December 9, 2016

Global Climate Change is Dependent on More than the Combustion of Fossil Fuels
Dr. Douglas Carlson, Louisiana Geological Survey - LSU

Abstract: Recent discussion within the news appears to present the idea that climate change is a result of fossil fuel combustion and associated increase of carbon dioxide (CO2). It is really far more complex. As with many natural systems climate change is dependent on many factors among these are: Aerosols, Milinkovic Cycles, Other greenhouse gases, Ozone, Solar irradiance cycles of various lengths, and Surface Albedo. Aerosol particles have both natural and anthropogenic sources. Milinkovic cycles include cycle of axial tilt, eccentricity, and precession. Other greenhouse gases include: methane, nitrous oxide, and other halocarbons. The most familiar cycle of solar irradiance is the approximately 20 year sunspot cycle often correlated with droughts throughout the Midwest and Great Plains of the United States. However, there many others that are decades to centuries long. There is a large amount of evidence that indicates that climate change is dependent on other factors than fossil fuel combustion and CO2: 1) climate change elsewhere in the solar system; 2) climate change throughout recorded history prior to the industrial revolution; 3) climate change throughout geologic time; and 4) correlation between CO2 concentration and past temperature that is not strong. There is a brief examination of the relationship between temperature and green-house gas concentrations for polar ice samples that have recorded atmospheric condition during six warm periods during the Holocene including current modern period and five earlier ones. A variety of atmospheric parameters will be considered by correlation of global temperature with concentration of aerosols, CO2, methane (CH4), nitrous oxide (N2O) and other parameters. Two indicators of solar activity were also considered for correlations with: global temperature: production rates of radioactive beryllium 10, and sunspot activity. As a result of this examination there is clear evidence that there are other drivers influencing global climate than just CO2 concentration. These influencing factors can be classified into three categories: 1) solar variability; 2) variations in earth's rotation and revolution about the sun; and 3) variability of aerosols, other atmospheric gas concentrations and albedo. The first two of these categories are only a function of natural variations while the third has been influenced by both natural and anthropogenic processes.

Biography: Dr. Doug Carlson has been with the Louisiana Geological Survey for several years, located on the campus of Louisiana State University. He is a member of the Baton Rouge Geological Society and has served on the BRGS Board of Directors for many years and in all capacities.

November 11, 2016

You Are What You Drink! The Geochemistry of Baton Rouge Groundwater
Dr. Jeff Hanor, Department of Geology and Geophysics at LSU

Abstract: The groundwater in the Baton Rouge area is dominated by sodium bicarbonate, making it very soft. It has a pH of 8 to 9 and is thus slightly alkaline rather than acidic. It also has very low levels of dissolved calcium, iron, and manganese and is generally free from hydrogen sulfide. What are the geochemical processes that have given rise to this very high quality groundwater? This talk will try to answer that question!

Biography: Jeff Hanor is an Emeritus Professor in the Department of Geology and Geophysics at LSU. He received his Ph.D. from Harvard University and arrived at LSU in 1970 after a stint as a post-doc at the Scripps Institution of Oceanography.

October 14, 2016

The Making of Geologic Maps!

Mr. Richard McCulloh, Mr. Paul Heinrich, & Mr. John Snead, Louisiana Geological Survey

Abstract: They will be talking about making geologic maps, both fom the geologist's and cartographer's view point.

September 9, 2016

Ethics for Geoscientists and Engineers
Mr. Bill Schramm, Louisiana Department of Environmental Quality

Abstract: Ethics has many definitions; it is a study of the rules of human behavior, the standards of right and wrong, that part of science and philosophy dealing with moral conduct, duty, and judgment, the voluntary actions specifically taken by an individual with sufficient knowledge of the options available. The development of these "rules" depends on the formative influences on the individual. They derive from the ethnic culture, predominant religion, educational philosophies and personal life experiences. Professional ethics incorporates and expands on these societal rules for a well-defined group of specialized, highly trained and educated persons in a specific career field. The ethics for professionals are particularly developed to address issues peculiar to that field. Examples are: medical, legal, police, military, science, and business.

Biography: Bill is a 25-year veteran of the Louisiana Department of Environmental Quality. As a Geologist he has worked closely with industry, consultants and private citizens to investigate and/or remediated over 3000 contaminated sites. He now supervises a staff of Geologists and Remediation Specialists in the Underground Storage Tank and Remediation Division. Since 2005 he has been an Adjunct Instructor on the staff of the Department of Geosciences at the University of Louisiana-Lafayette and serves on numerous Graduate Thesis Committees. Bill holds a BA and MS in Geology and a Teaching Certification

for K-12 in Science and Earth Science. He is a member of the Baton Rouge Geological Society and has served for many years on the Board of Directors in many capacities. He also collects alphabets such as AAPG, GCAGS, LGS, NOGS, LEHA, NRA, USPA and EAA.

August 12, 2016

Cancelled due to the Great Flood of 2016

July 8, 2016

The Atchafalaya Experience: Flora, Fauna, & Geology
Coerte A. Voorhies, Jr. and Kim B. Voorhies

Abstract**:** Louisiana's answer to the Grand Canyon is the Atchafalaya River Basin. The name "Atchafalaya" comes from Choctaw for "long river". Stretching 137 miles from near Simmesport to the Gulf of Mexico, the Atchafalaya River is America's largest river swamp. It contains almost one million acres of America's most significant bottomland hardwoods, swamps, bayous, and backwater lakes. It ranks among the top ten wilderness areas in the United States. Vistas have the appearance of a pristine cypress and mixed woods swamp. On any given day, one can see beaver, nutria, otters, mink, deer, squirrels, many different species of birds, snakes, frogs, alligators, and more.

Biography**:** Coerte Voorhies, Jr. is a consulting geologist (semi-retired) and has knowledge of the geology, history, geography and the various ethnic cultures of South Louisiana. Mr. Voorhies is a founding member of the Lafayette Geological Society. Kim Voorhies is retired military and has hunted and fished, as well as accompanied his father, throughout the marshes and swamps of South Louisiana for many years. The Voorhies are a father-son team and have many years of experience within the Basin, and are knowledgeable of the fauna and flora of the south Louisiana ecosystems. Together, they own and operate The Atchafalaya Experience - A Swamp Tour. They reside in Lafayette, Louisiana.

June 10, 2016

From biostratigraphy to forensic and climate change: the many aspects of palynological research at the LSU Center for Excellence in Palynology
Dr. Sophie Warny, Department of Geology & Geophysics, Curator, Museum of Natural Science , Louisiana State University

Abstract**:** Palynology is the study of an array of organic-walled microorganisms (e.g., spores, pollen, dinoflagellate cysts, fungal debris, acritarchs, chitinozoans, etc.). These entities, collectively called

palynomorphs, were and are produced in prodigious quantities by a variety of terrestrial, aquatic, and marine organisms. Their resistant organic walls assure that they are preserved in sediments and rocks. In addition to traditional biological studies (evolution, extinction, diversity, morphological studies), palynomorphs are used in a variety of purposes, some of the most common ones being as paleoclimate index, as paleo-environmental markers, as a biostratigraphic tool for oil exploration, as a forensic tool to assist in criminal investigations, and in archaeological studies and investigations.

Biography**:** Sophie Warny is an Associate Professor of Palynology in the department of Geology and Geophysics and the Curator of Palynological Collection at the Museum of Natural Science (MNS), both at Louisiana State University in Baton Rouge. She received her Ph.D. from the Université Catholique de Louvain, in Belgium working under the direction of Dr. Jean-Pierre Suc. She is the director of The Palynological Society Center for Excellence in Palynology (CENEX) as established by the American Association of Stratigraphic Palynologists (AASP) and LSU. CENEX focuses on various aspects of Mesozoic and Cenozoic palynological research including biostratigraphic studies in collaboration with the oil and gas industry in the U.S., palaeoceanography and paleoclimate reconstruction, and forensic. CENEX currently hosts one post-doctoral fellow, two doctoral students, and four MS students. The majority of Warny's former graduate students are employed in the oil and gas industry in Houston and London. More information on her research program and publications can be found at www.geol.lsu.edu/warny.

May 13, 2016

The Challenge(s) of Surface-Geologic Mapping in Louisiana
Richard P. McCulloh, Louisiana Geological Survey

Abstract**:** Most American geologists traditionally have been taught field techniques in settings with reasonably old and nakedly exposed strata, in geological terranes characterized by ancient, hard rock that are situated in semiarid or arid climates (e.g., Colorado, west Texas, Wyoming). The reason seems obvious: a relative lack of obstacles to observing, and thus to teaching, facilitates learning anything new. Quaternary strata in such terranes tend to be of minor if not negligible volume and geologic significance.

The value of learning in such an environment for the sake of introduction and attempted mastery of basic concepts and skills is indisputable. At the other end of the geologic and climatic spectrum, however, one finds that few of the specific skills learned and practiced at most geology field camps in the U.S. can be transferred directly to mapping exercises in Plio-Pleistocene terranes in tropical and subtropical climates. The surface of Louisiana, with dominantly Quaternary strata and a humid subtropical climate, represents one such terrane. Exposures are scarce and those that occur are largely ephemeral, as is the case in many coastal-plain settings, necessitating a completely different approach to the geologic-mapping enterprise than that likely experienced at field camp.

These natural difficulties of surface mapping in our state have been exacerbated by a particular cultural overlay during the past century: the advent of oil and gas exploration here led to a disproportionate focus on the deep subsurface, which eclipsed interest in surface geology. Additionally, the geological profession underwent its own culture change over the past half century, during which diversification of research techniques led to a relative deemphasis of field mapping, once the essential and main

technique for conducting geological research.
Given these special circumstances and the research climate of recent decades, Louisiana Geological Survey (LGS) mappers have keyed primarily on geomorphic signatures of Quaternary and Pliocene units in the conduct of surface-geologic mapping projects. These stratigraphic units successively incise each other in the area updip of the hinge zone of northern Gulf basin subsidence, an area covering most of the onshore region. In this area they are terraced, and their depositional surfaces show a spectrum of age-related characteristics, including elevation range, relief, slope, and degree of dissection. As a result, Pliocene and younger stratigraphic units show distinctive geomorphic attributes relative to older strata and to each other. The most efficient strategy, therefore, is to (1) create new source mapping of Plio-Pleistocene and Holocene units based on geomorphic aspects using the best topographic data available; (2) integrate the newer mapping of Plio-Pleistocene units with legacy mapping of Tertiary "bedrock" units (where present); (3) modify the resulting contacts based on observations made during strategic field checking; and (4) recompile at the selected target scale (larger than the intended scale of presentation if developing the data in a GIS). Application of the above methodology, supported by selective checking of interpreted surface contacts against relevant subsurface information where possible in problem areas, has been LGS practice over the past two-plus decades. This time frame essentially corresponds to the duration thus far (22 years) of the STATEMAP component of the congressionally authorized National Cooperative Geological Mapping Program, which has been the principal sponsor supporting statewide completion of 30 x 60 minute geologic quadrangle coverage at 1:100,000 scale.

Biography**:** Richard P. McCulloh holds a B.S. degree in geology from Oklahoma State University and an M.A. degree in geology from the University of Texas at Austin. He joined the Louisiana Geological Survey (LGS) in Baton Rouge after working for two years as a geologist for Conoco Minerals Inc. in the south Texas uranium district. At LGS he has been involved in mapping and compilation of surface geology at scales ranging from 1:24,000 to 1:500,000, as well as other surface and subsurface investigations on topics relating to growth faults, shale-filled channels in the Wilcox Group, emergent salt domes in coastal Louisiana, and structural geomorphology as reflected in stream nets and alluvial courses.

April 8, 2016

The Licensing of Geoscientists in Louisiana 2016
John E. Johnston III, PG, CPG , Chairman, Louisiana Board of Professional Geoscientists

Abstract**:** The Louisiana Legislature passed Act 974, the "Louisiana Professional Geoscience Practice Act," during the 2010 session, establishing the Louisiana Board of Professional Geoscientists, which has since implemented licensing of Professional Geoscientists and administered the Act. The Board consists of nine members, at least six of whom are to be (and seven of whom are) licensed professional geologists and at least one of whom is to be a licensed professional engineer. There are many exemptions to Act 974. The bill originally had a one-year grandfathering period, but this was extended until December 31, 2014, after which date every applicant must pass the ASBOG examination, a nationally-standard

geoscientific examination, in order to qualify for a license. Unless exempted, no unlicensed person can legally engage in the practice of geoscience, nor can they legally take responsible charge of any government-required geoscientific report or any portion thereof, under penalty of law. Fifteen hours of continuing education per year are required to maintain a license, one hour of which must be ethics. A maximum of twelve hours per year can be acquired from regular geological society meetings. For the details, and a sample spreadsheet to use to keep track, please visit the LBOPG website.

Biography**:** John E. Johnston III received a undergraduate and graduate degrees in Geological Sciences from The University of Southern California and The University of Texas, He has over forty years of experience in energy geology and mineral resources geology and over thirty years of experience in environmental geology. He has worked for the past thirty-seven years with the Louisiana Geological Survey. He taught at LSU, ULL, and NEL as an adjunct full professor. He has serviced on numerous government boards and commissions. He is a charter member, past president and director, Baton Rouge Geological Society, the recipient of a Governor's Award for outstanding service, repeatedly commended for emergency and disaster work, the holder of Louisiana Professional Geoscientist License #1 and is a published historical, fantasy, science fiction and horror writer.

March 11, 2016 - Cancelled

Februarys 12, 2016

Real-Time Data Display Using Mobile and Web GIS
Andrew Milanes, PE GISP

Abstract: Advances in mobile and hand-held devices, such as smart-phones, tablets, and GPSs in addition to cloud computing technologies have provided new capabilities in field Geographic Information System (GIS) data collection and dissemination. GIS has become an integral component of the data management, analysis, and presentation needs for various types of projects, from emergency response, to site assessments, to local governments. GIS allows for the rapid integration of multiple data sets and is a tool used throughout organizations to aid in timely, informed decision making. Prompt broadcasting of this data in an online, web-based framework has become critical as the demand for real-time information increases. This presentation will provide a technology primer and demonstration on the current state of mobile and web GIS technology hardware (iPhones, iPads, Android, Trimble, cloud servers) and software (smartphone apps, web apps, cloud portals) that can be used during various project stages. Example case studies will then demonstrate the practical applications of these technologies in real-world scenarios.

Biography: Andrew Milanes is the Vice President of Environmental Science Services, Inc. and has served as an engineer and project manager on numerous environmental projects over the past 24 years. Mr. Milanes received his Bachelor of Science degree in civil engineering from LSU in 1992 and holds professional engineering registrations in Texas, Louisiana, and Florida. He has managed environmental

projects ranging from environmental site investigations, coastal and riverine shoreline surveys, natural resource damage assessments, and contingency planning. Mr. Milanes is also a certified GIS Professional and has completed projects using GIS for environmental assessments, property litigation, oil spill contingency planning and response, and local government planning and public works. Mr. Milanes is a member of the National Society of Professional Engineers and the Louisiana Engineering Society. Currently he is serving as the President-Elect of the Louisiana chapter of URISA, the Urban and Regional Information Systems Association.

January 8, 2016

Climate Changes: Facts and Fictions
Dr. W.C. Rusty Riese, Adjunct Professor, Rice University

PRESENTATION

Abstract:
The past several years have seen several opinion pieces regarding climate change appear in the pages of many publications, both scientific and secular. Although both sides of this now almost religious debate were represented, few if any real facts or data are provided to support the opinions expressed. The public deserves more, and specifically deserves to be properly informed.

The heat content of the atmosphere has remained largely unchanged since 1995. Data prepared and compiled by a number of climate scientists illustrate the wide divergence of climate model projections from what has been occurring: the climate has not been warming any more than would be expected as the world continues to move out of the Little Ice Age. These data have been accepted by the IPCC, whose chair admits that the climate modeling community does not understand what is happening.

Water vapor in the atmosphere is a more potent greenhouse gas than CO2. Climatologists have understood this for decades and this is a fact clearly expressed in all climatology textbooks. None of the climate models employed today adequately address the influence of water vapor.

Cosmic radiation is the source of the particles which cause water droplet nucleation and cloud formation in the upper atmosphere. Its flux, in turn, is directly influenced by solar activity and the strength of the resulting solar wind. None of the climate models deal with either of these first-order climate influences.

The Earth's atmosphere has had far higher CO2 content many times and for much of the geologic past, and major glacial events have occurred during those times, most notably during the Carboniferous and Silurian. The inescapable conclusion is that CO2 has no relationship to the temperature of the Earth's atmosphere. This is a conclusion that was reached by many scientists who have looked at ice core data and found that increases in CO2 in the atmosphere occur several hundred years after temperatures have risen - they do not change in lock-step as has been claimed, and an event 800 years in the future

cannot impact events today.

These facts allow a number of fictions to be addressed:

" Polar bears will not become extinct if sea ice diminishes. Polar bears were around before the Medieval Warm Period and came through it just fine. And a recently published, peer-review study of the Davis Straights in Canada found that not only had the polar bear population increased dramatically since the 1970s, but that the area may have reached its carrying capacity. Good news for polar bears.

" The evolution which the climate is exhibiting, and which it constantly exhibits, is not causing an increase in violent storms. The frequency of violent tornados (>F3) is similar.

" The changes in climate during the past 100 years have not caused either an increase in flooding or an increase in the number or extent of droughts.

" The number of daily record high temperatures is not at an all-time high. For the past 100 years that was reached in the 1930s during the Dust Bowl.

" Finally, there is not a consensus among scientists that anthropogenic CO2 is causing climate change. The widely quoted number of 97% of scientists believing in global warming is based on an on-line survey of 10,257 earth scientists. 3,146 replied and all but 77 were "disqualified" by the researchers conducting the survey. Of those, 75 thought that humans were contributing to climate change, thus the 97% number, one that is not particularly robust.

The conclusions to be drawn from examination of these data are four:
1. All of the scary global warming scenarios are based on computer models.
2. None of the models work.
3. There is and has been no scientific consensus.
4. The data which come from our global experiment, the observations we have made, indicate that the climate is evolving and always has evolved continuously, and people have had nothing to do with that change. We need to use this information to stop our regulators and legislators from taking steps and passing laws which will have no effect on the climate we enjoy and can only have disastrous impacts on our economy.

Biography:
Dr. W.C. Rusty Riese is a geoscientist based in Houston, Texas. He is widely experienced having worked in both minerals and petroleum as a geologist, geochemist, and manager during more than 40 years in industry. He participated in the National Petroleum Council evaluation of natural gas supply and demand for North America which was conducted at the request of the Secretary of Energy; in the more recent analysis of global supply and demand requested by the same agency; and in the National Research Council analysis of coalbed produced waters and their management in the western United States. He is currently a member of the American Association of Petroleum Geologists Committee on Resource Evaluations, and a member of the House of Delegates, and past Sections Vice President.
Rusty has written extensively and lectured on various topics in economic geology including

biogeochemistry, isotope geochemistry, uranium ore deposits, sequence stratigraphy, and coalbed methane petroleum systems; and he holds numerous domestic and international patents. He has more than forty years of teaching experience including thirty one years at Rice University where he developed the curricula in petroleum geology and industry risk and economic evaluation, as well as several other courses. He is currently an Adjunct Professor at Rice University and the University of New Mexico. He is a fellow in the Geological Society of America and the Society of Economic Geologists; and a member of the American Association of Petroleum Geologists and several other professional organizations.
He earned his PhD from the University of New Mexico in 1980; his M.S. in geology from the same university in 1977; and his B.S. in geology from the New Mexico Institute of Mining and Technology in 1973. He is a Certified Professional Geologist, a Certified Petroleum Geologist, and is a Licensed and Registered Geologist in the states of Texas and South Carolina respectively.