma Desai, and Tim Wright

## 2017-2018 ASCE Louisiana Section Officers



**Malay Ghose Hajra, PhD, PE**  
*President*



**Rudolph Simoneaux, PE**  
*President-Elect*



**Beau Tate, PE**  
*Vice-President*



**Joe E. "Butch" Ford, Jr.**  
*Secretary-Treasurer*



**Matthew D. Redmon, PE**  
*Past President*

## 2017 Louisiana Section Awards



**Kirk Lowery, PE**  
*Outstanding Civil Engineer*



**Janet Evans, PE**  
*Outreach Award*



**Deborah Ducote Keller PE**  
*Lifetime Achievement Award*



**Kenneth Perret, PE**  
*Wall of Fame*



**Kam Movassaghi, PhD, PE**  
*Wall of Fame*

## 2017-2018 ASCE Louisiana Section Board of Directors



**Kirk Lowery, PE**  
*Director-at-Large*



**Deborah D. Keller, PE**  
*Director-at-Large*



**Jared Veazey, MS, PE**  
*Acadiana Branch Director*



**Blake Roussel, PE**  
*Baton Rouge Branch Director*



**Karishma Desai, PE**  
*New Orleans Branch Director*



**Tim Wright, EI**  
*Shreveport Branch Director*



**Tonja Koob, PhD, PE**  
*Assigned Branch Director*



**Brant Richard, PE**  
*Assigned Branch Director*



**Tyler Roy, PE**  
*Assigned Branch Director*



**David Smith, PE**  
*Assigned Branch Director*

### 2017-2018 ASCE Louisiana Section Leadership



*New Board with Directors (Left to right top): Kirk Lowery, Butch Ford, Brant Richard, Matthew Redmon, Beau Tate, Malay Ghose Hajra, Rudy Simoneaux, Blake Roussel, Tim Wright, and Jared Veazey (Left to right bottom): Tonja Koob, Karishma Desai, and Deborah Keller (not pictured: Tyler Roy and David Smith)*



# ASCE-COPRI Louisiana Chapter News

By Venu Tammineni, 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 (LCOPRI) is continuing to promote membership and visibility throughout the State of Louisiana.

## Board Members

**Chair** – Paul Tschirky, PE (Arcadis)

**Vice-Chair** – Dennis Lambert, PE

**Secretary** – Tyler Ortego, PE  
(ORA Estuaries)

**Treasurer** – Erin Rooney, PE  
(HDR Engineering, Inc.)

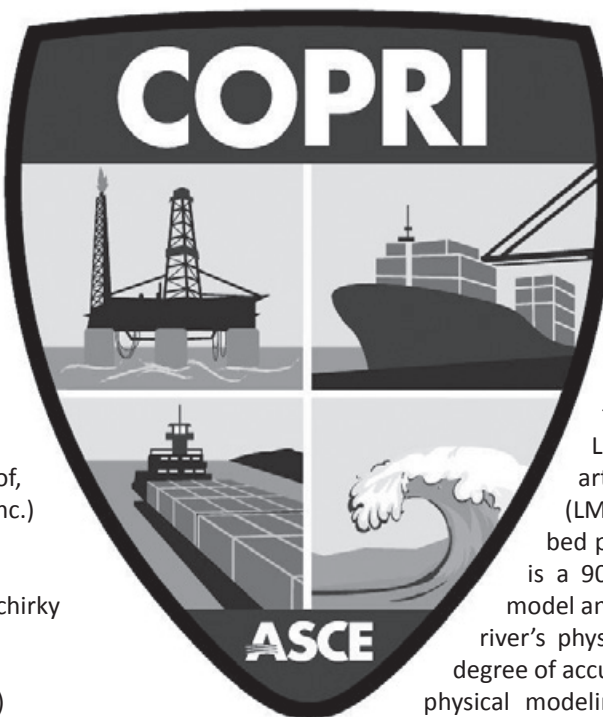
**Director of Programs** – Andrew Woodroof,  
PE (Digital Engineering and Imaging, Inc.)

**Director of Communications** –  
Venu Tammineni, PE (S&ME, Inc.)

**Director of Education** – Ashly Adams-Tschirky

**YPG Chair** – Myriam Bou-Mekhayel, PE  
(Stuart Consulting Group, Inc.)

**Past-Chair** – Rudy Simoneaux, PE (CPRA)



## Academic and Practitioner Advisory Committee:

Ehab Meselhe, PhD, PE

(The Water Institute of the Gulf)

Nancy Powell, PE, D.WRE

(USACE New Orleans)

Clint Willson, PhD, PE (LSU)

## Tour of the Center for River Studies at the Water Campus in Baton Rouge, LA

On August 11, 2017, LCOPRI hosted a tour of Center for River Studies (CRS) at the Water Campus in Baton Rouge, Louisiana. The CRS houses a state-of-the-art Lower Mississippi River Physical Model (LMRPM) which is one of the largest moving bed physical models in the world. The LMRPM is a 90 feet x 120 feet movable bed physical model and is based on the exact parameters of the river's physical and kinetic properties, producing a degree of accuracy never before achieved in lower-river physical modeling. The model is not only a tool for



Rudolph Simoneaux, III, PE Presenting on CRS Functions



Rudolph Simoneaux, III, PE Explaining to visitors about the LMRPM



Visitors Viewing the LMRPM



Clint Willson, PhD, PE in the Interactive Exhibit Area with the Visitors



research, but also for education as coastal stakeholders and visitors can explore the model through interactive displays. Rudolph Simoneaux, III, PE Manager, Engineering Division, Coastal Protection and Restoration Authority (CPRA) and Clinton Willson, PhD, PE, Professor in Civil & Environmental Engineering and director of the center, Louisiana State University, gave a presentation on the functions of the CRS after which a tour of the building was provided. The event was well attended.



*Clint Willson, PhD, PE Presenting on the Technical Aspects of LMRPM & Paul Tschirky, PhD, PE Providing an Update on the Program*



*Rudolph Simoneaux, III, PE Explaining about the State-of-the-Art Computer Numerical Controlled (CNC) Router*

Model panels used for the LMRPM were routed using a highly accurate Computer Numerical Controlled (CNC) Router. Model is configured of 216 --5 feet x 10 feet x 1 feet high density foam panels, weighing in at 700-900 pounds each. The panels sit on individual adjustable steel frames. 20 high resolution digital projectors are mounted above to model and merge aerial photographs, project features, diversion outputs, and other simulations/animations. The facility will be owned and operated by Louisiana State University.

#### **Annual Lake Pontchartrain Basin Foundation Fall Beach Sweep**

On September 16, 2017, the LCOPRI Young Professional Group (YPG) members participated in the Annual Lake Pontchartrain Basin Foundation (LPBF) Fall Beach Sweep. This event took place in the areas surrounding Lake Pontchartrain and was a great opportunity

for volunteers, partners, and sponsors to help care for the areas that drain the Pontchartrain Basin by cleaning curbs, ditches, and storm drains on city streets and rural roadways. LCOPRI YPG had a good turnout and was designated with picking up trash along the levee, between Canal Blvd. and Orleans Avenue Canal. The group picked up 4 large bags totaling 17 lbs of trash. This was a great event for the YPG members and we hope to participate in future events with the LPBF.



*Left to Right: Myriam Bou-Mekhayel, Elizabeth Loniello, Jenni Schindler, and Justin Quarles*

#### **Upcoming LCOPRI events:**

- **2017 Student Scholarship:** LCOPRI 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.

#### **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 Venu Tammineni, at [LCOPRI@yahoo.com](mailto:LCOPRI@yahoo.com).

# Capitol View: from Haynie and Associates

By Ryan K. Haynie, Vice-President

The Louisiana Legislature may be home for the fall and holiday season but regrettably; few will be cheerful upon their return to Baton Rouge. Predictably, the 2018 fiscal cliff is coming and the state lawmakers will have to find a way to close a \$1.5 billion shortfall before June 30th 2018. During the 2017 Fiscal Session that ended in June, Governor Edwards and the legislature unsuccessfully explored and debated new forms of revenues to replace the temporary extra penny of sales tax, with little success, forcing a special session early next year.

Currently Governor John Bel Edwards (D) and House Speaker Taylor Barras (R) are traveling Louisiana for meetings with community business leaders and state legislators to find a consensus solution before calling for a Legislative Special Session in early 2018. A bipartisan group of legislators has been meeting and attending retreats to try to forge a compromise.

One possible solution is the continuation of the fifth penny of sales tax (or part of the penny) either on short-term bases or permanently. Many legislators of both parties are not satisfied with this solution, which would leave Louisiana with the highest sales tax in the nation. Legislators are working to find a more reform-minded approach such as expanding the tax base, reducing exemptions, credits and incentives; and reducing the current itemized and federal deductions. The prediction of legislative leaders are that if enough legislators can agree to a solution by February of 2018 a special session will be called following Louisiana Mardi Gras and prior to the **Legislative Regular Session, which runs March 12 – June 4, 2018**. If no new revenues are found prior to March 12, because the regular session cannot deal with fiscal matters, an emergency special session would have to be called the last three weeks in June with a short window to find a solution before the fiscal cliff.

It is no secret that Louisiana's transportation issues have taken a back seat to the Louisiana budget. While the Transportation, Highways and Public Works Committee tours the state, the public and business outcry for transportation improvement is loud and clear. More dollars are needed for infrastructure but the timing and politics simply do not appear to be there to pass a gas tax either through the legislature or by public vote. It is our prediction that

after the budget is stabilized, the state legislators will be able to focus more of their attention on transportation funding.

On October 14th, Louisiana citizens took to the polls and voted to amend the 1974 Louisiana State Constitution with Constitutional Amendment 3. Amendment 3 protects funding for transportation construction projects and creates a restriction on the way any future gasoline and fuel taxes can be used. Funds will only be available to pay for transportation construction projects. Passing of

Amendment 3 could spur renewed efforts and increase confidences to raise new gasoline or fuel tax in 2018 or 2019. Constitutional Amendment 1 also passed, a great win for business and industrial growth, ensuring continued property tax exemption for projects under construction. Other significant Primary Election results is the run-off for New Orleans Mayor between LaToya Contrell and Desiree Charbonnet, both Democrats and the run-off for Louisiana State Treasurer between State Representative John Schroder (R) and Derrick Edwards (D). We encourage you to vote in the Statewide General election on November 18th.

Furthermore, the fiscal year 2017-2018 DOTD Capital Outlay/Non-State Statutory Dedications Recommended funding for State Highway Improvement is \$58,000,000. This recommendation estimates project expenditures

based upon projected available revenue sources. The administration is being very cautious to bond out additional dollars until the fiscal cliff shortfall is addressed.

As always we suggest you take this time when legislators are not in session to reach out to them, simply offer them a cup of coffee or a sandwich, get to know them and let them know what you do and discuss the ASCE mission. It is always best to form relationships in good times that way if we need you to call on them during a session the relationship is already built. The 2018 regular session will allow unlimited general subject matter bills, and as always, we will keep you advised on any legislation that may affect the engineering profession.

Ryan K. Haynie, Vice-President; email: [ryan@haynie.com](mailto:ryan@haynie.com); phone: (225) 336-4143



# ASCE-T&DI Louisiana Chapter News

By Michael Paul, PE - Newsletter Editor



## Election of New Officers

October 2017 marked the eighth full year of operation for the ASCE-T&DI Louisiana Chapter. The Chapter would like to acknowledge the contributions of our 2016-2017 officers. For the 2017-2018 fiscal year, Bill Temple, PE who has been serving as Vice Chair has assumed the Chair position; Jim Simmons, PE will serve as Treasurer; and Mike Paul, PE will serve as Newsletter Editor.

## Louisiana T&DI Scholarship Program

One of the long-term goals of the T&DI Louisiana chapter was to start and sustain a scholarship program. That goal was achieved during 2012 fiscal year with the formation of a scholarship subcommittee. For the sixth year in a row T&DI plans to award two \$500 scholarships; the funding is provided by using a portion of our seminar proceeds. The first announcement has already been issued to various university civil engineering department heads across the state. Applications will be reviewed by the Executive Committee and awardees will be announced in the next Newsletter issue.

## Public Private Partnerships (P3) and Innovative Funding Strategies for Transportation Seminar

In October the T&DI Louisiana Chapter hosted the Public Private Partnerships and Innovative Funding Strategies for Transportation seminar which was presented at the LSU TTEC auditorium in Baton Rouge. The seminar was coordinated by T&DI Executive Committee Members Bill Temple and Dennis Lambert.

The seminar presented an overview of funding opportunities and challenges in Louisiana including the public private partnerships and other innovative means of increasing revenue. The public private partnership approach reflects recent interest in public private partnerships by discussing innovative procurement, design-build strategies, concession agreements, and other ideas. Two speakers were selected to shed light on these topics. The first speaker was Shawn Wilson, PhD Secretary LA DOTD. The second speaker was and Cheryl Duvielh, Executive Counsel LA DOTD.

## Louisiana Civil Engineering Conference and Show

The T&DI Chapter also contributed to the ASCE Fall Louisiana Civil Engineering Conference and Show (LCEC&S) in Kenner, Louisiana.



Om Dixit, PE and Ronnie Schumann, PE served as planning committee members where Om headed the Program and Speaker Subcommittee and Ronnie served as the T&DI liaison who arranged finding the transportation presentations.

## 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 Bill Temple, PE, at [btemple@caal.org](mailto:btemple@caal.org) 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, the Chapter is planning the following future seminars:

- Ethics
- Historic Louisiana Bridges
- Mitigation Banking
- Green Infrastructure: Integrating Infrastructure Needs
- New Orleans Armstrong Airport
- Bridge Approach Slabs
- Highway Safety Seminar - to be hosted in North Louisiana



## Branch News

### ACADIANA BRANCH

*By Jared Veazey, PE, Branch President*

The Acadiana Branch had a very successful 2016-2017 year with the 2017 ASCE Annual Conference and look forward to continuing that success into the new year. As I take over the president duties for the 2017-2018 year, I would like to thank Past President Sasan Daneshvar, PE for his three years of service to the Acadiana Branch.

Our September Luncheon held on September 27th offered a presentation on Forensic Engineering presented by Mr. Sonny Launey, PE with Denson Engineers, Inc. and hosted the induction of the 2017-2018 Acadiana Branch Officers. The newly inducted officers for the 2017-2018 year are as follows:

Past President – Sasan Daneshvar, PE  
President – Jared Veazey, PE, MS  
President Elect – Will Cenac, PE  
Secretary – Jacob Neu, EI  
Treasurer – Jessica Caldarera, PE

The branch would like to congratulate the newly inducted officers and thank these officers for volunteering their time to serve the civil engineering community.

The month of October held two events for the Acadiana Branch. The first was a special evening event with a presentation on Non-Destructive Testing presented by Alfred Gardiner held at Walk Ons on October 19th. The second was the October Luncheon with a presentation on Costal Engineering presented by Ehab Messelhe, PE, PhD, held on October 25th. Both events were well attended.



The Acadiana Branch helps to support both University of Louisiana at Lafayette (ULL) and McNeese student chapters. The Acadiana Branch has donated funding to cover two students from each university to attend the 2017 National ASCE Convention being held in New Orleans. Also, we awarded four scholarships to the two universities at the joint evening meeting with ULL Student Chapter on November 15th held on the ULL campus.

Looking forward the Acadiana Branch will be hosting a Christmas Social on December 13th at ABACUS in Lafayette, LA. We will continue to host technical luncheons on varying Civil Engineering topics.



*Jared Veazey, PE, MS with Sasan Daneshvar, PE*



*Left to right: Jared Veazey, PE, MS, Will Cenac, PE, Jacob Neu, EI, Jessica Caldarera, PE, and Sasan Daneshvar, PE*

## BATON ROUGE BRANCH

*By Blake Roussel, PE, Branch President*

The Baton Rouge Branch had a fantastic start to the Fall of 2017. We began with our August luncheon which we annually host jointly with the Baton Rouge Chapter of LES. Congressman Garret Graves addressed the group of roughly 120 attendees at Juban's restaurant with his "Congressional Update".

September brought our 2017-2018 officer installation and awards luncheon. We also had a speaker from Tensar present about their suite of soil remediation products.

The new Baton Rouge Branch Board consists of:

President – Blake Roussel  
President-Elect – Sarah Ollenburger  
Vice-President – Jarret Bauer  
Secretary – Thomas Montz  
Treasurer – Ben McArdle  
Past President – Kahli Cohran

We also installed three Directors:

Director of Programs – Molly Bourgoyne  
Membership Director – Tyler Branch  
Education Director – Venu Tammineni.

We rounded out our dedicated board with the additions of Younger Member Chair Sergio Aviles, LSU Practitioner Advisor Alicia Sellers, and our Southern University Practitioner Advisor Nedra Hains. Also during the month of September, several board members attended the LSU student chapter meeting and gave a brief presentation on how the branch can assist them with the beginning of their careers.

## SHREVEPORT BRANCH

*By Tim Wright, EI, Branch President*

As a new fiscal year begins, I'm excited to be installed as the president of the Shreveport Branch of ASCE. My goals for the year are to improve North Louisiana through engineering excellence, continue to foster ASCE Shreveport's relationship of Louisiana Tech University, and shape our communities by contributing in unique ways. It will be a challenge to top the year that Jared Boogaerts presented during 2016-2017.

Our October meeting featured Don Olson, retired from Hunt Guillot and Associates. Don is on the board of the local Chamber of Commerce and spoke to us about how business organizations like the local chamber can provide networking opportunities, further the profession, and grow in service to the community. He also outlined his work career and how he made his way back to the Shreveport area after a brief absence.

October also marked the chance to head to Ruston, Louisiana to reconnect with Tech students and welcome the incoming class of

Congratulations to our 2017 award winners for their outstanding accomplishments. Our award winners were "Outstanding Young Civil Engineer Award" – Molly Bourgoyne, "Outstanding Civil Engineer" – Kirk Lowery, "Outstanding Civil Engineering Educator" – Dr. Aly-Mousaad Aly, "Outreach Award" – Janet Evans, "Lifetime Achievement" – Jim Aronstein, and "Wall of Fame" – Ken Perret. This esteemed group of engineers were recognized for their accomplishments to this point in their careers and also for their service to the Branch.

Our October luncheon consisted of a site visit to the LSU Center for River Studies on The Water Campus to check out the new Expanded Small Scale Mississippi River Model. We began the luncheon with a presentation given by Baton Rouge Branch Past President Rudy Simoneaux at the new CPRA building also on The Water Campus. Attendance was exceptional for a site visit with approximately 50 members joining us for the presentation and tour. Thank you, Rudy, for hosting us!

In partnership with the Louisiana Arts & Sciences Museum, the branch hosted its final session of 2017 for the Engineer It program on October 21. This program continues to gain popularity with the local community. New modules included a cable stayed bridge activity and a windy tower activity. The Dream Big movie was on display as well. A huge thank you goes out to the Engineer It volunteers! You all are truly spreading the STEM vision to the children of the community.

freshmen. Mitch Guy, chair of the Louisiana Tech Practitioner Student Advisory Board, presented about the civil engineering profession, and his firm Civil Design Group sponsored dinner for Bulldog students. It's events like this that foster our relationship with our local university. Our sponsorships go directly to these students that we connect with.

Finally, during September, we had a chance to bring attention to a National Historic Engineering Landmark, The McNeil Street Pumping Station. This is a landmark that has stood since the 1800's and was the first facility used to provide clean water to Shreveport. Due to Louisiana's recent budget crisis, the museum lost most of their funding used to upkeep and run the museum, and fundraising has been taken over by a nonprofit group. We had the chance to clean the museum and bring attention to group's preserving this important landmark. If you would like to learn more and donate to keep the museum running, you can visit [shreveportwaterworks.org](http://shreveportwaterworks.org).

## NEW ORLEANS BRANCH

*By Karishma Desai, PE, Branch President*

As the New Orleans Branch President for the 2017-2018 term, my first order of business was a fun one: hosting the Louisiana Section awards luncheon. It was an honor and privilege to be surrounded by talented fellow engineers as Malay Ghose Hajra, PhD, PE, ENV SP, of New Orleans was inducted as the 2017-2018 Louisiana Section President. The event was hosted by the New Orleans Branch Board on 22 September 2017 at beautiful Metairie Country Club. Norma Jean Mattei, PhD, PE, the 2016-2017 National ASCE President and a New Orleans native, performed the installation ceremony. It was attended by more than 50 members, award recipients and their spouses. Our very own Kyle Galloway, PE, (Director-at-Large, ASCE New Orleans Branch) was awarded the Outstanding Young Civil Engineer, and Deborah Keller, PE, received the Lifetime Achievement Award. As the New Orleans Branch President, I was one of 13 officers installed on the Section board. The branch President-Elect, Robert Delaune; Dean Nicoladis, Vice President; Andrew Woodroof, Branch Secretary; and Past-President Tonja Koob Marking also attended the luncheon.

The ASCE New Orleans Branch partners annually with the Louisiana Civil Engineering Conference & Show (LCECS), held on 26 and 27 September 2017 at the Ponchartrain Center in Kenner. ASCE hosted a booth at the well-attended conference, which sold out booths and added a live-blogging element to its technical program this year.

The ASCE New Orleans Branch also helped organize the ASCE National Conference as Dr. Mattei passed on the gavel to Kristina Swallow, PE of Las Vegas, Nevada. New Orleans Branch past presidents Tonja Koob Marking (Technical Tours), Malay Ghose Hajra (Student Liaison), Meg Adams (Community Service Project), Ben Cody (Local Volunteer Coordinator), Angela DeSoto (Chair), and Bill Rushing (Vice Chair) have been part of the organizing committee since day one. Myriam Bou Mekhayel, Branch Treasurer, Andrew Woodroof and I will help with event registration, meal functions, local infrastructure tours, social media and other duties. The National Convention was held from 8 to 11 October at the New Orleans Marriott.



*Deborah Keller with her husband, Brian Keller*



*Top, from left: Tonja Koob Marking and Karishma Desai, Bottom, from left: Robert Delaune, Jr.; Andrew Woodroof; and Dean Nicoladis*



*Karishma Desai, PE at the registration table*



# LOUISIANA CIVIL ENGINEERING CONFERENCE & SHOW

SEPTEMBER 27 & 28, 2017

## RECORD BREAKING ATTENDANCE!

The 2017 Louisiana Civil Engineering Conference & Show (LCECS) was held at the Pontchartrain Center in Kenner, LA and attracted over 700 attendees!



### LCECS HOST COMMITTEE

The host committee is made up of volunteers from both the Louisiana Chapter of the American Concrete Institute (ACI) and the New Orleans Branch of the American Society of Civil Engineers (ASCE).

*Gerry Preau, Andrew Woodroof, Jay Jani, Rhett Mouton, Kabir Mohammed, Jackie Sempel, Ronald Schuman, Om Dixit, Matthew Thomas, Mary Kincaid, Rebecca Chopin, Yelena Rivera (Chairman) and Gavin Gillen (Treasurer). Missing in Action: Ben Cody & Meg Adams*

## STUDENT PAPER BRIDGE COMPETITION

New to this year's program was the inaugural Student Paper Bridge Competition. Students from local universities were invited to participate in this fun new activity. We had a great turn out from University of New Orleans!



*Pictured Left to Right: Rebecca Chopin – Student Paper Bridge Competition Coordinator, Courtney Mai; Vy Vu - 3rd Place Structure Winner; Christian McClung - 1st Place Aesthetics Winner; Donald Gilardoni - 3rd place Aesthetics Winner; Madeline Cefolia - 1st Place Structure Winner; Arielle Authement - 2nd Place Structure Winner*

Attendees watched with anticipation and excitement during the paper bridge strength tests. Each 12" span bridge was loaded to failure with 1lb and 0.5lb sand bag increments - the maximum load attained was 12.5 lbs.

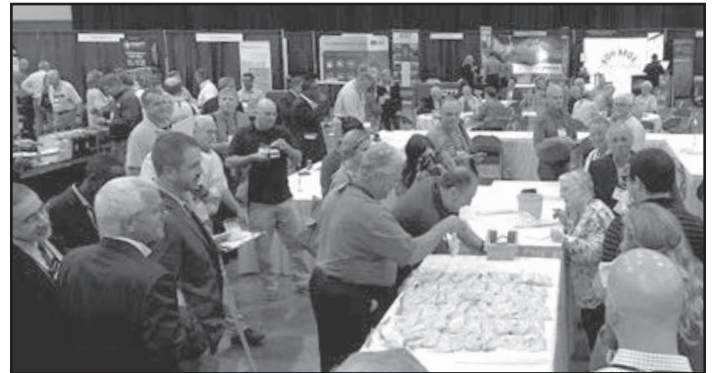
Many thanks to Darrell Elliot Memorial Speaker Luke Snell and his wife Billie Snell for their assistance with the Paper Bridge competition.

**ASCE**



**Keynote Speaker: N.J. Mattei, PHD, PE**

LCECS welcomed ASCE Global President Norma Jean Mattei, PhD, PE, as 2017 keynote speaker. Dr. Mattei spoke on "Engineering the Dream", ASCE's strategic initiative for modernizing U.S. infrastructure. Dr. Mattei is professor and past chair at the University of New Orleans Department of Civil and Environmental Engineering. In 2012, President Obama named Mattei one of three civilian members of the Mississippi River Commission. Dr. Mattei earned a bachelor's degree in civil engineering in 1982 and a doctorate in 1994, both from Tulane University.



For more information, please visit our website: [www.lcecs.org](http://www.lcecs.org)



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# ASCE-SEI New Orleans Chapter News

By Om Dixit, PE, FASCE, F-SEI



For past 2 months most of the civil engineering and concrete organizations of New Orleans were busy with the preparations for the 2017 Louisiana Civil Engineering Conference and Show (LCECS). SEI NO was busy with the structural presentation sessions.

ASCE SEI New Orleans Chapter arranged a few structural presentations for 2017 Louisiana Civil Engineering Conference and Show (2017 LCECS). 2017 Herbert J. Roussel Jr. Lecture was given by Raymond (Ray) Messer, PE, and Chairman Emeritus, Walter P. Moore and Associates, Houston, TX. The title for the lecture was, "Structural Engineers and Design Build - Do not be Afraid". In Addition, the 2017 Herbert J. Roussel Jr. Lecture, SEI NO has provided speakers for 2017 LCECS on structural topics such as "Design and Construction of the Tallest Building West of the Mississippi"; "The New Structural Engineer's Toolbox: 360 Cameras, Drones, Scanners and 3D PDFs"; "Cathodic Protection of Infrastructure"; "High Strength Reinforcement in ACI 318: Changing the Grade"; and, "Lessons Learned in 30 Years of Timber Pile Repairs".

In November 2017 we had a presentation: "Platform Installation Utilizing Float-Over Methods" by Jim Li (President, Offshore Tech LLC). SEI NO has planned the following Seminars in coming year: on January 18, 2018 "Economical Concrete Bldg. Design" by Rolfe



Jennings, PE from Dallas, TX; and on April 3, 2018 "Strength Design of Masonry" by Richard Bennett, PhD, PE, from the University of Tennessee, Knoxville, TN. There are several other seminars topics are in progress of being scheduled. For more details visit SEI NO Chapter on [www.asceneworleans.org/events/](http://www.asceneworleans.org/events/).

On October 1, 2017 SEI NO newly elected new Chairman of its Executive Committee, Kabir Mohammed, PE from EDG for the term of 2017-18. Chairman Kabir Mohammed, will appoint the Vice Chairman later. James Danner, PE from Denson Engineers continues to serve as Treasurer and Om Dixit, PE continues to serve as Newsletter Editor. Past Chairman Mark Castay, PE did great job guiding the Chapter and completed his one year term on September 30, 2017. During the past year the ASCE SEI NO Chapter hosted 4 two hours seminars. Among other activities the chapter sponsored awards at the Regional Science Fair. The Chapter also sponsored New Orleans Regional Math Count Competition hosted by Louisiana Engineering Society every year.

Recently SEI NO added one member to their Executive Committee, Hermann A. Alb, PE from Woodward Design+Build who will bring new thoughts and knowledge to our activities.

The committee is looking for good topics and speakers for future presentations. Members with expertise in the field of structural engineering are welcome to join the Executive Committee. For any suggestion and information on joining the Executive Committee, contact Chairman Kabir Mohammed, PE at [kmohammed@edg.net](mailto:kmohammed@edg.net). If you would like to add your name to our mailing list, please visit ASCE New Orleans Branch website at [www.asceneworleans.org](http://www.asceneworleans.org).



On September 27, 2017 – SEI NO Chairman, Kabir Mohammed, PE (on left) and Herbert J Roussel, Jr. Lecture presenter Raymond (Ray) Messer, PE (Chairman Emeritus, Walter P. Moore) at 2017 Louisiana Civil Engineering Conference and Show in Kenner, LA

# Student Chapter News

## LOUISIANA STATE UNIVERSITY

*By Alicia R. Sellers, EI*

As of October, ASCE at LSU has held 4 meetings during the 2017 Fall semester. Guest speakers from the ASCE Baton Rouge Local Chapter, SIGMA Consulting Group, and Clear World have come to provide insight on career opportunities, workplace expectations, and innovation with respect to the Civil Engineering arena. We are putting additional effort into securing a variety of speakers to represent all focuses of Civil Engineering to give our members access to as much information as possible. In addition, we are excited to welcome the future leaders of LSU's chapter of ASCE that were elected during our most recent general body meeting of October 3, 2017. The elections were held early in the semester with the hopes of providing sufficient time to pass along advice and mentorship to those replacing current officers. These officer-elects will spend the rest of the semester learning about their duties and responsibilities so they can have a strong start for their official terms in the Spring.

Our Steel Bridge and Concrete Canoe teams are already planning and preparing for the ASCE Deep South Competition in March. With lessons learned during last year's competition in mind, the Steel Bridge team is finalizing their design and preparing to move forward

with the fabrication process, while the Concrete Canoe team is beginning to recruit members and has begun to organize rowing practices. Both teams offer unique and valuable experiences that provide an understanding of leadership, organization, and project management that are hard to obtain elsewhere. The members of these self-motivated teams are extremely proud of the work that they put in before the competition each year, and we are all anticipating a very competitive representation of our chapter of ASCE and the Civil Engineering Department at LSU.

Planning for the third ASCE at LSU career fair is currently underway, and it is predicted that the outcome will be as successful as the past two career fairs. Building connections and hearing from professionals in the engineering fields are extremely beneficial for young prospective engineers, and the ASCE career fair is the best way for Civil Engineering students and employers to connect. Of course, we also always welcome speakers for future meetings in addition to this opportunity. If you or your company are interested in sharing your experience at one of our meetings or participating in our upcoming career fair, please contact: [asce@lsu.edu](mailto:asce@lsu.edu) or visit [www.lsuasce.weebly.com](http://www.lsuasce.weebly.com). As always, we would love to hear from you!

## UNIVERSITY OF LOUISIANA AT LAFAYETTE

*By Avery Brooks, Student Chapter President*

The University of Louisiana at Lafayette Student Chapter of the American Society of Civil Engineers have been enthusiastically working on the planning and preparation of an eventful 2017-2018 academic year. Most notably, being tasked with the responsibility of hosting the 2018 ASCE Deep South Conference in which ASCE Student Chapters from all across the southern region will converge upon our University in hopes of earning the right to compete at the ASCE National Competition. Our Deep South competition will, as always, consist of the concrete canoe, steel bridge, and land surveying contests along with a number of auxiliary events including a mystery design competition and a mead paper presentation. The Deep South Conference will then conclude with a banquet at which the results and awards for all of the weekend's contests will be presented. We here at the UL-ASCE Student Chapter are working tirelessly to ensure that we represent not only ourselves but also the Acadiana and Louisiana sections of ASCE extremely well in our hosting of Deep South 2018.

Along with looking forward and planning for future events; our student officers have been occupied with working towards increasing student involvement within the department as well as promoting the opportunities and relationships that ASCE and the discipline of civil engineering in general have to offer. We very recently hosted an annual back to school barbecue at which professionals within the industry, our UL civil engineering professors and faculty, along with graduate and undergraduate students all came together to celebrate the inception of a new academic year. We also held a departmental student led meeting the main goal of which was to give the students who are new to our University or

our department a synopsis of the events and opportunities that our student organizations have to offer.

In addition to preparing for the annual Deep South Conference; UL-ASCE with the help of ASCE Acadiana is in the process of planning multiple other major events that we hope to finalize in the near future. The first of which is a joint student and professional member meeting on the University of Louisiana at Lafayette campus with presentations by Mr. Tom Carroll and UL-ASCE members Mary Grace Sherlock and Alice Kerl. Our student chapter has also begun the process of planning its first Clean the Coast event of the 2017-2018 academic year in conjunction with Jacob Neu, ASCE Acadiana Student Chapter Liaison, and Mcneese University's ASCE student chapter. UL and Mcneese student members will be taking to the South Louisiana Coast in an attempt to rid the region of trash and debris that unfortunately continues to do damage to our state's ecosystem. This will be a great opportunity for our student members to provide service to the environment while forging relationships with ASCE members from a different student chapter as well as our regional parent chapter.

As you can see, the UL Chapter of the American Society of Civil Engineers has had an event filled quarter along with a long but exciting road ahead of us with regards to planning and hosting this year's Deep South Conference. We look forward to working closely with other ASCE Branches and Chapters at the local, state, and even the national level to make this a truly outstanding year. For additional information regarding the aforementioned events please feel free to contact us at [ullafayetteasce@gmail.com](mailto:ullafayetteasce@gmail.com). Geaux Cajuns!



## MCNEESE STATE UNIVERSITY

*By Caleb Greathouse, Student Chapter President*

Midterms are here already, and the semester is quickly flying by. September saw the release of the rules for the Concrete Canoe and Steel Bridge competitions, and our members are busy planning for these two big competitions that are coming up in the spring. We've narrowed our candidates for the project managers and are getting together our project timelines. Through better planning and an earlier start, we're hoping to improve on our construction process and team performance through increased testing and practice versus previous years. Our teams will be working on their designs, researching materials, and developing concrete mixes throughout October.

In late September, our chapter launched our new website – [mcneeseasce.org](http://mcneeseasce.org). Our goals were to offer resources to our student members and let professional ASCE members and the public know what's going on with McNeese ASCE. The site has the latest news, information about coming events, and a free job board for employers

to post positions and find candidates. Please check out our site, and let us know what you think!

In October, we had Dustin Corns, PE from NUCOR-Vulcraft speak to our group about the company and opportunities for internships and careers. Structural steel design, production, and fabrication are an exciting fields, and this was a good opportunity for our members to hear from someone in the industry. We'll be working with the Acadiana Branch and UL Lafayette student chapter to plan a volunteer project in Cameron Parish to clean trash at the Rockefeller Refuge. The UL student chapter has conducted successful events in the past, and we're excited for the opportunity to join them this year.

If you know of a volunteer opportunity, have a job listing, or are interested in sharing with our chapter by speaking at a meeting – please let us know at [contact@mcneeseasce.org](mailto:contact@mcneeseasce.org). Geaux Pokes!

## UNIVERSITY OF NEW ORLEANS

*By Christian P. McClung, Student Chapter President*

The ASCE Student Chapter at the University of New Orleans is doing great things in 2018 to build on our accomplishments from last year. In May 2017, our steel bridge team attended the National Student Steel Bridge Competition and, while having the opportunity to meet people from all over the country, gained valuable knowledge and inspiration. The experience at Nationals will guide us to success while we begin preparation for our competition in the spring. Our concrete canoe team is enthusiastic and hard at work building what we hope to be an award-winning piece for spring. Both teams continue to be dedicated to the success and prosperity of our pieces by utilizing past experiences to help us advance in the future.

We have already accomplished a great deal this year. We had the pleasure of contributing to our community with the 28th Annual Beach Sweep held by the Lake Pontchartrain Basin Foundation Save Our Lakes. The event gave us a sense of belonging to our community as well as an environmental mindfulness for the beautiful coasts surrounding our city.

Later that day, we had our first concrete pour for our concrete canoe. A few of our members had the opportunity to compete in the Paper Bridge Competition at the LCECS and were triumphant. Congratulations to our winners, President Christian McClung, Vice President Donald Gilardoni, Treasurer Vy Vu, Madeline Cefolia, and Arielle Authement.

We also had our first student chapter meeting on Monday, September 18th, which was a great success. Our President, Christian, talked about

upcoming events and involvement opportunities for our Civil Engineering students. We also had a guest speaker, Johan Palacios, PE, President of PACE LLC. Palacios led a discussion about technology trends and BIM workflows in design processes. The discussion gave us valuable insight to an essential part of professional engineering.

The ASCE National Convention came and went and we were ecstatic about hosting it in New Orleans. We displayed our award-winning steel bridge and concrete canoe in October 2017 at the National Convention. The team members discussed the processes of creating and designing the pieces and the preparation tests they performed prior to the competitions. We appreciate the experience and networking with other students and professionals from all over the country.

In the interim, we are developing fundraiser ideas to raise money for the activities put on by the student chapter. Event Coordinator Patrick James and Secretary Bailee Hurm are working to organize a local restaurant fundraiser that will include happy hour food and drinks. Patrick did a great job setting up a field trip to the Harvey Locks with the U.S. Army Corps held on Friday, October 13, 2017. Forthcoming, we will be involved in a multitude of STEM events. The events are meant to help high school students, across the state, get a glimpse of what we do at UNO in the College of Engineering. We hope this will create a preponderant desire for more students to enroll in our exceptional engineering program. To conclude, the ASCE of UNO is committed and passionate about our work thus far and enthusiastic for what has yet to come.



# — CALENDAR OF EVENTS —

JANUARY 2018

January 31 - February 1 22nd Joint Engineering Societies Conference – Lafayette, LA

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

# LOUISIANA CIVIL ENGINEER

Journal of the Louisiana Section

<http://www.lasce.org>

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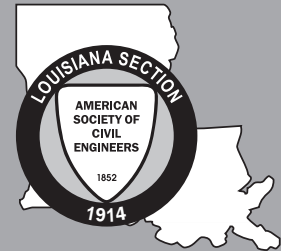
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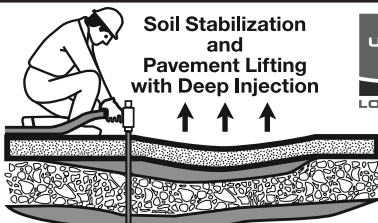
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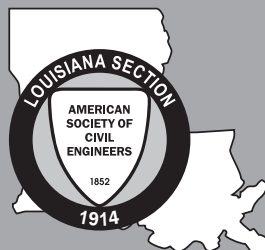
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