

Planned Presentations for 2023-2024 Jahn's Lectureship Cynthia Delaney Palomares, P.G., P.E.

Presentation No.1 - Why Join a Professional Society? (15 minutes)

The mission of a Professional Society is to educate and inform by defining and setting standards, developing professional excellence, raising public awareness and providing awards and scholarships. Both the Association of Environmental & Engineering Geologists (AEG) and the Geological Society of America (GSA) are the premier professional societies in applied geoscience fields and support the application of the practice of geology to engineering, environmental concerns, public health, and safety. Joining either of these organizations will provide resources to new members, from a network of students, young professionals, academia, practitioners and friends. (This presentation may be combined with Presentation No. 4).

Presentation No. 2 - Regulatory Requirements for Hazardous Waste Management Units and How These Requirements are Applied to a Case Study in West Texas (45 minutes)

The Resource Conservation and Recovery Act (RCRA) outlines the federal regulatory requirements that apply to Siting, Design, Operation and Closure of Hazardous Waste Management Units. Location Standards that apply to Land-based Hazardous Waste Management Units include considerations for seismic hazards and satisfactory mitigation of locations in flood-plains. Unsuitable site characteristics include prohibitions for locations in wetlands, recharge zones of sole-source aquifers and highly permeable geologic formations. A case study is provided to review location standards for permitting of a Mixed Waste Landfill in West Texas.

Presentation No. 3 - Hazardous Waste Operations and Emergency Response (HAZWOPER) Overview or “How to stay awake during HAZWOPER training?” (40 minutes)

Hazardous Waste Operations and Emergency Response (HAZWOPER) training and certification is required for onsite workers for clean-up operations at hazardous waste sites, voluntary clean-up operations, operations involving hazardous waste, and emergency response operation for releases. Pre-emergency planning includes emergency recognition and prevention, training, and communication. A summary is provided for procedures and equipment used for handling routine and emergency incidents that involve hazardous materials or at hazardous waste sites.

Presentation No. 4 - Diversity, Equity and Inclusion in the Geosciences: What Can We Do and Why Should We? (20 minutes)

According to Nature Geoscience (April 2018), there has been little progress in diversity in the Geosciences profession in 40 years. Both AEG and GSA are members of the National Science Foundation-funded Associated Societies Committed to Ending Non-

Diversity (Geo ASCEND) which includes 28 societies and is spearheaded by a Consortium of Academia and GSA. Geo ASCEND is committed to increasing diversity within the Geosciences profession. Much more can and needs to be done to encourage and support diversity in both Geoscience education and Geoscience professions. A summary of where we are in terms of diversity in the Geosciences and what we can do to increase diversity will be discussed.

Presentation No. 5 - How Climate Change Impacts Infrastructure? (45 minutes)

The terms global warming and climate change are often used interchangeably, but the two phenomena are different. Global warming is the rise in global mean temperature due to the release of heat trapping gasses like carbon dioxide and methane. Climate change is a more general term that refers to changes in many climatic factors (such as temperature and precipitation) from the global to the local scale. These changes are happening at different rates and in different ways in response to global warming. The timing and amount of rainfall is changing, which is generally resulting in more severe storms. In addition, global warming and associated climate change is shrinking ice caps, melting glaciers, causing water shortages, causing sea level to rise and increasing wildfire risk. The climate is becoming more extreme in response to global warming. As a result, infrastructure (e.g. buildings, roads, power supplies) are being impacted at an alarming rate. A record number of hurricanes, wildfires and floods cost the world \$210 billion in damage in 2020. Specific weather related impacts, and potential mitigation to infrastructure will be discussed.

Presentation No. 6 – From the File Room to the Field of Applied Geology, A Career Discussion (40 minutes)

There are many different career path options in the fields of Environmental & Engineering Geology. Career path considerations may include geographic location, family/work balance and advancement opportunities. As a non-traditional student, I'll briefly discuss my career path as an Engineering Geologist and Environmental Engineer over the last 30 years and the path I took to get there. I'll then highlight various career path options that are available for recent graduates and young professionals, from employment as a consultant for a consulting firm to serving as a public servant for a government agency. I'll also discuss the importance of Geosciences Professional Licensure and the current requirements to obtain and retain licensure.