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**Journal of the Louisiana Section** 

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Andrew Keane Woodroof, PE 2024-2025 ASCE LA Section President

## **FEATURES:**

Emergent Uses of Large Language Models in Civil Engineering

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NOVEMBER 2024 VOLUME 33 • NO 1

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

## **President's Message**

By Andrew Woodroof, PE, Section President

With great honor, I am humbled to serve as your President of the Louisiana Section of the American Society of Civil Engineers for the 2024-2025 year. I step into this position hoping that I can continue the legacy of those that have served before me and taught me what it means to be a community leader through our profession. I would also like to recognize all the 2024-2025 Louisiana Section and Branch leadership, without whom it would not be possible to achieve the goals we have set forth.

I began my path in ASCE leadership as the Younger Member Chair of the New Orleans Branch; a path that has led me to serve as President of the New Orleans Branch, Chairperson of the Louisiana Coasts, Oceans, Ports, and Rivers Institute, and now 6 years of service on the Louisiana Section Board. Through these experiences I have been blessed to be mentored and inspired by leaders in our profession such as Tonja Koob Marking, Rudy Simoneaux, current Past President Marcus Taylor, and so many more. I am also inspired to see those that have picked up the torch for the New Orleans Branch and L.COPRI, making those organizations even stronger. I would not have found the lifelong friends I have made nor the fulfillment I have in my career without engagement in ASCE. I encourage all of you to get involved, and especially encourage young members of your organizations to get involved, so that we may all make both the organization and the profession stronger, as well an ensure that young members continue the legacy of ASCE and learn the essential leadership skills they will need to advance their careers.

As I enter this time of service, I feel compelled to reflect on the Vision, Mission, and Strategic Goals of the Society so that we can ensure our actions move the organization towards its intended target. Fortunately, we are armed with the ASCE 2023-2028 Strategic Plan to fulfill the needs of the present civil engineering industry:

Our VISION: Engineered and natural systems work in harmony for the benefit of humanity. Nowhere does that ring more true than Louisiana, where civil engineers are tasked with maintaining our communities, culture, and economy in harmony with our vast natural resources that give, but also take away.

Our MISSION: Lead the civil engineering profession to sustainably advance and protect the health, safety, and welfare of all. As

engineers, we have more opportunity that any other profession to promote the health, safety, and welfare of all people through clean water, safe roads. and resilient infrastructure to protect our communities, as well as protecting the natural environment through sustainable infrastructure practices.



Andrew Woodroof, PE

Our COMMITMENT: Inspire, connect, and serve our membership to maximize their professional and personal growth and magnify their lifelong professional impact. We are called to recognize the accomplishments and innovation of those that have come before us, and inspire the next generation of engineers to improve society and find fulfillment through their work.

ASCE's strategic objectives call upon us to innovate and drive development of future-ready infrastructure; to advocate for infrastructure investment and the civil engineering profession; to inspire those within and beyond the profession through engagement; to stimulate advancements in infrastructure systems through technical innovation; to magnify our collective impact through serving and growing the industry; and to deliver exceptional value to our members. Through our actions, it is my goal that the Section and Branch leadership delivers upon these strategic objectives by providing you – our members – with the tools and resources you need to continue to serve – and better – our communities through your work.

Thank you for the opportunity to serve as your president – I look forward to serving you over the course of the year, and even more so to the continued success of those that will follow.

## **Emergent Uses of Large Language Models in Civil Engineering**

By William "Bill" Katzenmeyer, PE, CFM,

#### Introduction:

The integration of Artificial Intelligence (AI) and Machine Learning (ML) in civil engineering has typically focused on narrow, specialized tasks. Traffic engineers use computer vision to automate vehicle counts, water resources specialists apply machine learning to satellite imagery for land use analysis and flood prediction, and structural engineers employ early failure prediction algorithms. While valuable, these applications primarily provided optimizations at the margins, requiring carefully structured data and extensive programming expertise to implement.

The emergence of Large Language Models (LLMs) like ChatGPT represents a fundamental shift in this paradigm. Unlike their predecessors, these models can understand and respond to natural language, write code, access files, analyze documents, and interpret images and diagrams when integrated with appropriate tools. Their rapidly increasing reasoning ability in math and science, combined with limited but improving planning capabilities, marks a significant evolution in how we approach daily engineering tasks.

The limitations are quite apparent - these text-based models won't create detailed drawings since image generators lack physical grounding and spatial awareness. They also won't replace the decision-making that requires licensed professionals, especially given current accuracy rates. However, the strong improvements since 2021 and significant planned investment in the technology suggest these limitations will be iteratively addressed as the value proposition drives adoption.

To understand why LLMs differ fundamentally from previous Al applications, consider the traditional approach. Earlier machine learning systems relied on simple statistical methods or "shallow" neural networks designed for specific tasks with carefully curated datasets. These systems worked well within defined boundaries but struggled to generalize even with substantial data and computing power. Examples include land use classification models for specific satellite datasets or flood models for particular geographic areas effective but limited in scope.

LLMs, by contrast, learn through unsupervised "deep learning" - training on vast amounts of unstructured data without explicit programming. This allows them to develop more general capabilities, similar to how humans learn language through exposure, explanation, practice, and feedback. Their capabilities far exceed previous methods, as evidenced by their ability to curate datasets, write code for training statistical models, evaluate outputs, and even recursively improve their methods.

This technological advancement presents an opportunity to reimagine how we leverage computational assistance in engineering practice. Rather than requiring expensive specialized software or extensive programming expertise, we can use LLMs as general-purpose tools - much like how spreadsheets became the universal platform for engineering calculations. Whether analyzing data, creating visualizations, converting regional code documents,

or managing meeting minutes, these LLM assistants can help automate tasks that traditionally consumed valuable professional attention.

## Understanding LLMs as Adept Tool Users

The most powerful aspect of LLMs isn't their ability to generate text, but rather their capability to use tools. Much like how humans progressed



William "Bill" Katzenmeyer, PE, CFM

by developing and using tools like fire and the wheel, LLMs have evolved to utilize various computational tools that expand their capabilities far beyond simple text generation. LLMs can perform basic mathematical operations using built-in tools like calculators and code interpreters, which was the first emergence of tool use. Their true power emerges when they combine these basic capabilities with more sophisticated tools. They can search the web for current information, analyze full documents through retrieval-augmented generation, interact with databases through API calls, and generate and execute code to solve complex engineering problems and create interactive tools. OpenAI's Code Interpreter is a particularly powerful example of this type of tool, as it allows the model to execute Python code from within the conversation and read results of the code execution.

The integration of function calling and tool use enables LLMs to tackle increasingly complex engineering tasks. Consider a typical workflow where an engineer needs to analyze soil data from a geotechnical report, create visualizations, and generate a summary report. Modern LLMs can read the PDF report, extract relevant data, generate Python code to analyze the results, create professional visualizations, and compose a draft report — all through natural language interaction, review, and feedback from a competent engineer.

Recent advances in multimodal capabilities have further expanded the utility of LLMs for engineering applications. They can now analyze and interpret engineering drawings, charts, and diagrams, while excelling at real-world photo interpretation for construction monitoring and quality control purposes. Voice transcription capabilities enable efficient field note documentation and unstructured data entry, while interactive interfaces allow for real-time feedback and analysis. These capabilities prove particularly valuable in civil engineering, where we often work across a wide range of document types, modalities, and data formats in a tightly integrated way.

While these models demonstrate impressive capabilities, they are far from infallible oracles. They can generate plausible-sounding but incorrect information, particularly when dealing with complex technical topics or operating at the edges of their ability to generalize from training data. It can be easy to confuse a few good guesses with prescience and overestimate their abilities. Early users of ChatGPT encountered amusingly erroneous responses quite regularly, but error rates are rapidly improving as models advance. Humans will continue to be needed to review outputs and provide direction for the foreseeable future, regardless of how impressive

the models become. They will not relieve us of our professional duties, and productivity at the cost of accuracy represents an unacceptable tradeoff for most practicing professionals. New workflows must provide a clear value proposition to be viable, so the tasks that benefit from LLM assistance will inevitably grow from genuine necessity and proven utility.

#### **Finding Use Cases**

LLMs excel at tasks involving pattern recognition, natural language processing, and translation across human and machine languages and syntax formats, as well as sophisticated tool use. It's useful to think of LLMs as highly capable research assistants or junior engineers — they can handle routine tasks, provide valuable insights, and increase productivity, but require specific direction and verification of their work by qualified professionals to maintain value. This understanding helps set appropriate expectations and ensures effective use of LLMs while maintaining the high standards required in civil engineering practice. High-quality results from an LLM demand detailed instructions and good-faith engagement, as these language models ultimately reflect the human-generated data they're trained on and implicitly mimic emergent human behavioral patterns.

The modern approach to engineering research often involves keyword searches across multiple sources, manually compiling information from PDFs, and spending considerable time organizing, interpreting, and synthesizing findings. Traditionally, engineers have relied on red ink pens, highlighters, and reams of paper as their primary tools. These tasks fundamentally involve the understanding of text, images, and spatial awareness—areas where current models can provide substantial assistance, even if understanding of spatial relationships is still quite weak overall.

Consider a common scenario: an engineer needs to understand the requirements for a specific type of retaining wall in a particular jurisdiction. Traditional research might involve searching through building codes, local amendments, geotechnical manuals, and ASCE standards — a time-consuming process requiring significant expertise to navigate effectively. An LLM can analyze these documents simultaneously and can provide a synthesized response that highlights relevant requirements while identifying potential conflicts or special considerations for the engineer's focused attention. Using research tools such as Perplexity.ai or large context models like Claude or Gemini dramatically improves both the turnaround time and quality of retrieved information.

The advantage of LLMs over traditional search engines becomes apparent when dealing with complex technical queries. While search engines excel at finding exact keyword matches, LLMs understand query intent and provide nuanced responses considering multiple factors. For example, when researching soil stabilization techniques, an LLM can consider factors like soil type, groundwater conditions, constructability, and cost implications, providing comprehensive analysis rather than simple keyword matching. While users must still evaluate the response, LLM outputs often prove more information-dense and accurate than source material alone, as they remain constrained to the specific query context.

LLMs demonstrate particular strength in explaining complex engineering concepts by adapting explanations to the user's expertise level and providing relevant examples. They can break down complicated topics into manageable components, generate practice problems, and create interactive demonstrations through code generation. This capability proves valuable not only for

stakeholder communication but also for learning and communicating complex topics within the practice itself.

Technical troubleshooting represents another powerful LLM application. When engineers encounter software errors or need to debug scripts, LLMs can analyze error messages, suggest potential solutions, and generate corrective code. This capability extends beyond engineering programs — LLMs can help resolve common software issues, configure development environments, and optimize technical workflows. For those with limited programming experience, LLMs can dramatically accelerate the learning curve by providing contextual examples and step-by-step guidance for implementing new tools and workflows.

Informal legal assistance represents an under-appreciated strength of current-generation LLMs. Given sufficient relevant information, a well-defined question about a construction issue's legal ramifications will often yield surprisingly helpful responses. In many cases, simple web search and third-party objective feedback are sufficient to mediate conflicts before they escalate into legal issues. The low-cost availability of such assistance provides a useful tool in this regard, and can be applied proactively far before formal legal assistance is ever needed. For entrepreneurs and small businesses, its can be an invaluable resource for navigating some of the neverending minor uncertainties of business ownership.

#### **Interactive Tools and Automation**

The advent of LLM-driven code execution environments marks a significant shift in how civil engineers can approach computation and automation. ChatGPT's code interpreter and Claude's artifacts feature provide a natural language interface to powerful computational tools. Engineers can describe their desired analysis in plain English, providing relevant equations, problem statements, constraints, and output format, and the LLM generates and executes the necessary code. When analyzing flood frequency data, for instance, instead of manually creating a spreadsheet or writing complex code, an engineer can simply describe the analysis they want to perform. The LLM generates the appropriate Python code, executes it, and provides both the results and visualizations. This makes sophisticated analytical tools readily available to engineers while maintaining transparency in the calculations and creating repeatable workflows that don't depend on the LLM for perfect consistency.

Browser-based interactive tools represent another powerful application of LLMs. Through frameworks like React and modern visualization libraries, LLMs can create dynamic, interactive dashboards for engineering calculations. These dashboards allow engineers to explore different scenarios, visualize results in real-time, and share their analyses with stakeholders in an accessible format. A hydraulic analysis tool that previously existed as a complex spreadsheet can be transformed into an interactive web application, making it easier to use, share, and maintain. In most cases, these can be built and iterated upon more readily than commercially available software packages.

Consider the common task of analyzing soil boring data across multiple sites. Traditionally, this might involve copying data between spreadsheets, creating multiple charts, and manually generating reports. With LLMs, this entire workflow can be automated through Python scripts that read the raw data, perform the analysis, generate visualizations in a portable HTML+React dashboard, and create summary reports. More importantly, these scripts can be generated and modified through natural language interaction,

making them accessible to engineers who may not be comfortable writing code from scratch or have deep experience with particular libraries, frameworks, and syntax.

The real power of these tools lies in their ability to evolve with your needs. Unlike traditional software that requires extensive programming knowledge to modify, LLM-powered tools can be adjusted and enhanced through natural language interaction. If you need to add a new analysis method to a scripted hydraulic modeling workflow, you can simply describe the desired changes to the LLM, which can then update the code accordingly. This unprecedented flexibility allows engineering tools to adapt quickly without requiring expensive, proprietary, custom-coded solutions.

Engineers often deal with multiple file formats and need to extract, transform, and analyze data from various sources. LLMs can generate scripts to automate these tasks, handling everything from PDF extraction to CAD file manipulation through VBA (Visual Basic for Applications) scripting. Where code can be reliably and accurately generated from an easily interpretable plain language description, we can improve transparency and repeatability. By providing a bridge between traditional engineering workflows and modern software development practices, LLMs allow engineers to create sophisticated tools without becoming full-time programmers.

LLMs excel at creating interactive visualizations and explanatory interfaces that make technical concepts more accessible. A complex design analysis can be transformed into an interactive web application that allows stakeholders to explore different scenarios and understand the implications of various design choices. Building on these capabilities, LLMs hold immense promise in helping engineers communicate complex concepts not only to external stakeholders and clients but also facilitate knowledge exchange vertically and horizontally within organizations.

#### **Design and Analysis Support**

The application of LLMs to design and analysis tasks represents a significant evolution in how civil engineers can approach complex technical problems. Rather than replacing engineering judgment, LLMs serve as powerful assistants that can automate routine calculations, verify compliance with standards, and help provide multiple computational scenarios to assist engineers with optimizing designs. Instead of being limited to pre-built spreadsheets or complex software packages, engineers can now rapidly develop custom calculation tools tailored to specific project needs. For example, when analyzing multiple drainage scenarios for a model study, an LLM can generate Python scripts that automate the process. The LLM not only creates the initial scripts but also helps refine them based on specific requirements and constraints. This approach allows for creating more data points and accelerating the evaluation of alternatives beyond what traditional methods would allow given budget and schedule constraints. When analyzing retaining wall designs, an LLM can generate code that evaluates hundreds of combinations of soil parameters, wall heights, and loading conditions, presenting the results in clear, actionable visualizations or as a dashboard where users can vary inputs to quickly evaluate alternatives and understand the sensitivity of any design assumptions. Quantity calculations and cost estimations can be incorporated iteratively if needed, and the results shared using a simple browser.

Modern civil engineering projects must comply with an increasingly complex web of codes, standards, and regulations. LLMs can assist by interpreting requirements, checking calculations against current standards, and flagging potential compliance issues. When reviewing structural designs, an LLM can help verify that all elements meet current code requirements, identifying areas that need additional attention or modification from a list of QA/QC checks enumerated by an experienced engineer. This provides a powerful tool for quickly reviewing large amounts of text to spot certain types of avoidable human mistakes and lower baseline error rates in typical engineering deliverables, even if the models still fall far short of replacing human capabilities in some areas while exceeding them in others.

The integration of LLMs with existing engineering software represents a particularly promising development. Through API interactions and automation scripts, LLMs can help bridge gaps between different software packages, automate repetitive tasks, and extract meaningful insights from complex analyses. When working with HEC-RAS (Hydrologic Engineering Center's River Analysis System) models, LLM-generated scripts can automate the process of running multiple scenarios, extracting results, and generating summary reports as well as performing bespoke analysis to support large-scale watershed modeling efforts. This not only saves time but also reduces the potential for human errors and improves repeatability.

The key to effectively leveraging LLMs for design and analysis lies in understanding their role as assistants rather than replacements for engineering judgment. They excel at automating routine calculations, checking compliance with standards, and helping optimize designs, but they should always be used within a framework that includes appropriate professional review and verification. This approach allows engineers to focus their expertise on critical decision-making while leveraging LLMs to handle time-consuming tasks.

#### **Implementation Strategy and Best Practices**

The successful implementation of LLMs in civil engineering practice requires a thoughtful, structured approach that balances the promise of new capabilities with the practical realities of professional practice. Drawing from implementation experience, a methodical approach focusing on security, quality control, and staff development yields the best results.

Getting started with LLMs doesn't require a massive organizational overhaul. Begin by identifying specific, well-defined tasks that could benefit from automation or enhancement. Document review and specification development represent good starting points – tasks that are time-consuming but have clear success criteria. This focused approach allows teams to build confidence with the technology while delivering immediate value.

Security considerations should be paramount when implementing LLMs in professional practice. Remember that anything input into most "free" LLM chat services becomes part of the service provider's data. Establish clear guidelines about what types of information can be shared with LLMs, treating personal and free accounts like any other third-party data service. For sensitive or confidential projects, consider using a corporate account that guarantees privacy, locally-hosted solutions, and limiting LLM use to non-sensitive tasks. The vast majority of municipal engineering work falls into the latter category. As a rule of thumb, don't input anything into an LLM that you wouldn't be comfortable putting in a Google search.

Privacy and security concerns are often cited as reasons for banning access to LLMs on corporate networks. However, this can create

pressure for employees to use these tools on personal accounts, risking the transfer of protected data outside secure networks. While best practices are still developing, historical examples suggest these efforts often prove futile, and adoption will eventually become near universal. Providing access to capable models and platforms from within the corporate firewall is more likely to be a long term successful strategy. Open source models can be locally hosted and are following closely behind the performance of state of the art proprietary models from closed providers.

Staff training represents a crucial component of successful implementation. Rather than attempting to turn everyone into AI experts overnight, focus on providing access and developing practical skills that align with each team member's role and interests. Start with basic interactions like using Code Interpreter for calculations or document analysis, or helping edit and assemble information into memorandums and reports. Then progress to more advanced applications as comfort and confidence grow. Peer learning and shared examples are likely to prove particularly effective – engineers learn best from seeing how their colleagues solve real problems with these tools, and consensus around acceptability of use only comes from acknowledging burgeoning adoption. Because no design guide or handbook exists specifically for using language models in engineering tasks, a creative approach becomes a necessity.

The integration of LLMs into existing workflows requires careful consideration. Begin by mapping current processes and identifying points where LLMs are well suited to add value without disrupting established procedures. I provide a few in this article, but a high value effort can generally be derived by converting commonly used spreadsheets to internally-hosted simple web pages or Python notebooks (interactive coding environments that combine code execution, rich text, and visualizations). This represents a great way to make specialty tools more accessible to your team, and with a competent assistant you can even offload some of the hand-holding associated with any required software installed and configured.

LLM integration into quality control frameworks should build upon existing professional practices rather than replacing them. Establish clear verification procedures for LLM-generated content, particularly for technical calculations and specifications. Extratiers of incremental LLM review are likely emerge: automated checks via LLM, which provide direct feedback to staff during design development and offer flexible tools for professionals to query and request changes or perform consistency checks in their documents. More complex review queries will inevitably use more powerful models, which leverage more compute to improve results in accordance with the level of detail being requested. None of these replace human review, but they do allow more confidence that tasks which can be solved by simple reasoning, instructions and a competent reader can be increasingly handled in an automated manner.

The economic considerations of LLM implementation deserve careful attention. While the basic tools are relatively inexpensive, the true cost includes staff training, procedure development, and quality control measures to ensure that LLM's are not being relied upon beyond their capabilities. However, the return on investment can be substantial. Current estimates for early GPT-4 models (without extensive tool use and with much lower accuracy) show significant improvements in office tasks in terms of both productivity

and efficiency, while simultaneously improving consistency and reducing errors.

Risk management in LLM implementation requires a balanced approach. While these tools offer significant benefits, they also introduce new considerations regarding accuracy, security, and professional liability. Develop clear guidelines for appropriate use cases, establish verification procedures, and maintain professional insurance coverage that acknowledges the use of AI tools in your practice. A supportive rather than punitive stance should be adopted, and these technologies should be made widely available with training, or one can expect proprietary data to leak based on clear incentive structures and inevitable competitive pressures.

#### **Future Outlook and Conclusions**

As we look to the future of LLMs in civil engineering, it's crucial to focus on practical, near-term developments that will impact our daily work rather than speculating about distant possibilities. The most significant changes we'll see in the next few years will likely come not from revolutionary new capabilities, but from the creative application of existing tools to solve real engineering problems.

The immediate future of LLMs in civil engineering will be shaped by their increasing integration with existing software tools and workflows. We're already seeing this evolution in action, with LLMs being integrated into CAD software, GIS platforms, and engineering analysis tools. This integration will continue to accelerate, making it easier for engineers to leverage these capabilities within their familiar work environments. Given the pay-per-token cost model, it's unlikely that software providers will include unlimited access to the most powerful models, so expect a lag effect as they utilize cost-optimized, fine-tuned models for specialized software assistant roles.

In addition to integrating with existing tools, there is a growing niche of using LLMs to act as intelligent interfaces to existing software tools, especially well-documented open source tools. LLMs can increasingly serve as natural language interfaces that make these tools more accessible and efficient to use. Instead of learning complex GIS commands or CAD scripting languages, engineers will be able to describe their intended operations in plain language, with LLMs handling the technical implementation and explaining their code step by step for transparency. The user can then provide iterative instructions and feedback to achieve the desired result. The ability of LLMs to control graphical user interfaces represents another significant advancement on the horizon. This capability will allow engineers to automate complex workflows that currently require manual interaction with graphical software tools. While we're just beginning to explore these possibilities and the mix of capabilities and costs are not quite attractive, the potential for increasing efficiency and reducing errors is substantial.

Realizing these benefits will require a shift in how we think about professional development. The successful civil engineer of the near future will need to be comfortable directing LLM assistants, verifying their output, and integrating their capabilities into engineering workflows. This doesn't mean every engineer needs to become a programmer, but rather that we need to develop new skills in effectively communicating our intent to these tools and critically evaluating their output. For engineers looking to get started with LLMs, begin with simple, well-defined, text-based tasks that can provide immediate value. Start with document analysis, automating repeatable calculations, or generating simple code to manipulate geospatial files. As you become more comfortable with these tools,

gradually expand their use to more complex tasks and workflows. The limitations of the technology—such as their tendency to provide answers biased towards the inputs, occasionally fabricating references and information, and the limited context window that can't ingest all of our data at once—become quite apparent and predictable with regular usage. The innovation surface is often referred to as a "jagged edge" because capabilities can vary starkly between even seemingly logically adjacent tasks. Despite this, there is still a steep net benefit proposition of working with these technologies where they are well suited.

The key to success with LLMs lies in maintaining a balanced, practical approach. These tools are not magic solutions that will automatically solve complex engineering problems. Instead, they are powerful assistants that can help us work more efficiently and effectively when used appropriately. Just as Excel didn't eliminate the need for engineering judgment but rather gave us better tools for applying it, LLMs will enhance rather than replace professional expertise. As we move forward, the civil engineering profession has an opportunity to shape how these tools are used in our industry. By actively engaging with these technologies, developing appropriate standards and best practices, and sharing our experiences, we can ensure that LLMs are implemented in ways that enhance the quality and efficiency of our work while maintaining the high standards our profession demands. One of the best ways we can do this is by publishing open source scripts and workflows for non-sensitive data that we have built with LLMs, which can then be scraped and included in future open training data.

I encourage you to begin exploring these tools in your practice. Start small, focus on specific problems you'd like to solve, and gradually build your expertise. Share your experiences with colleagues, learn from others' successes and failures, and contribute to the growing body of knowledge about how best to apply these tools in civil engineering. The future of our profession will be shaped not by the tools themselves, but by how we choose to use them.

If you are interested in specific examples of how to use LLMs for water resources engineering, check out the HEC-Commander Tools repository on Github, where there are a series of blogs, ChatGPT examples, and Python notebooks that were all built with language models and are intended to kick-start your journey with using language models in your daily work.

As a final note, many of the use cases described in this article technically don't exist in production yet by any substantive measure and represent quite a bit of opportunity for anyone keen to seize and capitalize on it. If you are looking to learn more, I have included several resources below:

#### For Further Reading:

- "The Bitter Lesson" by Rich Sutton (2019) A seminal piece on why approaches that leverage computation through search and learning have historically dominated in AI, outperforming human-engineered solutions. Essential reading for understanding the trajectory of AI development and its implications for engineering practice.
- "Building with Words Using Conversational AI to Navigate
  Technical Guidelines and Codes" (ASCE Webinar) An in-depth
  exploration of how AI and Natural Language Processing
  can transform large volumes of technical standards and
  guidelines into interconnected references, featuring practical
  examples from the FDOT Design Manual Navigator project.
- 3. "ChatGPT in Civil Engineering: Applications, Advances, and Challenges" (Case Study ASCE) Comprehensive analysis of ChatGPT's potential in civil engineering, covering automated documentation generation, policy development, project planning, and regulatory compliance. Includes discussion of technical challenges and security considerations.
- 4. "The Innovative Potential of GPTs for Quality Inspections in Swedish Construction Projects" Analysis of using GPTpowered cloud services for improving construction quality inspections. Quantifies the significant cost of quality defects (approximately SEK 100 billion annually) and proposes solutions for enhancing inspection processes through AI assistance.
- "Automatic Traffic Monitoring Using Deep Learning and AI" (Mineta Transportation Institute) Case study demonstrating the application of AI for pedestrian and cyclist safety through automated traffic monitoring. Addresses challenges of realworld implementation and provides performance metrics for AI-powered detection systems.
- 6. "Is ChatGPT a Good Geospatial Data Analyst?" Pioneer study exploring the use of LLMs as interfaces for geospatial data analysis. Presents a framework for translating natural language queries into SQL for spatial databases, with case studies using New York City data.
- 7. "Automatic Digitization of Engineering Diagrams Using Deep Learning and Graph Search" Research on automating the digitization of Piping and Instrumentation Diagrams (P&IDs) using AI. Demonstrates how deep learning and graph search can unlock data from image-based engineering diagrams to enable digital twin creation and asset management.

#### Footnote:

As an example of writing produced in collaboration with an LLM assistant, this very article was developed using Perplexity's Pro Search, Anthropic's Claude and ChatGPT's o1-Preview models, alongside my own extensive notes, research, iterations and manual editing.

William Mark "Bill" Katzenmeyer, PE, CFM is Senior Water Resources Technical Lead for C.H. Fenstermaker and Associates, LLC. Bill is a Professional Engineer and Certified Floodplain Manager specializing in hydrologic and hydraulic modeling, floodplain mapping and risk management, flood impact analysis, benefit cost analysis, and the management of FEMA Hazard Mitigation Assistance grants and programs.

Bill is the developer and primary author of the HEC-Commander tools, an open-source collection of Python notebooks authored through natural language instruction with the assistance of ChatGPT. Published in November 2023, these tools serve as an early success story and framework for leveraging LLMs to code automation scripts for water resource engineering workflows. These tools include the RAS-Commander Python notebook, the first open source tool capable of automated parallel execution of HEC-RAS plans across multiple Windows-based machines.

Bill also serves on the American Society of Civil Engineers (ASCE) Coast Ocean Ports and Rivers Institute (COPRI) Ports and Harbors Committee, Sea Level Change Subcommittee and Waterways Committee.

## **ASCE Region 5 News**

By Sarah Matin, PE, M.ASCE, Director

Your Board of Governors is excited about the future of our Region. The Purpose of Region 5 is Advancing the Profession by:

- Inspiring Members
- Creating Excitement
- · Promoting Excellence in Civil Engineering

I'm encouraged by the support and participation of your Governors in this process. There is an air of excitement about the future of Region 5. One of our initiatives is to help groups that at are struggling. If your Section/Branch/YMG/Institute/Student Chapter would be interested in meeting with the R5BoG, please let me know. We can discuss general concerns or focus our meeting on one topic like student transition. I like to think of these meetings as personalized information beyond the MRLC. We're actively looking for locations for upcoming meeting, so please consider hosting.

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 BOG calls. Your Director and Governors are here to help you and make your group successful. Please let us know how we can help! Email me at <a href="mailto:sarah.matin@adspipe.com">sarah.matin@adspipe.com</a>. For more information see our website <a href="mailto:https://regions.asce.org/region5/">https://regions.asce.org/region5/</a>



Sarah Matin, PE, M.ASCE

#### Louisiana Governor



**Christopher G. Humphreys, PE, M.ASCE**Southeast Louisiana Flood Protection Authority – East

#### **Regional Governor At-Large**



Tonja L. Koob Marking, PhD, PE, BCNE, BCWRE, F.ASCE Gaea Engineering Consultants, LLC



Dear Members and Friends:

On behalf of ASCE, we extend our warmest wishes to you this holiday season. As we celebrate this joyous time, we want to express our sincere appreciation to you, our dedicated members.

This year has been marked by exciting achievements and complex challenges, underscoring the global importance of the civil engineering profession.

Highlighting the wonder of engineering, we released last spring our new IMAX film, Cities of the Future, which is now playing in museum science centers and theaters around the world. Attendees continue to be awed by a 3-D giant screen experience of engineering and infrastructure while also enjoying supplemental educational materials and the virtual reality Future World Vision experience.

Looking at the challenges ahead, we released Bridging the Gap, a comprehensive report highlighting the impacts of infrastructure investment on American households and businesses, especially concerning recent legislation and infrastructure investments. This study, conducted every four years, sets the stage for the upcoming 2025 Report Card for America's Infrastructure. Which we will release next spring.

These and many more initiatives advanced our Strategic Plan as we examined our profession and organization to ensure that ASCE and its members are prepared for the future. We're taking giant leaps forward, creating a new Digital Strategy, Standards Office, AMPLIFY website, and a new Grants and Contracts Office, working in partnership with federal agencies to advance resilient infrastructure through ASCE standards and training programs. We also advanced ASCE education and workforce initiatives with a variety of task committees, United Engineering Foundation-funded projects, and coalitions, including the Engineering and Public Works Roadshow and Engineering Workforce Consortium with ACEC and APWA, as a collaborative effort to attract, retain, and inspire the next generation of civil engineers.

We look forward to the future and the pivotal role civil engineers will play in its success.

While we take pride in many organizational accomplishments, we want to emphasize that *your* commitment to the Society and the profession is the key to our success. Together, we are shaping the future as trusted infrastructure leaders, building a better tomorrow.

Looking to 2025, we are eager to embrace the opportunities and possibilities that await us in the new year. With our deepest gratitude and appreciation, we wish you a happy holiday season!

Sincerely

Feniosky Peña-Mora, Sc.D., P.E., NAS, CCM, F.CIOB, NAC, Dist.M.ASCE ASCE 2025 President

Thomas W. Smith III, ENV SP, CAE, F.ASCE Executive Director



ASCE WORLD HEADQUARTERS | 1801 Alexander Bell Drive, Reston, VA 20191-4382 nedrahains@gmail.com is subscribed to General Society Announcements. Unsubscribe from all | Manage mv email preference.

## 2023-24 ASCE Louisiana Section Awards and Officers Installation Meeting

## 2024-25 ASCE Louisiana Section Awards and Officers Installation Meeting

The 2024-25 Louisiana Section Awards and Officers Installation Meeting was held on October 17, 2024 at the ASCE New Orleans Branch Luncheon / Award Ceremony / Section Board Installation at the Lulu Restaurant Distillery in New Orleans with the New Orleans Branch. Section President, Marcus D. Taylor, PE, called the meeting to order, gave the invocation, and welcomed everyone to the meeting. Section President Taylor made the opening remarks and introduced Joshua Olivier, PE, Section Awards Committee Chair.

Continuing the presentations, Louisiana Section Awards Committee Chair Joshua Olivier, PE opened the awards ceremony.

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. Olivier 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:

Luke S. Haney, PE – Outstanding Young Civil Engineer
Mary "Molly" Bourgoyne, PE, MPE – Outstanding Civil Engineer
Elizabeth Matthews, PhD – Outstanding Civil Engineer Educator
Matthew Redmon, PE – Outreach Award
Ali Mustapha, PE – Wall of Fame
Pressley L. Campbell, PhD, PE – Wall of Fame (not pictured)
Silas Cunningham, PE – Wall of Fame (posthumously)
Norma Jean Mattei, PhD, PE – Lifetime Achievement



Joshua Olivier, PE presenting Luke Haney, PE the Outstanding Young Civil Engineer Award



Joshua Olivier, PE presenting Mary "Molly" Bourgoyne, PE, MPE – Outstanding Civil Engineer Award



Joshua Olivier, PE presenting Elizabeth Matthews, PhD – Outstanding Civil Engineer Educator Award



Ali Mustapha, PE – Wall of Fame Award



Silas Cunningham, PE – Wall of Fame (posthumously) Award



Joshua Olivier, PE presenting Norma Jean Mattei, PhD, PE, and Past ASCE National President – Lifetime Achievement Award

Tonja Koob, PhD, PE, Region 5 Governor at Large installed the officers for the Louisiana Section of the American Society of Civil Engineers.



Swearing in of the 2024-25 Section Board by Tonja Koob, PhD, PE, Region 5 Governor at Large

#### ASCE LA Section 2024-2025 Officers:

Andrew Woodroof, PE – President
Katherine Foreman, PE – President-Elect
Brant Richard, PE – Vice-President
Luke Haney, PE – Secretary-Treasurer
Marcus D. Taylor, PE – Past President

#### The Board of Directors are:

#### **Branch Directors**

Emily Faulk, PE – Acadiana President

Jack Koban, PhD, PE, PG – Baton Rouge President

James Williams, PE – New Orleans President

Thomas Jenkins, PE – Shreveport President

#### **Assigned Branch Directors**

Jared Veazey, PE – Acadiana Director

Danielle Mayeaux – Baton Rouge Director

Jesse Noel, PE – New Orleans Director

Linsey Brooke Olivier, PE – Shreveport Director

Patrick Stiegman, PE – New Orleans Director

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

Blake Roussel, PE - Baton Rouge Director

#### **Regional Governor**

Christopher G. Humphreys, PE, M.ASCE

#### **Regional Governor At Large**

Tonja L. Koob Marking, PhD, PE, BCNE, BCWRE, F.ASCE

Andrew Woodroof, PE, the new Section President then congratulated the new board. Woodroof closed the meeting by presenting his goals for his upcoming presidency and thanked everyone for attending.



Andrew Woodroof, PE accepts the gavel from Marcus Taylor, PE



Marcus Taylor, PE accepts the Past President's Pin from Andrew Woodroof, PE

## **ASCE Louisiana Section 2024-2025 Officers**



Andrew Woodroof, PE President



Katherine Foreman, PE President Elect



Brant Richard, PE Vice President



**Luke Haney, PE** Secretary-Treasurer



Marcus D. Taylor, PE
Past President

## **ASCE Louisiana Section 2024-2025 Board of Directors**



Blake Roussel, PE Directors-at-Large



Patrick Stiegman, PE
Directors-at-Large



**Emily Faulk, El** Acadiana President



Jack Koban, PhD, PE, PG Baton Rouge President



James Williams, PE New Orleans President



Thomas Jenkins, PE Shreveport President



**Jared Veazey, PE**Assigned Branch Directors



**Danielle Mayeaux, PE**Assigned Branch Directors



**Jesse Noel, PE**Assigned Branch Directors



**Linsey Brooke Olivier, PE** *Assigned Branch Directors* 



Christopher G. Humphreys, PE Regional Governor



**Tonja Koob, PhD, PE** *Regional Governor At Large* 

## **ASCE-COPRI Louisiana Chapter News**

By Kiara Horton, El, Director - Communications





Kiara Horton, El Director – Communications

The Louisiana Chapter of the Coasts, Oceans, Ports, and Rivers Institute (L.COPRI) of the American Society of Civil Engineers (ASCE) promotes membership, professional development, and visibility throughout the State of Louisiana by conducting virtual webinars and inperson events.

#### **YPG and Student Chapter Updates**

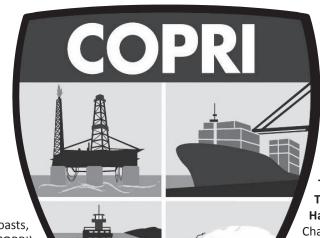
Louisiana COPRI is excited to announce the winners of the "Future of the State" Poster Competition 2024. We received a wide range of impressive submissions from talented students across Louisiana, each offering unique insights and innovative solutions to the challenges facing our coastal and port infrastructure.

After careful review by our esteemed panel of judges, we are proud to announce the following winners:

- Carlie Dutile, Marion Vise, Leo Guerrero, Jacob Contreras, Phoebe Hemmerling, John Kees – R.E.A.C.H.: Restoring Ecosystem & Community Health
- Katya Opel, EI, S.M.ASCE, PhD Candidate FLoAT: A Multi-Scale Flood Loss Assessment Tool Derived from Experimental Data

We would like to extend our sincere congratulations to the winners and our heartfelt thanks to all the participants for their hard work, creativity, and dedication. The competition was highly competitive, and the quality of work submitted was exceptional. Winning posters were exhibited at the Fall Seminar.

Please reach out to Hayden Franklin (Student Chapter President, <a href="https://hfran15@lsu.edu">hfran15@lsu.edu</a>) and Yelitza Cedeno (YPG Director, <a href="https://yelitza.cedeno@hdrinc.com">Yelitza.cedeno@hdrinc.com</a>) for information on how to get involved as an LSU Student or Younger Member.



ASCE

2024-2025 L.COPRI Board Members

**Myram Bo-Mekhayel, PE** – Immediate Past Chair

Gerald Songy - Chair

John Darnall – Vice Chair

Brett McMann – Secretary

**Kiara Horton** – Treasurer

Yelitza Cedeno -

Communications Director

**Gregory Mattson** – Programs Director

TBD - YPG Director

TBD - Scholarship Director

**Hayden Franklin** – LSU Student

**Chapter President** 

The Board Induction Ceremony was held at the Fall Seminar and conducted by Rudy Simoneaux.

#### **Past Events**

Fall 2022 L.COPRI Annual Technical Seminar

L.COPRI hosted a full-day in-person seminar on Wednesday, October 30, 2024 at the Lod Cook Hotel and Conference Center in Baton Rouge. There was a full schedule of speakers and panelists covering the four pillars of COPRI – Coasts, Oceans, Ports, and Rivers. Special Thanks to all our speakers:

We also want to give a huge thanks to our sponsors that made this event possible:

COPR	COASTS, OCEANS, PORTS & RIVERS INSTITUTE Louisiana Chapter	2024 Fall Seminar: "Future of…"				
Time		Торіс	Speaker	COPRI Pillar		
8:30 am	Registration, Breakfast, Opening Remarks		-	-		
9:00 am	Future of Avondale		Jeff Keever	Ports & Rivers		
10:00 am	The Future of LSU Coastal		Clint Willson	Coasts		
Break						
11:15 am	Operations and Maintenance – CPRA Operations Division		Brad Barth	Coasts		
12:15 pm	Lunch & Awards		-	-		
1:15 pm	Future of Sand Search for Restoration		Mike Miner	Rivers & Oceans		
	Break					
2:00 pm	Future of Ports & Multimodal Commerce		Julia Cormier	Ports		
3:00 pm	Ethics Presentation		LAPELS	=		
4:00 pm	Happy Hour & Student Posters		-	-		

**General Sponsors:** Fenster Maker | Freese and Nichols | Geo Engineers | Natrx | Neel Schaffer | Volkert

Poster Sponsors: Adaptive Management and Engineering LLC

**Happy Hour Sponsors:** Aardman & Associates | Moffat & Nichol Keep a look out for future event announcements via email and LinkedIn and contact our newly appointed 2024-2025 Programs Director Greg Mattson at <a href="mailto:gregm@amesouth.com">gregm@amesouth.com</a> with any questions or ideas you may have.

#### **Scholarship Updates**

L.COPRI traditionally awards annual scholarships to students (1 graduate and 1 undergraduate) studying Civil, Coastal, Ocean or Environmental Engineering, or a Coasts, Oceans, Ports, or Rivers related field. Be on the lookout for the scholarship application form coming this fall. Scholarship winners are typically presented their checks during L.COPRI's annual spring seminar.

#### **National COPRI Professional Achievement Awards**

National COPRI offers several opportunities to recognize our colleagues for their professional achievements. For more information on individual, project, research, and younger member award opportunities, please visit <a href="https://www.asce.org/communities/institutes-and-technical-groups/coasts-ports-oceans-rivers-institute/awards">https://www.asce.org/communities/institutes-and-technical-groups/coasts-ports-oceans-rivers-institute/awards</a>.

#### Other Information

The activities of L.COPRI includes seminars, workshops, and other activities to benefit all ASCE and COPRI members. Members do not have to be an engineer to join COPRI. The Institutes of ASCE 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. We would like to extend an invitation to our members to submit feedback and ideas for upcoming webinars and events. Please submit these ideas to gsongy@moffattnichol.com, and stay-tuned for a meeting invite if you are a member of our L.COPRI email list.

Also, please don't forget to follow us on LinkedIn. We have a new L.COPRI page giving you real time updates on the events we are hosting.

## **ASCE-G-I Louisiana Chapter News**

By Ricardo C. de Abreu, PhD, PE, BCGE, F.ASCE, G-I Chairman





Ricardo C. de Abreu, PhD, PE, BCGE, F.ASCE G-I Chair

This past October, I was honored to step into the role of Chairman of the Board for the Louisiana Geo-institute (G-I) Chapter. As I take on this responsibility, I want to express my gratitude to my fellow board members and the hard work each of them contributes to promoting and advancing the geotechnical engineering profession in our state.

Together, we stand at an exciting juncture. Our profession continues to evolve, facing new challenges and opportunities. As we embark on this journey, I am thrilled to introduce our new board of directors' members for 2024-2025, each bringing a wealth of knowledge and diverse perspectives that will strengthen our leadership and vision.

#### 2024-2025 Board Members:

George F. Segré Quilichini, PE – Past-Chairman Ricardo C. de Abreu, PhD, PE – Chairman Benjamin M. Cody, PE – Vice-Chairman Alicia Sellers, PE - Secretary-Treasurer Gwendolyn P. Sanders, PE – Director-at-Large



Last September we started a sponsorship drive to be able to continue providing professionals and students with high-quality webinars and events in 2025. We are thrilled with the response from several companies who provided generous contributions to our chapter. If your company is interested in sponsoring the Louisiana G-I chapter, please contact me personally at ricardo@fdaengineers.com, or reach us at G-I geoinstla@gmail.com, and we will give more details.

As we move forward, our focus will be on enhancing collaboration and supporting education and professional development within our community. I invite each of you to share your ideas and insights as we chart our course for the future. Feel free to contact me at <a href="mailto:ricardo@fdaengineers.com">ricardo@fdaengineers.com</a> and don't forget to follow us on LinkedIn (www.linkedin.com/company/geo-institute-louisiana-chapter)!

Thank you for your continued dedication to our field. I am excited about what we will achieve together!



## **ASCE Government Relations Committee**

By ASCE Government Relations



#### Congress returns to address remaining priorities like WRDA 2024 and resilience investment

#### Congress returns to address remaining priorities

Early November, Congress returned from recess with several legislative priorities remaining. The final stretch of the 118th Congress, commonly referred to as the "lame duck" session, must take up several items before the new Congress starts in January. One of the top priorities is passing a continuing resolution to ensure the federal government remains open before the statutory deadline of December 20th.

Congress will need to take up a disaster relief package to aid states and communities affected by Hurricanes Helene and Milton, which devastated multiple states along the Eastern and Gulf Coasts this fall. Also on Congress's radar is the final passage of the 2024 Water Resources Development Act, which would authorize new water resources projects and studies for the U.S. Army Corps of Engineers and could potentially contain multiple ASCE policy priorities.

Finally, Congress will need to take action to reauthorize the National Earthquake Hazard Reduction Program and the National Windstorm Impact Reduction Program, both of which support research into the impacts of earthquakes and wind hazards on the nation's infrastructure and efforts to improve infrastructure resilience against these hazards. To learn more about these important legislative priorities, read our blog post https://bit.ly/4hRDN39 . For more: https://infrastructurereportcard.org/

#### Leadership for the 119th Congress takes shape

On Wednesday, November 13th, Senate Republicans elected Sen. John Thune (SD) to lead their party in the chamber for the 119th Congress. Thune defeated Sens. John Cornyn (TX) and Rick Scott (FL) in an election conducted by secret ballot to succeed longtime Senate Republican leader Mitch McConnell (KY), who will be stepping back after 18 years leading his party in the Senate. Senator Thune's top lieutenants were also chosen on Wednesday: Sen. John Barrasso (WY) will serve as whip, Sen. Tom Cotton (AR) as conference chair, Sen. Shelley Moore Capito (WV) as Policy Committee chair, and

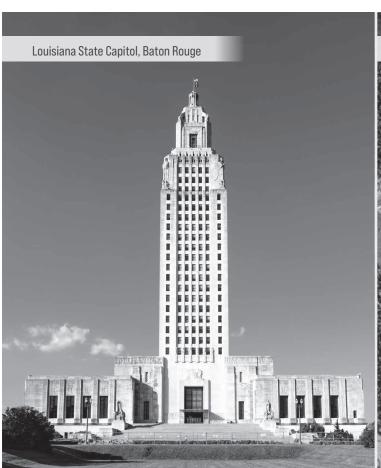
Sen. Tim Scott (SC) will chair the GOP campaign arm, the National Republican Senatorial Committee. The selection of new leadership caps off Republicans securing a 53-seat majority in the Senate for next year's Congress earlier this month.

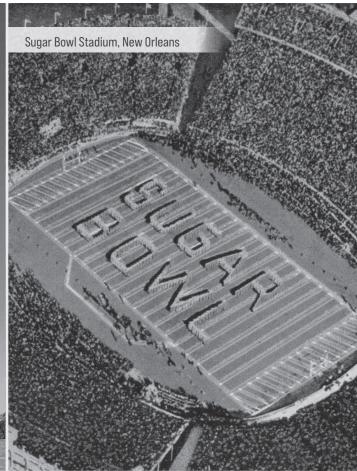
House Republicans also held leadership elections for the new Congress. Speaker Mike Johnson (LA-4) was reelected without opposition to lead his party in the lower chamber. His leadership team will be comprised of Reps. Steve Scalise (LA-1) and Tom Emmer (MN-6), who were reelected by voice vote to serve as Majority Leader and Majority Whip, respectively. They will be joined by Rep. Lisa McClain (MI-9), who was chosen to serve as Conference Chair.

#### Trump names nominees to lead key agencies

This week, President-Elect Donald Trump announced nominees to lead several key agencies. On Monday, Trump announced his selection of former Rep. Lee Zeldin (R-NY) to serve as the next Administrator of the Environmental Protection Agency (EPA). Trump's announcement indicated his intention for Zeldin to lead deregulation efforts to benefit businesses while simultaneously "maintaining the highest environmental standards." Zeldin, who served on the Bipartisan Climate Solutions Caucus while in Congress, has expressed previous doubts about the severity of climate change. As EPA Administrator, Zeldin would oversee several critical programs under the Clean Water Act, Safe Drinking Water Act, and the Clean Air Act.

On Tuesday, Trump announced his selection of South Dakota Gov. Kristi Noem (R) to serve as Secretary of Homeland Security. If confirmed, Noem would oversee the multi-billion-dollar department with more than a quarter of a million employees. Noem would be responsible for agencies like the Federal Emergency Management Agency (FEMA), which supports mitigation and response efforts to natural disasters and extreme weather events, and other programs and initiatives intended to enhance infrastructure and climate resilience.

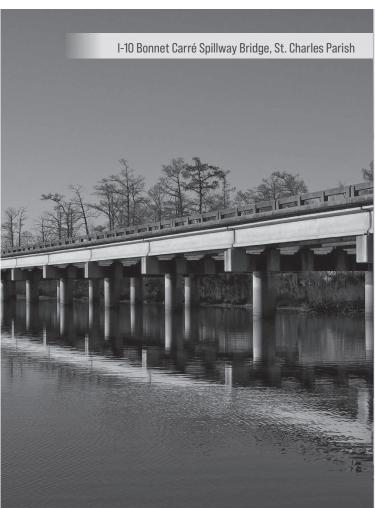




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## **ASCE-T&DI Louisiana Chapter News**

By Ronald Schumann, Jr, PE, Chairman



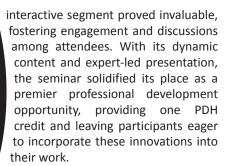


Ronald Schumann, Jr, PE T&DI Chair

Advanced Surveying Technologies Seminar a Resounding Success

The Advanced Surveying Technologies
Seminar, hosted by the Louisiana Chapter of
ASCE's Transportation & Development Institute
(T&DI) on November 7, 2024, was a highly successful
event. Held at LSU's Patrick F. Taylor Hall, the seminar
attracted its full capacity of 100 participants, all eager
to explore cutting-edge technologies like photogrammetry,
LiDAR, and sonar. Led by the esteemed Brad Holleman, PLS, PE, the
seminar provided attendees with a comprehensive understanding
of how these tools revolutionize transportation planning and
design by delivering precise data and optimizing project workflows.
Attendees praised the in-depth technical insights and practical
applications demonstrated during the session, highlighting the
event's strong alignment with current industry needs.

The highlight of the evening was the hands-on technology demonstration, which allowed participants to interact directly with these advanced tools and observe their real-world applications. From creating detailed 3D models to producing bathymetric charts, the demonstration showcased the tangible benefits of leveraging photogrammetry, LiDAR, and sonar in infrastructure projects. This



#### Meet the Speaker

Brad Holleman, PLS, PE, is a seasoned professional in the fields of civil engineering and land surveying. He earned his Bachelor of Science in Civil Engineering and a Minor in Land Surveying from Louisiana State University (LSU) in 2009. Following his academic achievements, Brad obtained his Professional Land Surveyor (PLS) certification in 2012, and his Professional Engineer (PE) license in 2022.

Brad's career is marked by significant contributions and leadership within the surveying community. He served as the President of the Louisiana Society of Professional Surveyors (LSPS) in 2020 and was an active member of the LSPS Executive Board from 2016 to 2021. His expertise and dedication to the profession have earned him the prestigious Surveyor Excellence Award in 2022.

In recognition of his professional excellence and impact, Brad was honored as one of the Baton Rouge Business Report's Forty under 40 in 2023. His career continues to be driven by a commitment to innovation and excellence in land surveying and serves as Senior Vice President of Surveying and Advanced Measurements at Forte and Tablada, Inc.

#### **Branch News**



#### ACADIANA BRANCH By Emily Faulk, PE, Branch President

As incoming Acadiana Branch President for the 2024-2025 year, I would like to thank Past President Rhett Hebert, PE, CFM for the hard work and dedication he has put into the Branch over the course of his time on the Board. His hard work has not gone unnoticed and we hope to keep up the momentum with continued

support and participation from our members.

The first Branch event this fall was our September luncheon which included our Awards Ceremony, Officer Installation Ceremony, and a presentation where Gina Campo with the Louisiana Office of Community Development presented an "Update on OCD Disaster Recovery Programs". We would like to congratulate all the 2024 award recipients on being recognized by their peers with such high honors. I would also like to congratulate my fellow elected board members and thank each of them for their commitment to volunteering to serve the civil engineering profession.

#### The 2024 award recipients include:

Nicholas Sonnier, PE – Outstanding Civil Engineer Grant Besse, PE - Outstanding Young Engineer Li Hui, PhD - Outstanding Civil Engineer Educator Jessica Pousson, PE - Outreach



Emily Faulk, PE President



Colten Dore, PE President-Elect



Aaron Enlund, El Secretary



The 2024-2025 Acadiana Branch Board members are as follows:

Madonna Saad, El – Public Relations / Outreach Coordinator

The branch also hosted our Annual Golf Tournament which drew

participants from both local ASCE members and the UL Student

Chapter. The UL Student Chapter also participated by setting up a

tent on the course as part of the fundraising efforts for their Gulf

Coast competition teams. The tournament has continued to be a

success over the years, and we would like to thank the participants

Looking ahead, the Acadiana Branch is planning future monthly

luncheons and a Christmas Social in December. Look for email

Jessica Pousson, PE - Calcasieu Parish Representative

**Emily Faulk, PE** – President

Aaron Enlund, EI - Secretary

Troy Breaux, PE - Treasurer

Jerry Outlaw - Director Jared Veazey, PE - Webmaster

Colten Dore, PE - President-Elect

Rhett Hebert, PE, CFM - Past President

and sponsors for their continued support.

invitations with details on future events.

Troy Breaux, PE Treasurer



Rhett Hebert, PE, CFM Past President



Madonna Saad, El Public Relations/Outreach Coordinator



Jessica Pousson, PE Calcasieu Parish Representative



Jerry Outlaw Director



Jared Veazey, PE Webmaster

**ASCE** 



BATON ROUGE BRANCH
By Jack Koban, PhD, PE, PG, Branch President

As we kick off a new board year for the Baton Rouge Branch of ASCE, I am honored and privileged to step into the role of Branch President. Since joining the board in 2019, I have seen firsthand how greatly our branch has benefitted from the leadership of the board members who have volunteered their

time and effort, and I can't thank ASCE enough for the opportunity to be a part of this group. I want to especially thank past-president Robb Jewell for another successful year of outstanding programs and guidance of our branch. Over the past year, we've had a wonderful luncheon series, a gubernatorial candidate forum, and the best-attended Bridging the Gap panel in recent memory. We also had several social events allowing for development of important professional relationships in a relaxed and enjoyable environment. I would be remiss if I didn't thank and congratulate our 2023-2024 past-president Venu Tammineni for leading the branch's efforts to organize and successfully host the statewide spring conference this past March at the Embassy Suites in Baton Rouge.

In August, ASCE Baton Rouge partnered with LES to host our fall joint luncheon at Drusilla Seafood featuring guest speakers Neal McMillin of the Louisiana Department of Energy & Natural Resources and Greg Grandy of the Coastal Protection and Restoration Authority. Together they provided an update on the work currently planned and underway build a more sustainable coastal Louisiana. Additionally, they offered a rundown of pending legislation that is currently under consideration at both the state and federal level.

On September 19 we hosted our annual Awards and Past Presidents Luncheon at Drusilla Seafood where we recognized the contributions of our past presidents and honored the achievements of our branch award winners. Those winners include:

Molly Bourgoyne, PE – Outstanding Civil Engineer
Tyler Branch, PE – Outstanding Young Civil Engineer
Dimitrios Dermisis, PhD, PE – Outstanding Civil Engineer Educator
Occie Norton, PE – Outreach
Louay Mohammad, PhD, PE, F.ASCE – Lifetime Achievement
Pressley Campbell, PhD, PE – Wall of Fame
Robb Jewell, PE – Past President



Congratulations again to all our award winners! Following the awards ceremony, former Baton Rouge Branch and former Louisiana Section President, Chris Knotts installed the new Baton Rouge Branch Officers.

#### The 2024-2025 Board for the Baton Rouge Branch of ASCE are:

Jack Koban, PhD, PE, PG – President
Joshua Olivier, PE – President-Elect
Robert Nodier, PE – Vice President
Ryan Brunet, PE – Secretary
Nafi Haque, PE – Treasurer
Sarah Berman, PE – Director of Programs
Ryan Williamson, PE – Director of Education & Younger
Member Chair

Myles Martin, PE – Director of Membership Mitchell Brooks, EI – LSU Practitioner Advisor Joyner Dreamer, PE – SU Practitioner Advisor Robb Jewell, PE – Past President

At the time of this article's publication, we will have just hosted a Mayoral Candidate Forum, and our October luncheon with special guest speaker, Congressman Garret Graves. In November we will host our final luncheon of the calendar year featuring Andrew Murrell of the City of St. George Transition District before closing out 2024 with our annual Christmas Party to be held at Bocage Racquet Club on December 14.

I look forward to representing to the best of my ability, our branch and organization over my term as branch president and it is my hope that we will continue to build a professional community that provides camaraderie, continuing education, and contributes to the public good.

One thing I forgot to mention. For the October and probably November luncheon too, we added an option to make a donation to hurricane Helene relief. All funds collected went to the Baton Rouge emergency aid coalition which I can personally vouch for.





NEW ORLEANS BRANCH
By James Williams, PE, Branch President

We installed our new Board for the upcoming 2024 – 2025 year at the August Awards Luncheon. The new board for the New Orleans Branch of ASCE includes:

James Williams, PE – President Jesse Noel, PE – President-Elect Troy Jeanfreau, PE – Vice President

Emily Adoue, EI – Treasurer
Brady Smith, PE – Secretary
Cullen Ledet, PE – Director At-Large
Adeleigh Smith, PE – Director At-Large

As the new president, I would like to thank my fellow board members for volunteering their time and efforts to support the branches continued success. The New Orleans Branch has enjoyed success in recent years thanks to our excellent team and the past presidents who continued to improve the Branch during their tenures. We will strive to continue to grow the branch and support our local community.

We did not hold our monthly luncheon in September and instead had a booth to meet our members at The Louisiana Civil Engineering Conference and Show. The return of our luncheons in October started off with a special program with a PDH presentation followed by the Louisiana Section Awards and installation of the new Louisiana Section Branch. The presentation was given by Dr. Ioannis Y. Georgiou, PhD, PG; Director, Coastal and Deltaic Systems Modeling at the Water Institute.

We hosted an Open House/Social on October 24, 2024 at Wrong Iron in New Orleans, LA. This event was meant to encourage greater participation from our members by introducing them to the various working committees of the Branch.

We look forward to our upcoming events including the Annual Joint Christmas Party and our continued monthly luncheons.

To stay updated with the New Orleans Branch, we encourage you to follow ASCE New Orleans on Facebook or LinkedIn (@ asceneworleans) and visit our website at www.asceneworleans.org.

You can always reach out to us at ASCEneworleans@gmail.com with any inquiries or suggestions.



ASCE New Orleans Branch 2024-2025 Board. Left to right (top row) – Cullen Ledet, Director-At-Large; Ayan Mehrotra (Past President), Jesse Noel (President-Elect), Troy Jeanfreau (Vice-President), Brady Smith (Secretary) Left to right (bottom row) – Emily Adoue, Treasurer; James Williams, President; Adeleigh Smith, Director-At-Large



October 2024 Luncheon – Ioannis Y. Georgiou, PhD, PG; Director, Coastal and Deltaic Systems Modeling at the Water Institute



## SHREVEPORT BRANCH By Thomas Jenkins, PE, Branch President

The ASCE Shreveport Branch serves the parishes of Bienville, Bossier, Caddo, Caldwell, Catahoula, Claiborne, DeSoto, East Carroll, Franklin, Grant, Jackson, LaSalle, Lincoln, Madison, Morehouse, Natchitoches, Ouachita, Red River, Richland, Sabine, Union, Webster, West Carroll, and Winn.

#### Please welcome our new officers for the 2024-2025 year!

Thomas Jenkins, PE, M.ASCE – President Victor Bivens, EI, A.M.ASCE – Past President Tanner Hines, A.M.ASCE – Vice President Chandler Warren, A.M.ASCE – Secretary Amanda Gordon, EI, A.M.ASCE – Treasurer



Thank You for a Successful 2024 ASCE Shreveport Branch Golf Tournament!

On behalf of the ASCE Shreveport Branch, we would like to express our deepest gratitude for the incredible turnout and support for our 2024 Annual Golf Tournament. It was a wonderful day filled with camaraderie, fun, and a shared commitment to advancing civil engineering in our region.

We extend a special thanks to our amazing sponsors whose generosity made this event possible:

3 Gen Construction, AFJMC, Ardaman and Associates, Delta Process Equipment, EJ, EJES, ETEC, Fluid Process, Forte and Tablada, Goldman Geotechnical Consulting, LLC, Gulf States Engineering, Halff, Industrial Fabrics, Norwood Hills Golf Club, Polaris Services, Pulley Construction, QSM, Raley and Associates, Red River Pump Specialists, Inc., SGB Architects, Tensar Corporation, Technical Coating Services, Utiliserv / Fireserve, and Waggoner Engineering.

Your contributions and dedication ensure the continued success of our branch and its initiatives. We are proud to have such outstanding partners supporting the engineering profession and fostering community connections. Thank you again for being part of this fantastic event, and we look forward to seeing everyone again next year!

For more information please contact us at: asce.shreveport@gmail.com linkedin.com/company/asce-shreveport-louisiana-branch



#### **Submissions Should:**

- Encourage attendees to explore innovation and adaptive solutions
- Explore relevant topics impacting civil engineering with a key focus on sustainability and resilience
- Provide a compelling project, system integration, or failure!
- Highlight innovative and new solutions/systems for the current and future workforce, emerging technologies, adaptation to climate change
- Illustrate equitable infrastructure planning, and nature-based solutions, to deliver more resilient and sustainable infrastructure

The ASCE Convention program is designed to have inspiring, integrated, multi-cultural, technical, and educational components to meet the needs of the profession. Click here for all the details.

Prepare your proposal and learning objectives now, and submit your ideas by **January 5**. We look forward to hearing from you!

Please note that this year we will be offering presenters the optional opportunity to submit a paper alongside their presentation to be published in proceedings following the conference.

## — Calendar of Events —

#### January-February

Jan 31 - Feb 1 Regions 1, 2, 4 & 5 MRLC in Memphis, TN

#### March

Mar 26-28 Legislative Fly-In in Washington, DC

## Let us know about your upcoming ASCE events to be featured here. Email: nedra@atomicblondeaux.ai

Events are constantly being updated online:

For ASCE Society events please see online: https://www.asce.org/conferences\_events/ https://www.asce.org/student conferences/

For ASCE Acadian events please see online: http://branches.asce.org/acadiana/events

For ASCE Baton Rouge events please see online: http://branches.asce.org/baton-rouge/events

For ASCE Shreveport events please see online: https://www.facebook.com/ASCEShreveport/

For ASCE NOLA events please see online: http://asceneworleans.org/events/

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

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