



AIPG GEORGIA SECTION

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September 2017

NEXT MEETING

Use of MODFLOW-NWT To Simulate Coal Ash Ponds and Evaluate Closure Options

Speaker: Josue Gallegos, P.G., Geosyntec Consultants

When: Friday, September 22, 2017 at 12 noon to 1:00 PM

Where: Geosyntec Consultants – 1255 Roberts Blvd., NW, Suite 200
Kennesaw, GA 30144

AIPG Members and guests call or email by Thursday September 21, if you plan to attend
[Call or Email Greg Cherry at gccherry@usgs.gov or (678) 924-6632]

PRESIDENTS MESSAGE

Over the summer I sent out an email to our section members announcing my retirement from the EPD and my desire to have someone take over our Georgia Section as president starting in 2018. I'm not going anywhere right of way so I will help in any way possible and will continue to work with our planned conference in September 2018. This is a great opportunity for someone to take on a leadership role. Our upcoming meeting is a continuation of teaming with Georgia Ground Water Association in luncheon talks and I hope more will attend. We plan to have a talk every other month and rotate between the USGS office in Norcross and one on the northwest side of town. If your office is big enough to host one of these talks, please contact me.

With the fall semester starting it would be helpful if students from the different chapters contact me on the names and email of the officers for 2017-2018. Last fall we had two meetings with chapter officers to tell them the advantages of being an AIPG chapter and what we can offer them.

Below is the announcement for the Student Career Day at our national conference in Nashville. Association of Women Geoscientists will have two workshops followed by career talks sponsored by AIPG. Students will have a chance to meet a large number of professionals. If you would like to go for the day we will help pay for your gas money.

This fall we already have planned to do two drilling demonstrations at Berry College and Georgia Southwestern State University. Once again Jim Fineis is providing his company for the drilling. We have also been asked to put together an Environmental Phase I class at Berry College and we may offer it later in the fall for all our student members. Also for our professionals we hope to have a class on the new risk-based program for the Underground Storage Tank Management Program.

AIPG National Convention Nashville, TN September 23-26, 2017

Student Career Day

Saturday, September 23, 2017 - \$15 for Students - [pdf form](#)

Nashville Airport Marriott 600 Marriott Drive Nashville, TN 37214

Breaks, Lunch, and Reception included.

Presented by the American Institute of Professional Geologists and Co-Hosted by the Association for Women Geoscientists

Support this event by making a [Donation to the Foundation of the American Institute of Professional Geologists](#)

- 9:00 am – 10:30 am: AWG Workshop 1 – **Writing an Effective Resume or Curriculum Vitae for a Career in the Sciences**

Are you in search of advice for how to write a great resume? If so, come join us at the AWG Resume Writing workshop! A well-written resume is essential to landing a position in the career field you desire, but a common misconception is the idea that 'one resume fits all' when applying to different jobs. This workshop will address the basic components of a resume and CV, common FAQ's on what should and should not be included, and how to most effectively highlight your accomplishments and experience. The instructors will also cover the differences in resumes based on the position you are applying to (i.e. industry, academia, government, non-profit, etc.) and teach you how to tailor your own resume for different career paths.

- 10:30 am – 11:00 am: **Break**
- 11:00 am – Noon: AWG Workshop 2 – **Getting to Fair: The Impact of Implicit Bias on Decision-Making**

Implicit biases are automatic, subconscious cognitive predispositions that silently impact our understanding, actions, and decisions in a wide range of contexts. Because these "mental shortcuts" arise naturally from our life experiences and cultural influences to help us efficiently navigate our worlds, all human beings have some forms of implicit bias ("favorable" or "unfavorable") that research suggests may not match our explicit attitudes or beliefs. Left unexamined, these biases can impact our decision-making processes in ways that cause us to act against our own beliefs. For example, did you know that even women geoscientists write stronger letters for male candidates, and were found to prefer equivalent job candidates with male names? This workshop will invite participants to engage in a

confidential, respectful environment in which to learn about the concept of implicit biases and the ways in which those biases operate, as well as to investigate some of the factors that might lead each participant to have a unique predisposition and set of expectations when considering things such as letters of recommendations, job applications, or awards/scholarship applications.

- Noon – 1:00 pm: **Lunch with Professionals in the Geosciences and a Panel available for questions**
- 1:00 pm – 1:45 pm: AIPG – **Preparing Our Workforce (POW): Thinking Differently About Geoscience Careers**
Michael Lawless, CPG, Draper Aden Associates, Blacksburg, VA

AGI's most recent publication "Status of the Geoscience Workforce 2016" illuminates today's challenges of meeting increased workforce demand with too few qualified geoscientists to fill available positions. Producing enough graduates to meet this demand is a major challenge due to most geoscience departments and programs being at capacity. Though there is high demand for geoscientists, the competition is fierce and graduates often have trouble busting into the job market as often their expectations, preparation, and positioning of their skills is not tightly aligned to employer needs.

AGI's "Preparing our Workforce (POW) Initiative" is a program dedicated to supporting students and recent graduates during their transition into geoscience careers. This talk will highlight some traditional and non-traditional geoscience occupations to help students start thinking differently about the job search. It will also emphasize the importance of integrating other interests and skills along with their geoscience training to build a meaningful career. In addition, this talk will address the importance of practicing networking and provide anecdotes and advice from non-academic geoscientists. This talk will be mostly discussion-based and introduce students to the tools they need to successfully find that first job after graduation.

- 1:45 pm – 2:30 pm: AIPG – **The Role of Geology in Today's Society**
Dennis Pennington, CPG, Wissahickon Valley Watershed, Ambler, PA

With key issues and concerns related to geological hazards, water resources, shale gas and other energy needs, the need for geologists should be growing. Also, as our natural resources are harder to develop, creativity by geologists is required to work around complex problems of location and transportation. Regulatory knowledge is key to solving geological problems and finding practical solutions to both the needs of communities and agencies to protect and preserve resources for the future.

- 2:30 pm – 3:00 pm: **Break**
- 3:00 pm – 3:40 pm: AIPG – **Vapor Intrusion 101**
John Stewart, CPG, ESC Carolinas, Greensboro, NC

Vapors from volatile organic compounds (VOCs) located in the soil and/or groundwater can enter buildings through cracks, joints, and other opens in buildings creating possible health hazards for the occupants. One of many tasks a young professional may be required to learn and perform is a vapor intrusion or "soil gas" investigation. This primer on vapor intrusion investigations will provide a basic understanding of what vapors are, where they may originate, and the various ways in which you may conduct an investigation. We will discuss how to interpret the results of the investigation and ways to possibly mitigate the VOCs if they pose a potential health risk.

- 3:40 pm – 4:20 pm: AIPG – **Geology Employment Opportunities with State Agencies**
Ronald Wallace, CPG, Georgia Department of Natural Resources (retired), Roswell, GA

The purpose of this presentation is to provide geology students and recent graduates insight into the various responsibilities and duties geologists have while working as state employees. Geologists working in the public sector may serve as regulators of solid and hazardous waste sites, underground storage tank facilities, surface mining, or water permitting such as withdrawal and injection permits. They may also hold positions as field inspectors, routinely checking environmental compliance records and investigating complaints by local citizens. The geologist must have knowledge of state and federal regulations and familiar with their state guidance documents.

State geological surveys also employ many geologists. The responsibilities of the surveys vary *depending on needs of the state, legislative directives, and traditions within the surveys*. Most surveys are non-regulatory and provide scientific research, geologic data and maps, and reports to the public, industry, academia, and government agencies. An understanding of the geology of the state is necessary to make decisions on natural resources such as oil, natural gas, coal, and geothermal energy; water issues related to quality and quantity; and mineral resource development. Surveys typically develop environmental and geological hazards reports and maps which may include earthquake hazard zones, landslide and rock fall areas, sink holes, adverse soil conditions, earth fissures, areas prone to flash floods and debris flows, shoreline and stream erosion, radon, arsenic, and other natural occurring minerals. Surveys also provide outreach on important issues to the public, local, state and federal agencies, and industry.

The state Department of Transportation geologist positions include the following tasks: investigate bridge foundations, classify or survey soils, help identify and mitigate geologic hazards, such as slope failure, sink holes, and river migration, and conduct environmental investigations to determine the extent and severity of contamination. In many cases a geologist will monitor and test the raw materials to be used for bridge and road construction. Most of this work is conducted in collaboration with large aggregate producing quarries across the state.

- 4:20 pm – 5:00 pm: AIPG – **Strategies for Easing the Transition from College Student to Young Professional Geoscientist**
Brandy Barnes, YP, Integrity Drilling and Geophysical Services, Groveland, FL

Many students face obstacles in their last years of college or post-graduation when entering geoscience fields as a young professional. Using college resources and maintaining (or joining) a professional organization can present opportunities to post-graduate students while also building confidence for the transformation into the workforce. What college preparations can lead to a successful transformation into a professional? How can networking and mentorships contribute to my success out of college and into a career? Are there any benefits to maintaining membership in a geoscience professional organization? Answers to these questions will not only provide a better perception to upcoming young professionals entering their career, but also to professional mentors seeking to understand current conditions of obtaining an entry-level position. Young professional excellence and growth in the geosciences starts at the beginning of their career and will benefit our geological community.

- 5:00 pm – 6:30 pm: **Student and Professional Networking Event** (including cash bar and light snacks)

FEDERAL DOCUMENTS

House and Senate committees approve five appropriations bills for DOE, CJS, and Interior and Environment

The House of Representatives has been moving Fiscal Year (FY) 2018 budget bills out of committee more quickly than the Senate. The full House has passed one bill, for the Department of Defense; no appropriations bills have reached the Senate floor yet. Congress and the President must agree a budget or a Continuing Resolution by September 30 to avoid a government shutdown.

House Energy and Water Development, and Related Agencies

The House Appropriations Committee approved FY 2018 funding for the Department of Energy (DOE), providing the DOE with \$29.8 billion, which is \$898 million below the FY 2017 enacted level and \$1.8 billion above the President's budget request. The House allocated \$634.6 million to Fossil Energy Research and Development, a \$33.4 million decrease below the FY 2017 level and \$354.6 million above the President's request. The bill provides flat funding for the Office of Science at \$5.3 billion, although it eliminates funding for Advanced Research Projects Agency-Energy (ARPA-E).

House Commerce, Justice, Science, and Related Agencies

The House Appropriations Committee approved \$54 billion in discretionary funding to Commerce, Justice, and Science agencies for FY 2018. The total discretionary funding is \$2.6 billion below the FY 2017 level but \$4 billion above the President's budget request. The bill funds the National Science Foundation (NSF) at \$7.4 billion, a decrease of \$72 million from the 2017 enacted level but a \$748 million increase above the President's request. The bill does not reduce Research and Related Activities at NSF, funding it slightly above the FY 2017 enacted level. The bill also provides the requested \$175.8 million for continued development of NASA's Landsat-9 mission, which is due to launch in 2020.

House Interior, Environment, and Related Agencies

The House Appropriations Committee approved a \$31.4 billion FY 2018 Interior and Environment Appropriations Bill, which is \$824 million below the 2017 enacted level and \$4.3 billion above the President's request. The bill provides \$10.2 million for the USGS Earthquake Early Warning System, a project that the President's budget proposal would have eliminated entirely. The FY 2018 appropriations bill also provides \$24.4 million to USGS for the National Cooperative Geologic Mapping Program (NCGMP) and \$22.5 million for 3DEP (3D Elevation Program) National Enhancement.

Senate Energy and Water Development, and Related Agencies

The Senate Appropriations Committee approved \$31.4 billion in FY 2018 funding to the Department of Energy (DOE), a \$718 million increase from the FY 2017 enacted level and a \$4.1 billion increase above the President's budget request. The bill funds the Office of Science at \$5.5 billion,

\$138 million above the FY 2017 enacted level and \$1 billion more than the President's request. Within the Office of Science, the Advanced Research Projects Agency-Energy (ARPA-E)—which funds research and development of high-impact energy technologies—is funded at \$330 million, a \$24 million increase above the FY 2017 level. In contrast, the House appropriations bill eliminated all ARPA-E funding for FY 2018.

Senate Commerce, Justice, Science, and Related Agencies

The Senate Appropriations Committee approved a Commerce, Justice, and Science FY2018 Appropriations Bill for \$53.4 billion, which is \$3.2 billion below the FY 2017 enacted level and \$4.4 billion above the President's FY 2018 budget request. The bill provides \$19.5 billion for the National Aeronautics and Space Administration (NASA), including \$100 million for education programs that were otherwise slated for elimination in the President's budget request. The National Oceanic and Atmospheric Administration (NOAA) is funded at \$5.6 billion, a \$85 million decrease from the FY 2017 enacted amount. NOAA's Operations, Research, and Facilities are funded at \$3.4 billion, which is \$452 million above the President's budget request.

Secretary Zinke signs order to streamline permitting for onshore resources development

Interior Secretary Ryan Zinke signed Secretarial Order 3354 on July 6 to promote energy exploration and development through better management of leasing programs for onshore oil and gas resources and solid mineral resources on federal lands. The Order directs the Bureau of Land Management (BLM) to hold quarterly lease sales, as outlined in the Mineral Leasing Act of 1920, and to identify additional options to enhance the leasing programs. The Order also intends to streamline the permitting process overall.

The Mineral Leasing Act requires oil and gas lease sales, where eligible, to be available at least quarterly or more frequently if determined necessary by the Secretary of the Interior. According to Secretary Zinke, multiple quarterly federal lease sales have been postponed or cancelled since 2009.

The Order aligns with the Trump administration's goal to make America energy dominant, as announced by Energy Secretary Rick Perry in the White House Daily Briefing on June 27. Over the past decade, the total amount of onshore and offshore oil production on federal lands has fallen by 10%, while oil production on private and state lands in the same time frame has more than doubled. Secretary Perry expressed his belief during the briefing that unleashing the energy potential in this country with a diverse energy portfolio will lead to job growth and economic expansion in every sector.

Atlantic offshore oil and gas development discussed in House

The House Natural Resources Subcommittee on Energy and Mineral Resources held an oversight hearing on July 12 to evaluate the potential development of offshore drilling on the Outer Continental Shelf (OCS).

Earlier in the year, President Donald Trump issued an executive order "Implementing an America-First Offshore Energy Strategy," which authorizes the Department of the Interior (DOI) to begin oil and gas leasing on the OCS. Following the Executive Order, Interior Secretary Ryan Zinke issued

Secretarial Order 3350 to implement the president's order and establish regulations for the leasing process.

While offshore drilling has long been a part of American energy production, it is currently limited to the Gulf, North Atlantic, and West coasts. One provision of the secretarial order is to expedite the consideration of seismic permitting applications in the Atlantic. A witness at the hearing, Dr. James Knapp, pointed out in his testimony that the Mid- and South Atlantic regions have never been adequately explored for oil with commercial seismic surveys.

Several representatives from coastal states, however, were hesitant at the prospect of leasing on the Mid- and South-Atlantic OCS. Representatives Niki Tsongas (D-MA-3) and Anthony Brown (D-MD-4) voiced their concerns about the impact OCS energy production would have on the tourism, recreation, and fishing industries for their respective states.

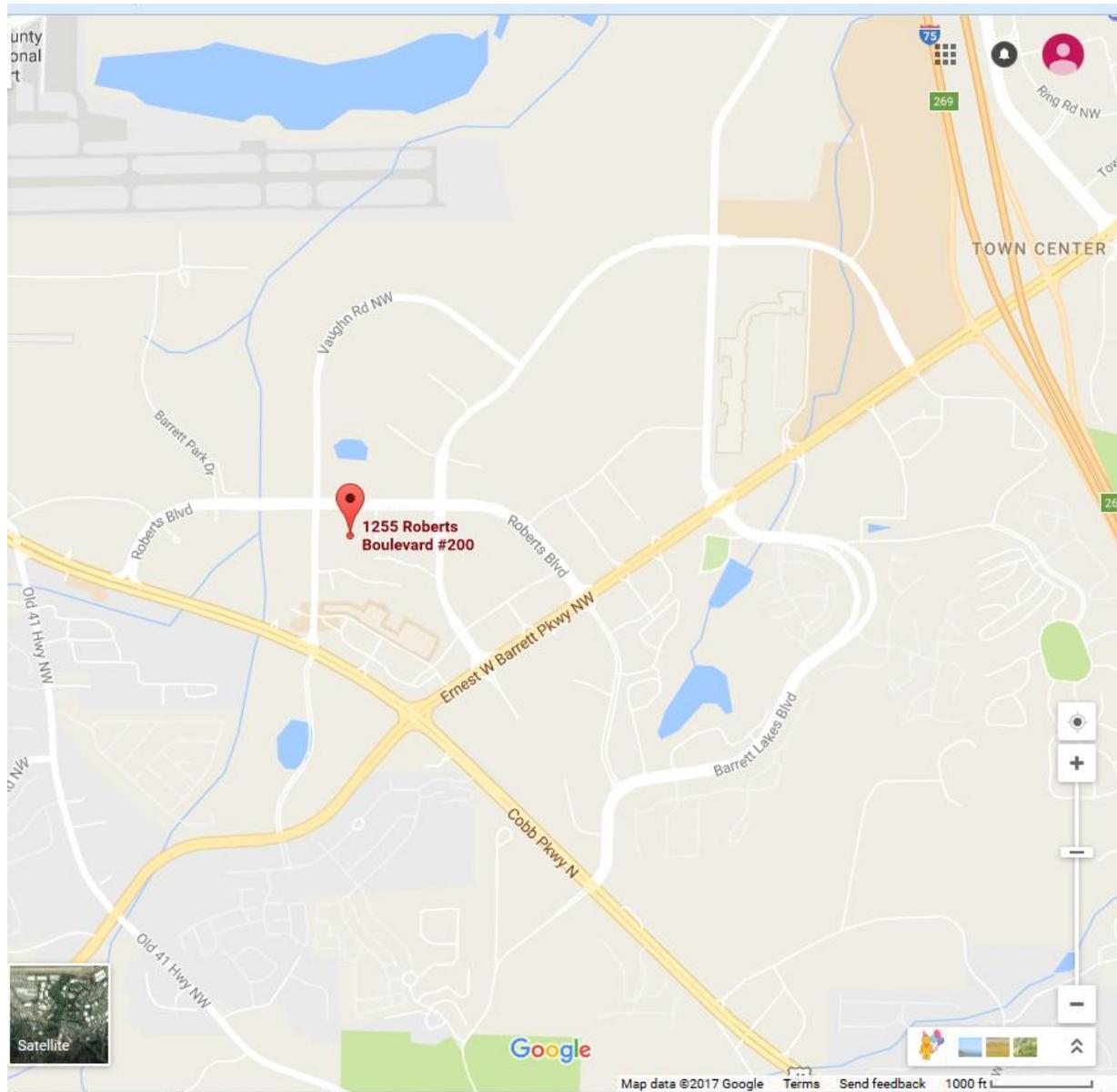
NEXT MEETING

Meeting Topic

In 2014, the EPA published the Disposal of Coal Combustion Residuals from Electric Utilities rule (CCR rule). This CCR rule prompted many utilities to begin the process of closing active coal ash ponds at various power plants. Geosyntec Consultants was hired by a southeastern power utility to help evaluate possible closure options for two ash ponds at one of their power plants. The site was complex due to the presence of a steeply dipping fault, complicated geologic units, and steep hydraulic gradients. As part of the evaluation, Geosyntec conducted a field investigation to create a conceptual model of the Site, and then used the conceptual model to develop a 3-D MODFLOW groundwater model of the Site and the two ash ponds. The MODFLOW model was then used to assist the engineering team in designing and evaluating the efficacy of various closure options such as engineered caps, slurry walls, and pumping wells. This project illustrates how MODFLOW can be used as a tool to successfully model coal ash ponds with complex hydrogeology, and evaluate closure scenarios for coal ash pond closure.

Biographical Sketch:

Josue Gallegos is a hydrogeologist, and specializes in groundwater modeling. He has been involved in numerous environmental projects including groundwater modeling, contaminant transport modeling, aquifer testing, site investigations, remediation, and groundwater monitoring programs at various Superfund and State managed sites. Mr. Gallegos has extensive experience creating models in various and challenging hydrogeologic settings including alluvial, fractured bedrock, and karst terrains. He has a B.S. in Geology from the University of Texas at Austin, and a M.S. in Geology from Florida State University. He has been with Geosyntec Consultants since 2011.



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