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LOUISIANA STATE UNIVERSITY

2021 AGU Fall Meeting Presenters

LSU faculty, students, post-doctoral researchers, and staff are presenting more than 95 talks, posters, and events that span the Earth, sea, and space sciences.

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MONDAY, DEC. 13

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
2:40 PM	2:45 PM	Adam M Forte	<u>Assessing the Roles of Tectonics and Climate in Building Up and Breaking Down the Greater Caucasus Mountains: A Combined Analysis of Topography, Hydroclimate, Detrital Zircon (U-Th)/He, and 10Be Erosion Rate Data</u>	Room 223	EP14B-03
2:55 PM	3:00 PM	Refaat Hashish	<u>Effect of Boundaries and Injection Rate History on Thermal Signature at Monitoring Wells during CO2 Storage in Saline Aquifers</u>	Room 203-205	GC14A-05
4:00 PM	5:15 PM	Nicholas Schuler	<u>GPS Observations of Subsidence in South Louisiana over Seasonal and Sub-seasonal Timescales associated with Hydrologic Loading</u>	Virtual	G15C-09
4:00 PM	6:00 PM	Refaat Hashish	<u>Well Surface Temperature Monitoring to Detect Upwell CO2 Migration</u>	Poster Hall, D-F	GC15D-0718
4:00 PM	6:00 PM	Cade Reesman	<u>Hydrometeorological Changes Associated with a COVID-19 Quarantine in China</u>	Poster Hall, D-F	A15F-1708
4:00 PM	6:00 PM	Lee Potter	<u>Impacts of 2021 Extreme Winter Weather on Carbon Transport and Evasion in the Lower Mississippi-Atchafalaya River System</u>	Poster Hall, D-F	A15J-1780
4:00 PM	6:00 PM	Doug J Granger	<u>Expandable Micro-Controller Platforms for the National Eclipse Ballooning Project</u>	Poster Hall, D-F	ED15E-0554
4:00 PM	6:00 PM	Zhiqiang Deng	<u>Modeling and Mapping Solar Radiation in Coastal Waters</u>	Poster Hall, D-F	GH15E-0631
4:00 PM	6:00 PM	Rubayet Bin Mostafiz	<u>Present vs. Future Losses from a 100-year Flood: A Case Study of Grand Isle, Louisiana</u>	Poster Hall, D-F	NH15F-0508
4:00 PM	6:00 PM	Yanda Ou	<u>The Hydrodynamic and Biochemical Impacts on the Variability of Bottom Dissolved Oxygen Concentration in the Louisiana-Texas Shelf</u>	Poster Hall, D-F	OS15C-0984
4:00 PM	6:00 PM	Ye-Hong Chen	<u>Unstructured-Grid Approach to Model Complex Aquifer System and Assess Groundwater Depletion in the Capital Area of Louisiana</u>	Poster Hall, D-F	H15L-1179
4:00 PM	6:00 PM	Jeanne Garriz	<u>A Compact, Low-Cost Balloon Flight Attitude Orientation System</u>	Poster Hall, D-F	ED15E-0552
5:10PM	5:15 PM	Kelli Moran	<u>Predicting the Distribution of Preserved Pleistocene-aged Baldcypress Tree Stumps Along the Northern Gulf of Mexico</u>	Room 228-230	EP14A-09

TUESDAY, DEC. 14

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
8:00 AM	8:05 AM	Giulio Mariotti	<u>Self-Organization of Coastal Barrier Systems During the Holocene</u>	Room 228-230	EP21B-01
10:20 AM	10:25 AM	Chunli Dai	<u>Mapping Retrogressive Thaw Slumps Using ArcticDEM and Machine Learning</u>	Room 215-216	C22C-08
12:51 PM	12:54 PM	Sean Gordon	<u>Eutrophication and acidification in a shallow estuarine system of northern Gulf of Mexico.</u>	eLightning Theater VII	EP23D-03
1:12 PM	1:17 PM	Bijaya B Karki	<u>Behavior of hydrogen and carbon in silicate melts and their effects on melt properties</u>	Room 338-339	DI23A-04
4:00 PM	6:00 PM	Weston Raymond Charles	<u>Tracking Spatiotemporal Variations in Groundwater Storage in the Lower Mississippi Region with GRACE Satellite data</u>	Poster Hall, D-F	H25H-1130
4:00 PM	6:00 PM	Wenqiang Zhang	<u>A Comparison of Infilling Sediments in Two Dredge Pits for Barrier Island Restoration</u>	Poster Hall, D-F	EP25D-1356
4:00 PM	6:00 PM	Helen Hammon	<u>Connections Between Interglacial Variation and Lithological Variability within Midland Basin Permian Shale Rocks in Martin County, Texas</u>	Poster Hall, D-F	PP25B-0918
4:00 PM	6:00 PM	Kehui Xu	<u>Geomorphic and Hydrodynamic Impacts on Sediment Transport on the Inner Louisiana Shelf</u>	Poster Hall, D-F	EP25G-1393
4:00 PM	6:00 PM	Augustus Bates	<u>Seismic Experimentation to Advance Understanding of Martian Regolith-Ice</u>	Poster Hall, D-F	P25G-2232
4:00 PM	6:00 PM	Omar Alawneh	<u>Geotechnical Properties of Dredge Pits for Barrier Island Restoration</u>	Poster Hall, D-F	EP25D-1359
4:00 PM	6:00 PM	Jacob Warner	<u>Trace Element Ratios (Sr/Ca, Mg/Ca, and Ba/Ca) in the Short-Lived Bivalve <i>Donax obesulus</i>: Potential Environmental Proxies?</u>	Poster Hall, D-F	PP25C-0934
4:00 PM	6:00 PM	Adam Gartelman	<u>Morphologic Evolution and Sediment Transport of Offshore Sandy Dredge Pits</u>	Poster Hall, D-F	EP25D-1363
4:00 PM	6:00 PM	Peter Bacopoulos	<u>Hydrodynamic Assessment of Natural and Nature-based Features for Escatawpa River and Grand Bay in the Northern Gulf of Mexico</u>	Poster Hall, D-F	EP25B-1313
4:00 PM	6:00 PM	Vann Smith	<u>Palynological and Geochemical Analyses of the Chicxulub Impact Crater, IODP Expedition 364: A PETM Record from the Southern Gulf of Mexico</u>	Poster Hall, D-F	PP25F-0989

WEDNESDAY, DEC. 15

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
8:05 AM	8:10 AM	Gayle Kees	pCO₂ Changes in a Densely Populated Reach of the Lower Mississippi River	Room 203-205	GC31C-01
8:45 AM	8:50 AM	Alborz Fathinezhad	Numerical Investigation of Biomass Pyrolysis and Smoldering Combustion	New Orleans Theater C	A31E-10
10:06 AM	10:15 AM	Peter Dominic Clift	Himalayan-Tibetan Erosion is not the Cause of Neogene Global Cooling	Room 353-355	T32A-03
10:15 AM	10:20 AM	Shuo Yang	Lithofacies Modeling to Investigate Hydrostratigraphy of Regional Aquifer Systems in Louisiana and Southwestern Mississippi, USA	Room 265-266	H32A-07
1:00 PM	1:05 PM	Le Zhang	Mass Boundary Layer-based Gas Transfer Velocity Parameterization for Air-Sea CO₂ Flux Estimation of Coastal Waters	Room 231-232	B33A-02
1:05 PM	1:10 PM	Yi-Jun Xu	Connectivity of floodplain influences riverine carbon outgassing	Room 231-232	B33A-03
1:22 PM	1:30 PM	Huiming Bao	A Transient Peak in Seawater Sulfate After the 635-Ma Snowball Earth	Room 225-227	PP33A-05
2:35 PM	2:40 PM	Hamid Vahdat Aboueshagh	Surrogate-Assisted Optimization of Aquifer Storage and Recovery Operation under Uncertainty	Room 265-266	H34D-02
3:00 PM	4:00 PM	Samuel J Bentley	Media Roundtable: "Taming the Mississippi"	Zoom	N/A
3:10 PM	3:15 PM	Lisa S Gardiner	Storm Stories: High School Students Learn from Their Community About Life with Hurricanes	Room 298-299	ED34A-07
4:00 PM	5:15 PM	Md Adilur Rahim	A Data-intensive Approach to Allocating Owner vs. NFIP portion of Average Annual Flood Losses	Virtual	NH35F-15
4:00 PM	6:00 PM	Adam Forte	Unlearning Racism in the Geology and Geophysics Department at Louisiana State University	Poster Hall, D-F	U35A-2255
4:00 PM	6:00 PM	Mohamed Abdelaal	Using Injection Pressure and Rate Data Analysis to Estimate CO₂ Storage Capacity of Closed Saline Aquifers	Poster Hall, D-F	SY35E-0650
4:00 PM	6:00 PM	Jaren Bradford	Do Ice Shelves or Calving Cliffs Exist During Rapid Grounding-Line Retreat?	Poster Hall, D-F	C35A-0861

WEDNESDAY, DEC. 15

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
4:00 PM	6:00 PM	Katia Lele Lagmago	<u>Sand-Biochar Mixtures as a Sustainable and Multifunctional Roadway Fill Material</u>	Poster Hall, D-F	B35J-1534
4:00 PM	6:00 PM	Brandon Wolff	<u>A Study of Biomass and Growth of Wetland Plant Species in Response to different Hydroperiods determined by Manipulated Soil Surface Elevation</u>	Poster Hall, D-F	EP35H-1401
4:00 PM	6:00 PM	Joon Soo Park	<u>Soil Water Retention Curve and Hydraulic Conductivity of Fungi-Treated Sand</u>	Poster Hall, D-F	B35J-1535
4:00 PM	6:00 PM	Pengfei Wang	<u>Assess the Performance of WRF-VPRM in the North America Coastal Ocean with Impact from a River-Dominated Shelf System</u>	Poster Hall, D-F	B35E-1481
4:00 PM	6:00 PM	Rubayet Bin Mostafiz	<u>A Data-driven, Probabilistic, Multiple Return Period Method of Flood Depth Estimation</u>	Poster Hall, D-F	H35I-1131
4:00 PM	6:00 PM	Songjie He	<u>Potential methane production relative to carbon burial in wetlands undergoing sediment loss and accretion in coastal Louisiana</u>	Poster Hall, D-F	B35G-1502
4:00 PM	6:00 PM	Joseph Honings	<u>Characterization of Preferential Subsurface Flow Paths in a Mantled Karst Terrain Using Ground-Penetrating Radar</u>	Poster Hall, D-F	NS35D-0390
4:00 PM	6:00 PM	Samuel Mason Zapp	<u>Evaluating Dredged Material Placement Strategies for Marsh Restoration with a Landscape Evolution Model</u>	Poster Hall, D-F	EP35H-1392
4:00 PM	6:00 PM	Robert Forney	<u>Urban effects on weakly forced thunderstorms observed among Southeast United States cities</u>	Poster Hall, D-F	GC35L-0844
4:00 PM	6:00 PM	Yuqi Song	<u>Lithofacies Modeling Utilizing Generative Adversarial Networks and Geostatistics</u>	Poster Hall, D-F	H35M-1171
4:00 PM	6:00 PM	Melika Mani	<u>Hydrostratigraphic Modeling of the Lower Mississippi-Gulf Region</u>	Poster Hall, D-F	H35C-1056
4:00 PM	6:00 PM	Jin Ikeda	<u>The ground-truth about lidar-derived digital elevation models in coastal wetland regions of the northern Gulf of Mexico</u>	Poster Hall, D-F	EP35H-1389

THURSDAY, DEC. 16

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
8:00 AM	9:15 AM	Bijaya Karki	Computational Advances and Applications in Earth and Planetary Materials Research I Oral	Room 342	MR41A
8:03 AM	8:06 AM	Samuel J Bentley	The Mississippi River Source-To-Sink System: Perspectives on Tectonic, Climatic, and Anthropogenic Influences, and Questions on Future Anthropocene Evolution (Invited)	eLightning Theater VII	EP41D-01
8:05 AM	8:10 AM	Peter Dominic Clift	A Limited Role for Erosional Exhumation of the Nanga Parbat Syntaxis in Supplying Sediment to the Arabian Sea (Invited)	Room 356-357	T41B-02
8:12 AM	8:17 AM	Dipta Bhanu Ghosh	First-principles simulations of crystal-melt interfaces in Mg₂SiO₄ under pressure	Room 342	MR41A-03
8:21 AM	8:24 AM	Jeffrey Duxbury	Timescales of sediment mass-transport and reworking on the Mississippi River Delta Front from Radioisotope Geochronology	eLightning Theater VII	EP41D-07
9:05 AM	9:50 AM	Robert Eugene Turner	The Anthropocene Comes Home: Innovation and Adaptation in Louisiana	Great Hall, Prow Main Stage	U41B
9:48 AM	9:51 AM	Matthew Danielson	Sedimentological Evidence of Ice Sheet Instability in Ross Sea Following Major Grounding-line Stillstands	eLightning Theater I	C42B-02
10:25 AM	10:30 AM	Shu Gao	Vertical Feature Delineation for Flood Hazard Assessments at the Atchafalaya River Basin	Room 267-268	H42C-08
12:50 PM	12:55 PM	Kristine DeLong	Geochemical proxies in a long live coral from Flower Garden Banks National Marine Sanctuary as a candidate for the Anthropocene Global Boundary Stratotype Section and Point (GSSP)	Room 220-222	PP43A-01
2:35 PM	2:40 PM	Robert Eugene Turner	A century-long snapshot of water quality at the end of the Mississippi River (Invited)	Room 228-230	B44A-01
2:42 PM	2:45 PM	Haosheng Huang	Numerical Study of Loop Current Frontal Eddies Using an Unstructured-Grid One-Way Nesting Approach	Room 223	OS44A-04
2:45 PM	2:50 PM	Kendall Brome	Snapshots of Late Pleistocene Climatic and Ecologic Variability in the Northern Gulf of Mexico Using Isotopic Analysis of Sediment and Wood	Room 217-219	PP44B-02
4:00 PM	6:00 PM	Matthew Kratchovil	Reconstruction of Calving Cliff Oscillations During the Rapid Opening of a Large Grounding-Line Embayment in the Whales Deep Basin, Ross Sea Antarctica	Poster Hall, D-F	C45E-1049

THURSDAY, DEC. 16

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
4:00 PM	6:00 PM	Allison Barbato	<u>Reconstructing the Eocene-Miocene Paleoenvironment of the Coos Bay Basin, Southwest Oregon, USA by Integrating Organic Petrography, Palynomorph Assemblages and Lithologic Observations</u>	Poster Hall, D-F	PP45E-1151
4:00 PM	6:00 PM	Giulio Mariotti	<u>A Comprehensive Assessment of Sediment Dynamics in the Barataria Basin (LA, USA) Distinguishes Riverine Advection from Wave Resuspension and Identifies the Gulf Intracoastal Waterway as a Major Sediment Source</u>	Poster Hall, D-F	H45H-1267
4:00 PM	6:00 PM	Diwas Bhattarai	<u>Modeling viscosity of silicate melts using machine learning techniques</u>	Poster Hall, D-F	MR45A-0078
4:00 PM	6:00 PM	Haiyang Luo	<u>Viscosity and Electrical Conductivity of Silicate Melts Predicted by Deep Learning Potentials</u>	Poster Hall, D-F	MR45A-0075
4:00 PM	6:00 PM	Junhong Liang	<u>Including the Effects of Subsurface Currents on Buoyant Particles in Lagrangian Particle Tracking Models: Model Development and its Application to the Study of Riverborne Plastics over the Louisiana/Texas Shelf</u>	Poster Hall, D-F	A45N-2041
4:00 PM	6:00 PM	Dipendra Banjara	<u>First-principles Simulations of Liquid Iron-heavy Element Alloys At High Pressure</u>	Poster Hall, D-F	MR45A-0064
4:00 PM	6:00 PM	Daoyang Bao	<u>A Numerical Investigation of the Nonlinear Effects between River and Ocean Forcing during a Hurricane-induced Compound Flooding Event</u>	Poster Hall, D-F	H45N-1338
4:00 PM	6:00 PM	Dongxiao Yin	<u>A Numerical Investigation of Sediment Dynamics over the Cape Fear River basin during Hurricane Florence</u>	Poster Hall, D-F	H45O-1347
4:00 PM	6:00 PM	Paul Miller	<u>Preferred Saharan Air Layer Seasonal Pathways Across the Tropical North Atlantic</u>	Virtual	A45S-2101
4:00 PM	6:00 PM	Erika Ornouski	<u>Sedimentary Charcoal as an Indicator of Past Native American Fire Use in Yosemite National Park, California</u>	Poster Hall, D-F	A45U-2151
4:00 PM	6:00 PM	Kylie Palmer	<u>Key Temperature Differences between the Northern and Southern Gulf of Mexico since the 1880 CE Revealed by Siderastrea siderea Coral Sr/Ca Reconstructions</u>	Poster Hall, D-F	OS45D-1177
4:51 PM	4:56 PM	Sean Gordon	<u>Eutrophication and acidification in a shallow estuarine system of northern Gulf of Mexico</u>	eLightning Theater I	OS45A-10

FRIDAY, DEC. 17

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
8:15 AM	8:20 AM	Amanda Barbato	Spatiotemporal Variability of Soil Water $\delta^{18}O$ and δ^2H Reveals Hydrological Processes in Two Floodplain Soils	Room 267-268	H51G-03
8:22 AM	8:29 AM	Guangsheng Zhuang	The Neogene topographic evolution of Northern Tibetan Plateau: a perspective from an integrated study on leaf wax n-alkane hydrogen isotopes, soil microbial tetraethers, and sedimentary facies analysis and regional climatic and ecological mapping	Room 356-357	T51B-03
8:35 AM	8:40 AM	Carol Wilson	GNSS-IR advances hone platform elevation dynamics and flood risk of the lower Ganges-Brahmaputra-Meghna delta	Room 223	EP51C-08
2:40 PM	2:45 PM	Joses Omojola	Monitoring Subsurface Changes in Salt Dome Caverns using Fine-scale Microseismicity Variations	Room 346-347	S54A-03
3:05 PM	3:10 PM	Jay Merrill	Meteorological Impacts on Waves and Currents in a Nearshore Microtidal System	Room 225-227	EP54A-08
4:00 PM	6:00 PM	Nikki Neubeck	Testing Sediment Buffering Model Using Detrital Zircon U-Pb Dating in the Lower Mississippi	Poster Hall, D-F	EP55E-1163
4:00 PM	6:00 PM	Denise Poveda	Benthic Nitrogen Cycling Responding to Mineral Sedimentation of Hurricanes and its Recovery in an Emerging Coastal Deltaic Floodplain within the Mississippi River Delta Plain	Poster Hall, D-F	EP55E-1164
4:00 PM	6:00 PM	Leora Wilson	Understanding Crustal Stress Heterogeneity in Southern California using Focal Mechanism Inversions and Shear Wave Splitting Fast Velocities.	Poster Hall, D-F	T55D-0103
4:00 PM	6:00 PM	Kristoffer Colton Fowler	A Synthesis of the Tectonic, Paleogeographic, and Climatic Histories of the Southern Greater Caucasus Foreland Basins, and their Environmental Signals	Poster Hall, D-F	T55C-0081
4:00 PM	6:00 PM	Tiffany Nordstrom	An Examination of the Paleocene-Eocene Palynology of the Alaminos Canyon in the Gulf of Mexico	Poster Hall, D-F	B55L-1328
4:00 PM	6:00 PM	Barry Boler	Palynological evaluation of Stones Field Well WR 508#1, Gulf of Mexico Deepwater Wilcox Group	Poster Hall, D-F	B55L-1337
4:00 PM	6:00 PM	Z. George Xue	Assessing hydro- and sediment dynamics of hurricane-induced compound flooding using a dynamically coupled ocean-river modeling suite	Poster Hall, D-F	H55U-0973
4:00 PM	6:00 PM	Leslie Anne Valentine	Sedimentology and Geomorphology of Fluvio-tidal and Tidal-dominated Meanders in the Ganges-Brahmaputra-Meghna Delta in Bangladesh	Poster Hall, D-F	EP55E-1148
4:00 PM	3:40 PM	Emily Hughes	Modeled Bulk Mineralogy Suggests Limited Alteration in Eridania Basin, Mars	Poster Hall, D-F	P55B-1929

FRIDAY, DEC. 17

START	END	LSU RESEARCHER	PRESENTATION OR POSTER ABSTRACT	ROOM #	SESSION-PAPER
4:00 PM	4:30 PM	Christopher E Kees	High-Performance Computational Models of Non-Hydrostatic Water Waves over Complex Bathymetry	Poster Hall, D-F	A55B-1374
4:00 PM	6:00 PM	Xiao Tan	Characterizing the Magmatic Evolution of the Elysium Volcanic Province on Mars	Poster Hall, D-F	P55B-1931
4:00 PM	6:00 PM	Catherine Russell	Anthropocene Rivers	Virtual	GC55L-01
4:00 PM	6:00 PM	Augustus Bates	Super-eruptions in Northwestern Arabia Terra Indicate Distinct Mantle Evolution on Early Mars	Poster Hall, D-F	P55B-1930
4:00 PM	6:00 PM	Sophie Vincent	Time-varying rates of accretion in Louisiana marshes and relation to sea-level change	Poster Hall, D-F	EP55D-1146
4:00 PM	6:00 PM	Sophie Vincent	Time-varying rates of accretion in Louisiana marshes and relation to sea-level change	Poster Hall, D-F	EP55D-1146
4:00 PM	6:00 PM	Mallory Ray Pilie	Fungi in a Warmer World: evaluating fungal biodiversity and abundance during the Middle Miocene Climatic Optimum in the South China Sea	Poster Hall, D-F	B55L-1333
4:00 PM	6:00 PM	Yi-Jun Xu	Impacts of engineered river diversions on channel dynamics and sediment delivery to river mouths	Poster Hall, D-F	EP55E-1156

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