

UNIVERSITY of  
**HOUSTON**

EARTH AND ATMOSPHERIC SCIENCES



# 2018 Student Research Day & Industry Open House

Student led since 1988



**Friday, April 27, 2018**  
**8:30am - 5pm**  
**Science & Research 1**  
**University of Houston**  
**Houston, Texas 77204**



See abstracts at <http://www.uh.edu/nsm/earth-atmospheric/news-events/research-day/>

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# RESEARCH TALKS (SESSION 1): SR1, ROOM 223

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Time	Speaker	Title
9:00	XIANG LING	STATISTICAL TOOLS FOR ISOTOPIC BIG DATA: ANALYSIS OF MID-ATLANTIC RIDGE BASALTS
9:15	LUCIA TORRADO	SEISMIC CHARACTERIZATION OF THE LATE CRETACEOUS SUBMARINE FANS SYSTEM IN THE DEEP-WATER FOZ DO AMAZONAS BASIN, NORTHERN BRAZIL: AN ANALOG FOR LATE CRETACEOUS FAN PLAYS ON ATLANTIC PASSIVE MARGINS
9:30	AVRADIP GHOSH	GREEN'S FUNCTION OF THE WAVE EQUATION FOR A FRACTURED DISSIPATIVE HTI MEDIUM TAKING THE VISCOELASTICITY OF THE SYSTEM INTO ACCOUNT
9:45	XIAOYUN PENG	FRACTURE CHARACTERIZATION USING MULTICOMPONENT ELASTIC WAVES
10:00	AARON MARK STUDWELL	SPATIOTEMPORAL VARIATIONS OF SATURN'S ZONAL WINDS BASED ON CASSINI LONG-TERM (2004-2017) MULTI-INSTRUMENT OBSERVATIONS
10:15	ERIC LUNN	3D FREE-AIR GRAVITY MODELING OF THE BARREIRINHAS AND CEARA BASINS, NORTHEASTERN BRAZIL
10:30	COFFEE BREAK	
10:45	JOSHUA FLORES	TRIPLE JUNCTIONS, BONINITES, AND A NEW MICROPLATE AT THE SOUTHERN TERMINATION OF THE MARIANA ARC
11:00	MANUEL PAEZ-REYES	CONTROLS ON ORGANIC MATTER PRODUCTION AND ACCUMULATION DURING OCEANIC ANOXIC EVENT 2 IN THE CRETACEOUS LA LUNA FORMATION, NORTHWESTERN SOUTH AMERICA
11:15	YUAN TIAN	SEISMIC PROBING OF AN ASTEROID USING ONE SOURCE AND ONE RECEIVER

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# RESEARCH TALKS (SESSION 1): SR1, ROOM 223 (CONT.)

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Time	Speaker	Title
11:30	YI-AN LIN	IMAGED AND PREDICTED MANTLE STRUCTURE OF THE SUBDUCTED IZANAGI-PACIFIC RIDGE UNDER EAST ASIA
11:45	SHELBY N. JOHNSTON	TESTING MODELS OF EROSION IN THE HIMALAYAS
12:00	MUHAMMAD NAWAZ BUGTI	EXTRACTING FAULT AND REGIONAL SALT FLOW INFORMATION FROM A HIGH-RESOLUTION, BATHYMETRIC MAP OF THE SLOPE AND ABYSSAL PLAIN OF THE US GULF OF MEXICO
12:15	JACK KENNING	ROLE OF EOCENE-OLIGOCENE MASS TRANSPORT DEPOSITS FOR CONTROLLING ALONG-STRIKE VARIATIONS IN THICKNESS, STRUCTURAL GEOMETRY, AND HYDROCARBON SEALING, MEXICAN RIDGES FOLD-THRUST BELT, WESTERN GULF OF MEXICO

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# RESEARCH TALKS (SESSION 2): SR1, ROOM 634

Time	Speaker	Title
9:00	DELANEY ROBINSON	DEVELOPMENT OF SEDIMENT FABRICS INDICATIVE OF DEFORMATION PROCESSES IN GLACIAL DEPOSITS
9:15	TSUNG JUI WU	GEOCHEMICAL CONSTRAINTS ON PACIFIC-IZANAGI RIDGE SUBDUCTION ALONG THE NE ASIAN MARGIN FROM THE MAGMATIC RECORD OF JAPAN, SIKHOTEALIN AND SAKHALIN
9:30	ZHONGMIN TAO	SHEAR WAVE VELOCITY STRUCTURE BENEATH EASTERN NORTH AMERICA FROM RAYLEIGH WAVE TOMOGRAPHY
9:45	ANDREW STEIER	JURASSIC-CRETACEOUS STRATIGRAPHIC AND STRUCTURAL EVOLUTION OF THE NORTHERN YUCATAN MARGIN, GULF OF MEXICO BASIN
10:00	PONGTHEP THONGSANG	IMAGING IMPROVEMENT IN ANGLE-DOMAIN COMMON-IMAGE-GATHERS BY A LOCAL STACK UTILIZING SEGMENTATION METHOD
10:15	XIN ZHOU	BEACH AND DUNE MORPHOLOGY CHANGES INDUCED BY HURRICANE HARVEY FROM REPEAT LIDAR SURVEYS IN THE FREEPORT, TX
10:30	COFFEE BREAK	
10:45	MCKENSIE KILGORE	WATER IN THE LITHOSPHERIC MANTLE WEDGE BENEATH THE NORTHERN CANADIAN CORDILLERA (ALLIGATOR LAKE)
11:00	SING-CHUN WANG	TRANSPORT OF CENTRAL AMERICAN FIRE EMISSIONS TO THE U.S. GULF COAST: CLIMATOLOGICAL PATHWAYS AND IMPACTS ON OZONE AND PM2.5
11:15	MARCUS P. ZINECKER	EVIDENCE FROM STRUCTURAL RECONSTRUCTION AND SUBSIDENCE FOR TWO PHASES OF TRIASSIC-JURASSIC RIFTING IN THE SOUTHEASTERN GULF OF MEXICO

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# RESEARCH TALKS (SESSION 2): SR1, ROOM 634 (CONT.)

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Time	Speaker	Title
11:30	NAN SUN	OSMIUM ISOTOPES, PLATINUM-GROUP ELEMENTS (PGE) AND RHENIUM IN SEDIMENTS ACROSS THE YOUNGER DRYAS(YD) BOUNDARY FROM HALL'S CAVE, TEXAS
11:45	JINGJING ZONG	ELASTIC PROPERTIES OF ROCK SALT
12:00	EZZEDEEN ALFATAIERGE	FIBER OPTIC MOTION SENSING: A COMPARISON OF DAS, FBG, AND GEOPHONE SENSORS
12:15	ZHILI WEI	FACIES CHARACTERIZATION USING CONVOLUTIONAL NEURAL NETWORK BY PADDING THE ORIGINAL DATASET

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# ADVANCED Ph.D. STUDENT POSTERS

**SR1, 1st Floor Corridor**

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<b>Presenter</b>	<b>Title</b>	<b>No.</b>
OLABOSIPO O. OSIBANJO	INVESTIGATING THE INFLUENCE OF PLANETARY BOUNDARY LAYER EVOLUTION AND METEOROLOGY ON AIR QUALITY IN MEXICO CITY	1
LEI SUN	INTEGRATED HYPERSPECTRAL AND GEOCHEMICAL STUDY OF SEDIMENT-HOSTED DISSEMINATED GOLD AT GOLDSTRIKE DISTRICT, UTAH	2
YIPENG LI	METAMORPHIC P-T-T PATHS RECORD LOWER CRUSTAL REWORKING OF THE MUZTAGHATA DOME, NORTHEASTERN PAMIR	3
THORAM SRIHARSHA	HURRICANE HARVEY INDUCED MORPHOLOGICAL CHANGES AND SEDIMENTATION PATTERNS IN BOLIVAR ROADS	4
SURESH DANDE	NUMERICAL MODELING OF SEISMIC WAVE SCATTERING IN PROPPED ROCK	5
YI-WEI CHEN	BUILDING AN ANDES PLATE TECTONIC RECONSTRUCTION USING UNFOLDED SLABS FROM SEISMIC TOMOGRAPHY: IMPLICATIONS FOR FLAT SLAB TECTONICS	6
XIONG LIN	EVALUATION OF A DIRECT GEOREFERENCING TLS SURVEY METHOD FOR BEACH AND DUNE MAPPING: A CASE STUDY AT FREEPORT, TEXAS	7
JIAOXUAN LI	IN SITU SEISMIC ANISOTROPY AROUND DEEP EARTHQUAKES IN JAPAN SUBDUCTION SLABS USING JAPAN NIED MOMENT TENSORS	8

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# ADVANCED Ph.D. STUDENT POSTERS (CONT.)

**SR1, 1st Floor Corridor**

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<b>Presenter</b>	<b>Title</b>	<b>No</b>
JOHN WESLEY NEESE	TMZ/TEZ VECTOR POTENTIALS DUE TO AN ARBITRARILY ORIENTED DIPOLE IN 3-D SPACE IN THE PRESENCE OF AN INFINITE DIELECTRIC CYLINDER	9
TITHI GHOSH	MELTING HISTORY OF NORTHERN MARIANA TRENCH PERIDOTITE IN RESPONSE TO PACIFIC PLATE SUBDUCTION	10
WANDA CRUPA	SURFACE DEFORMATION ANALYSIS IN THE HOUSTON AREA	11

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# M.S. and EARLY Ph.D. STUDENT POSTERS

**SR1, 2nd Floor Corridor**

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JANET KONG	BURIED GLACIAL GEOMORPHIC FEATURES ON SURFACES USING 3-D SEISMIC DATA IN THE SOUTHWESTERN BARENTS SEA, ARCTIC NORWAY	12
YANNIC LOPS	PREDICTING DAILY POLLEN CONCENTRATIONS OVER HOUSTON USING NEURAL NETWORK SYSTEMS	13
XINYAN LI	CONVERGENCE ACCELERATION OF 2D MULTIPLE SCATTERING SERIES USING SHANKS TRANSFORMATION	14
YING ZHANG	IMAGING THE CRUSTAL STRUCTURE IN ALASKA	15
MARIE-NELSY KOUASSI	REGIONAL COMPARISON OF DETRITAL ZIRCON POPULATIONS IN PRE-RIFT PALEOZOIC AND SYN-RIFT MESOZOIC ROCKS FROM THE GULF OF MEXICO TO NORTHERN SOUTH AMERICA	16
JIA JUNG	CHEMICAL DATA ASSIMILATION OF GEOSTATIONARY AEROSOL OPTICAL DEPTH AND PM SURFACE OBSERVATIONS ON REGIONAL AEROSOL MODELING OVER THE KOREAN PENINSULA DURING KORUS-AQ CAMPAIGN	17
DAVID Z. LI	HIGH-RESOLUTION REFLECTION IMAGING OF FRACTURES AROUND A WELLBORE USING CROSS-DIPOLE SHEAR SOURCE	18
STEPHANIE E. SUAREZ	IS THE TISSINT STREWN-FIELD HETEROGENEOUS? LU-HF, SM-ND AND RB-SR EVIDENCE	19
ALQAMAH SAYEED	24-HOUR OZONE PREDICTION USING ARTIFICIAL INTELLIGENCE (CNN-DNN) FOR HOUSTON	20
JEFFREY HENSLEY	DIFFERENTIATING SEDIMENT SOURCES DURING PALEOGENE EVOLUTION OF THE ALTIPLANO BASIN, SOUTHERN PERU	21
JESSICA CHEW	EARTH INNER CORE ANISOTROPY AS OBSERVED BY PKIKP AND PKIKP REFLECTED WAVES	22

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# M.S. and EARLY Ph.D. STUDENT POSTERS (CONT.)

**SR1, 2nd Floor Corridor**

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KASEY MAHANEY	THE IMPACT OF REFLECTIVE IMPERIOUS SURFACES IN THE GREATER HOUSTON AREA	24

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# UNDERGRADUATE STUDENT POSTERS

SR1, 3rd Floor Corridor

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KENDALL D. HATFIELD	PETROCHRONOLOGICAL DISCRIMINATION OF WESTERN INTERIOR CAMBRIAN ZIRCONS AND IMPLICATIONS FOR ANCESTRAL ROCKY MOUNTAIN SEDIMENT PROVENANCE	26
MOHAMMAD ALMATROOD	COMPILATION OF RADIOMETRIC AGE DATES FROM THE GREAT ARC OF THE CARIBBEAN: EVIDENCE FOR AN IN SITU OR PACIFIC-DERIVED CARIBBEAN PLATE?	27
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OMAR ZAVALA	COMPARISON OF SPREADING RATE VARIATIONS IN THE SOUTH ATLANTIC OCEAN WITH SUBSIDENCE HISTORIES OF OFFSHORE WELLS AND APATITE FISSION TRACK COOLING AGES FROM THE SOUTH AMERICAN AND AFRICAN CONJUGATE MARGINS	29
PAYTON L. MCCAIN	NEW DEPOSITIONAL CHRONOLOGY AND SEDIMENT SOURCE CHARACTERIZATION FOR THE CENOZOIC MUÑANI FORMATION IN THE NORTHERN ALTIPLANO, SOUTHERN PERU	30
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