

32nd Student Research Day & Industry Open House

Friday, April 28, 2017
8:30am - 5pm
Science & Research 1
University of Houston
Houston, Texas 77204



SCHEDULE OF EVENTS

All activities are located in Science & Research Building 1 (SR1)

- 8:30 am **Registration Opens**
(SR1 1st floor lobby)
- 8:50 am - 12:30 pm **Oral Presentations**
(Room 223 and Room 634)
- 10:35 – 10:45 **Coffee Break**
(SR1 2nd Floor lobby)
- 12:30 pm - 1:00 pm **Lunch**
(SR1 2nd floor lobby)
- 1:15 pm - 3:30 pm **Student Poster Session and Lab Tours**
(SR1, Corridors of 1st, 2nd, and 3rd floors).
- 3:30 pm - 4:00 pm **Remote Sensing Demonstration**
(Front of SR1, Facing Cullen Blvd.)
- 4:00 pm - 5:00 pm **Awards Ceremony**
(SR1 Rm. 117)
- 5:00 pm **LiDAR Group Photo**
(Front of SR1, Facing Cullen Blvd.)
- 5:30 pm **Annual EAS Faculty-Student-Alumni-
Industry Happy Hour**
*McGonigel's Mucky Duck, 2425 Norfolk,
Houston, TX 77098.*

32nd Student Research Day & Industry Open House

Student organized and run since 1988

GRADUATE STUDENT COMMITTEE

Kirstie Haynie (Conference Organizer & Committee Chair)

Abigail Corbett (Committee Co-Chair)

Kurt Sundell (Judging Coordinator)

Elita De Abreu

Eleanor Dietz

Tithi Ghosh

Cole Jones

Andrea Paris

Lily Schaffer

FACULTY RESEARCH DAY ADVISOR

Dr. Regina Capuano

STAFF ADVISORS

Hannah Dahdouh

Jay Krishnan

Jim Parker

Special thanks to all our volunteers!!

RESEARCH TALKS: SR1, Room 634

Time	Speaker	Title
8:50	KIRSTIE LAFRON HAYNIE	TECTONIC DRIVERS OF THE WRANGELL BLOCK: INSIGHTS ON FOREARC SLIVER PROCESSES FROM 3D GEODYNAMIC MODELS OF ALASKA
9:05	YUAN TIAN	TOPOGRAPHY-COUPLED RESONANCE BETWEEN MARS NORMAL-MODES AND PHOBOS TIDAL FORCE
9:20	DELANEY ELYSE ROBINSON	SEDIMENT CHARACTERIZATION OF TILLS AND GLACIOMARINE DIAMICTONS IN THE ROSS SEA, ANTARCTICA: SUBSTRATE DEFORMATION AND ICE SHEET BEHAVIOR
9:35	ZHONGHAN LIU	APPLICATION OF THE DIRECT WAVEFORM INVERSION ON 2D MODELS
9:50	AMIR HOSSEIN SOURI	REMOTE SENSING EVIDENCE OF DECADEAL CHANGES IN MAJOR TROPOSPHERIC OZONE PRECURSORS OVER EAST ASIA
10:05	ANDREW GILBERT KEREKGARTO	STABLE AND RADIOGENIC MG ISOTOPE STUDY OF THREE SIMILAR EARLY SOLAR SYSTEM REFRACTORY SOLIDS: CAIS
10:20	YUKAI WO	A LAYER-CELL APPROACH OF NEAR-SURFACE FIRST-ARRIVAL TOMOGRAPHY
10:35	COFFEE BREAK	
10:45	DUSTIN PATRICK VILLARREAL	TIMING OF CRUSTAL SUTURING IN THE PAMIR
11:00	SHARIF MUNJUR MORSHED	COMPARISON OF ANISOTROPIC EFFECTIVE MEDIUM SCHEMES FOR ELASTIC INTERACTIONS OF INCLUSIONS
11:15	MEI MEI	SIMULTANEOUS DETERMINATION OF ORGANOSULFUR COMPOUNDS, DIAMONIDS, AROMATIC AND SATURATED BIOMARKERS IN CRUDE OILS BY GAS CHROMATOGRAPHY TRIPLE QUADUPOLE MASS SPECTROMETRY

RESEARCH TALKS: SR1, ROOM 634 (CONT.)

Time	SPEAKER	TITLE
11:30	SHARON CORNELIUS	LATITUDINAL VARIATION IN SALT-BODY INTERVAL VELOCITIES IN THE DEEPWATER GULF OF MEXICO: KEATHLEY CANYON AND WALKER RIDGE AREAS
11:45	ALEXANDER KOTSAKIS	CHARACTERIZATION OF WIND PATTERNS OVER TEXAS: IMPACT ON DALLAS-FORT WORTH OZONE
12:00	TREY ALLEN LOBPRIES	A POTENTIAL IMPACT SITE IN THE SAHARA DESERT, REMOTE SENSING EVIDENCE AGAINST FORMATION FROM ANAEROGENIC MAGMATISM OF THE AIR MOUNTAINS, NIGER
12:15	XIN ZHOU	DELINEATING BEACH AND DUNE MORPHOLOGY FROM MASSIVE TERRESTRIAL LASER SCANNING DATA USING THE GENERIC MAPPING TOOLS

New to EAS: The EAS department was recently given funds to improve the Geosciences Learning Center! Upgrades include an augmented reality sandbox, a stream table to simulate fluvial processes, a new geophysics computer workstation, updated computers, a complete Ward's Science collection of rocks with matching thin sections, additional petrographic microscopes, new furniture, and more. Go take a look at the all the improvements during the lab tour time!



RESEARCH TALKS: SR1, Room 223

Time	Speaker	Title
8:50	XIANG LING	GEOCHEMICAL MODELS FOR TWO COMPONENTS MIXING FROM ARCTIC MORB
9:05	EBRAHIM ESLAMI	THE USE OF DEEP LEARNING TO PREDICT OZONE CONCENTRATION OVER HOUSTON AREA
9:20	ANNA KRYLOVA	ISOTROPIC-FRACTURED FLUID-SATURATED LAYER: DISPERSIVE PROPERTIES AND TUNING EFFECTS
9:35	TYSON SMITH	PALEOGENE TECTONICS DRAINAGE DYNAMICS AND BASIN FILLING IN NORTH CENTRAL NEW MEXICO
9:50	QIANQIAN WEI	LABORATORY MEASUREMENTS OF VELOCITY DISPERSION AND WAVE ATTENUATION IN WATER SATURATED SANDSTONES AT LOW FREQUENCY
10:05	KURT ERIC SUNDELL	UNMIXING DETRITAL ZIRCON U-PB AGE DISTRIBUTIONS
10:20	SHUAI PAN	EVALUATION OF THE AIR QUALITY IMPACTS OF INCREASED FREIGHT TRAFFIC IN THE HOUSTON METROPOLITAN AREA IN A FUTURE YEAR
10:35	COFFEE BREAK	
10:45	YUANDI GAN	EFFECTS OF VARIATIONS IN FLUID PROPERTIES AND FRACTURE GEOMETRY ON DISPERSION, ANISOTROPY AND REFLECTION IN MEDIA WITH PLANAR FRACTURES
11:00	LUIS CARLOS CARVAJAL	INTEGRATED BASIN AND PLAY ASSESSMENT OF UNDISCOVERED OIL AND GAS RESOURCES IN THE WESTERN CARIBBEAN SEA: MISKITO BASIN, COLOMBIAN OFFSHORE
11:15	SURESH DANDE	THE EFFECT OF PROPPANT-FILLED FRACTURES ON THE ELASTIC PROPERTIES OF 3D-PRINTED ROCK MODELS
11:30	LILLIAN AURORA SCHAFFER	GEOCHEMISTRY OF THE RIO GRANDE RIFT MANTLE LITHOSPHERE
11:45	ISMOT JAHAN	SPECTRAL DECOMPOSITION USING TIME-FREQUENCY CONTINUOUS WAVELET TRANSFORMS FOR FAULT DETECTION IN THE BAKKEN FORMATION

RESEARCH TALKS: SR1, Room 223

12:00	HONGLI JING	WEST TEXAS MICRO EARTHQUAKES INDUCED OR NOT
12:15	LEI SUN	GROUND BASED HYPERSPECTRAL IMAGING OF THE EAGLE FORD FORMATION

UNIVERSITY of HOUSTON
EARTH AND ATMOSPHERIC SCIENCES



ADVANCED Ph.D. STUDENT POSTERS

SR1, 1st Floor Corridor

Presenter	Title	No.
KYLE R REUBER	CRUSTAL STRUCTURE AND RIFT TO PASSIVE MARGIN TECTONIC EVOLUTION OF CONJUGATE VOLCANIC PASSIVE MARGINS OF THE SOUTH ATLANTIC OCEAN COMPARED TO RIFT ZONES WORLDWIDE	1
JINGJING ZONG	ELASTIC PROPERTIES OF SALT	2
SHUTTING YANG	INVESTIGATION OF UPSTREAM NATURAL GAS FUGITIVE LEAK DETECTION	3
YIPENG LI	THE METAMORPHIC P-T PATH OF THE PAMIR MUZTAGHATA DOME	4
UNAL OKYAY	SURFICIAL MINERALOGICAL HETEROGENEITIES AS POSSIBLE LATE DIAGENETIC INDICATORS OF MICROSEEPAGE IN GARZA, TEXAS	5
ABIGAIL MARGARET CORBETT	ANALYSIS OF SOLAR-INDUCED FLUORESCENCE (SIF), CARBON DIOXIDE, AND PRECIPITATION USING OCO-2 AND TRMM	6
XUEZE CHEN	ASSESSING EFFECTS OF SULFATE MINERALS ON GAS GENERATION IN SHALE USING HYDROUS PYROLYSIS	7
LUIS CARLOS CARVAJAL	A REVISED FLEXURAL MODEL FOR THE FORELAND LLANOS BASIN OF COLOMBIA: INDICATION OF AN EARLIER ANDEAN UPLIFT AND ITS HYDROCARBON IMPLICATION	8
BINGYI ZHAO	GEOCHEMICAL CHARACTERISTICS OF MONTEREY FORMATION, SANTA MARIA BASIN	9
PONGTHEP THONGSANG	GAS-POCKET-RESERVOIR ANALYSES UTILIZING VECTOR-BASED TO IMAGING AND EXTRACTING ROCK PROPERTIES	10
SHENELLE GOMEZ	TECTONIC ORIGIN OF THE TOBAGO-BARBADOS RIDGE AND TOBAGO FOREARC BASIN BASED ON INTEGRATION OF GRAVITY MODELS AND SEISMIC REFLECTION DATA	11

ADVANCED Ph.D. STUDENT POSTERS (Cont.)

SR1, 1st Floor Corridor

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LUCIA TORRADO	PALEOGENE, MEGA-MASS TRANSPORT COMPLEXES IN THE DEEP- WATER FOZ DO AMAZONAS BASIN, NORTHERN BRAZIL: IMPLICATIONS FOR FUTURE HYDROCARBON EXPLORATION	13
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WEIHANG YANG	AN OPTIMUM SAMPLE PREPARATION METHOD FOR MULTI- ELEMENT ANALYSIS IN CRUDE OR FUEL OILS WITH ICP-OES AND QQQ-ICP-MS BY MINERALIZATION UTILIZING A SINGLE- REACTION-CHAMBER MICROWAVE SYSTEM	21
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M.S. and EARLY Ph.D. STUDENT POSTERS

SR1, 2nd Floor Corridor

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SING-CHUN WANG	IMPACTS OF CENTRAL AMERICAN FIRES ON OZONE AIR QUALITY IN TEXAS	25
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ERIC LUNN	GRAVITY MODELING AND SEISMIC REFLECTION STUDY OF THE BARREIRINHAS AND CEARA BASINS OF NORTHERN EQUATORIAL BRAZIL	30
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M.S. and EARLY Ph.D. STUDENT POSTERS

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SR1, 2nd Floor Corridor

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EAS Lab Tours

Center for Petroleum Geochemistry (CPG)

Location: SR1, Room 103 and 105

Function: CPG lab has a variety of instruments from simple TOC analyzers; RockEval II-Plus and RockEval-6 source rock analyzers; oil and gas extraction and characterization capabilities; a highly advanced suite of molecular and stable-isotope geochemistry tools including natural-gas analyzers, GC/MS; GC/MS/MS; micropyrolysis/GC/MS; GC/IRMS; EA/IRMS analyzers, and diverse organic petrography capabilities. Visit our website for a comprehensive list of analytical capabilities. This suite of capabilities distinguishes us as the most well-equipped academic petroleum-geochemistry lab in the country.

Faculty host: Dr. Adry Bissada, Dr. Tom Malloy

Student host: Mei Mei (PhD)

Research staff: Tao Sun, Jingqiang Tan, Mike Darnell, Ewa Szymczyk, Maria Gutierrez, Bryan Gunawan

Website: <http://cpg.uh.edu/>

Rock Physics Lab (RPL)

Location: SR1, Room 104-108, B-8

Function: We conduct world class research on Seismic Rock Physics, include mainly: 1. Seismic properties of hydrocarbon fluids at in-situ conditions; 2. Seismic properties of rocks from conventional reservoirs (sands, sandstone, tight gas sands and carbonates); 3. All kinds of rocks and fluids from unconventional reservoirs: oil shale, shale gas, shale oil, coal, gas hydrate and heavy oil sands; 4. Rock parameters, seismic velocities, modulus, include LF measurement, rock mechanics; 5. Experimental and theoretical investigation on poro-elasticity (include digital rock modeling), velocity dispersion, and wave attenuation, elastic anisotropy, fractured reservoir, static and dynamic elasticity; 6. Seismic attributes as direct hydrocarbon indicator (DHI), reservoir delineation, 4-D seismic monitoring, manage unconventional reservoirs; 7. Training graduate students.

Faculty host: Dr. De-Hua Han

Student host: Qin Xuan (PhD)

Website: <http://www.rpl.uh.edu/>

EAS Lab Tours

HoustonNet, GPS and Lidar Lab: Research and Development

Location: SR1, Room 128

Function: The Houston GPS Network (HoustonNet) laboratory is a research driven and project focused working and teaching lab. The lab supports the logistical management and use of highly precise earth focused geospatial collection equipment, such as cutting edge GPS and Light Detection and Ranging (Lidar) technologies. The lab also consists of workspace, industrial tools and equipment that are applied to the engineering and construction of site specific equipment. Such equipment is necessary to install permanent and temporary GPS stations, shallow earth drilling systems, GPS derived groundwater measuring stations and other platforms that facilitate in the data collection process. In order to better monitor land subsidence and fault movement, the lab has installed 66 continuously operating references stations (CORS) within the greater Houston area since 2012. This network is referred to as the HoustonNet and the data are publically available using the data archive interface at www.unavco.org/data/data.html. The labs Lidar focused studies involve the impact of coastal erosion in Freeport, TX, and the monitoring of the landslides located in CO, TX (the Slumgullion landslide), and in China.

Faculty host: Dr. Guoquan Wang (Bob)

Website: <http://www.uh.edu/nsm/earth-atmospheric/people/faculty/guoquan-wang/>

Lab Research Staff and Students: Lin Xiong, Hanlin Liu, Xin Zhou, Xingxiang Zhu, Jennifer Welch, Vasilios Tsibanos, Veronica Guzman, Linqiang Yang, Eleanor (Xio Xio) Dietz, Jieying Ding, Wen Guo, Emily England and Timothy (Jak) Kearns

GeoRS (Geological Remote Sensing) Lab

Location: SR1 Room 234

Function: GeoRS group combines field hyperspectral and LiDAR imaging, GPR with traditional geologic mapping and for the precise 3D imaging of outcrops. Applications range from mapping distribution of river channels, developing 3D fluid flow models, understanding rock alterations and sulphide mineralization and reservoir analog studies. Remote sensing and GIS research lab (GeoRS) include various hardware and software.

Faculty host: Dr. Shuhab Khan

Website: <http://www.uh.edu/~sdkhan/>

EAS Lab Tours

Sedimentology Lab

Location: SR1 Room 303

Function: Work in this lab is focused on characterizing unlithified sediments and dating of samples. Sediment size is measured through laser particle size analysis (LPSA). Particle shape is measured through automated processing of photomicrographs. Recent sedimentary deposits are dated using gamma-ray spectrometry, which has been set up for very small sample sizes.

Faculty host: Dr. Julia Smith Wellner

Student hosts: Yuribia Muñoz and Delaney Robinson

MC-ICP-MS Geo-Cosmochemistry Lab

Location: SR1 Room 317

Function: Isotopic and trace element analysis of terrestrial and extraterrestrial rocks and minerals for radiometric dating and petrological evolution studies, including petroleum reservoir rock characterization.

Faculty hosts: Dr. Tom Lapen, Minako Righter

Website: <https://mysm.uh.edu/groups/mcicpms/>

PGE Geochemistry Lab

Location: SR1 Room 317

Function: Re–Os isotope and PGE analysis of shale and oil for absolute dating and source tracing.

Faculty host: Dr. Alan Brandon

Atmospheric Chemistry Lab (ICAS LAB)

Location: SR1 Room 430

Function: My lab is a component of the Institute for Climate and Atmospheric Science. I study atmospheric mercury in Houston, which has elevated levels and time periods of extremely high values. I have instrumentation atop Moody Tower on the UH campus and at the UH Coastal Center. This is a \$1M laboratory, which we utilize to sample emissions sources and study photochemistry in Houston. I also have a program in Houston/Fort Worth examining fugitive emissions of CO₂ and CH₄ from gas and oil extraction, distribution and storage. We also have a unique ability to measure δ^{18} in CH₄ to distinguish contributions from different sources.

Faculty host: Dr. Robert Talbot

Student hosts: Shuting Yang

Website: <http://icas.uh.edu/>

EAS Lab Tours

Caribbean Basins, Tectonics, and Hydrocarbons (CBTH)

Location: SR1 Room 427

Function: Founded in 2005, CBTH is a 14-company consortium and one of the largest industry consortia at UH with the goal of promoting edge academic research and facilitating oil exploration in the geographic and oil-rich region of the Gulf of Mexico, Caribbean, northern South America, and equatorial Atlantic margins in South America and Africa. Room 427 work area provides workstation, server, software, GIS databasing, and printing capabilities to 11 UH MS and PhD graduate research assistants, 9 UH undergraduate research assistants supported as RAs by the project, and five members of the UH Imperial Barrel Award team who are part of a UH graduate level course in the spring semester.

Faculty host: Dr. Paul Mann, Project director

Student host: Sabrina Martinez, Omar Zavala, Presly Carr, Emily Stibbe

Website: <http://cbth.uh.edu/index.php/>

Awards for CBTH researchers (2005-17): <http://cbth.uh.edu/awards.php>

Publications of CBTH project (2005-17): <http://cbth.uh.edu/contributions.php>

The Geoscience Learning Center (GLC)

Location: Fleming Room 136

Function: The GLC provides a second approach for students to study of geosciences, outside of classroom-led instruction. The study of geosciences can cover a vast amount of material and the time spent in formal classes is limited. The GLC provides students opportunities for hands-on examination of minerals and rocks, interactive computer programs, and one-on-one or small-group tutorials. The GLC staff also conducts a number of on-campus field trips, guides students on tours of the Houston Museum of Natural Science, and coordinates field trips to Central Texas and Galveston.

Faculty hosts: Dr. Jinny Sisson and Dr. Daniel Hauptvogel

MEET THE COMMITTEE BEHIND STUDENT RESEARCH DAY



Faculty advisor for Student Research Day - Dr. Regina Capuano is an Associate Professor of Geosciences at the University of Houston. She completed her PhD in Geology at the University of Arizona in 1988.



Conference Organizer & Committee Chair - Kirstie L. Haynie received two B.S. degrees, with honors, in Geophysics and Mathematics at the University of Houston in 2014, with a thesis in the field of remote sensing. Kirstie is now in the Ph.D. program at UH where she is studying Geodynamics with advisor Dr. Jadamec. Kirstie's research focus involves high-resolution 3D numerical modeling of the Alaska subduction zone in an attempt to understand the effects of oceanic plateau subduction-collision.



Committee Co-Chair- Abigail Corbett received a Bachelor of Science in Environmental Geosciences from Texas A&M University in 2013 with a minor in Geography. She is currently pursuing her Doctorate of Philosophy in Atmospheric Sciences with Dr. Jiang advising. Previous work included analyzing global AIRS satellite methane data to study the effect of the El Niño Southern Oscillation. Her current research involves analyzing new OCO-2 data to study carbon dioxide, solar induced fluorescence, and precipitation.



Elita De Abreu received her Bachelor's (2006) and Master's degree (2010) in Physics from Universidade Estadual de Campinas - UICAMP. In 2006 she joined the Exploration team in Petrobras where she performed quantitative seismic interpretation and rock physics simulation in the Campos, Santos and Sergipe-Alagoas basins. She is a former president of SEG Wavelets and a former UH Energy Ambassador. She is currently the Vice-Chair of Internal Affairs of Energy Coalition and is pursuing her Ph.D. in multi-attributes analysis using spectral decomposition



Eleanor Dietz received her B.S. degree in Geology from the University of Houston in the Fall of 2016 and is currently a post baccalaureate wishing to further her education and pursue a Master's degree. Her research interests include the use of GPS and LiDAR technologies in natural hazards studies. She currently investigates Houston area land subsidence using the GPS Network 'HoustonNet' overseen by Dr. Wang.

MEET THE COMMITTEE BEHIND STUDENT RESEARCH DAY



Tithi Ghosh received her B.S. (2008) degree in Geology from Presidency College, Kolkata, India and M.S. (2010) degree in Geological Sciences from Indian Institute of Technology, Kharagpur. During her Master's, she worked on Metamorphic evolution of Bastar Craton in India. Later, she joined Indian Institute of Science, Bangalore as a researcher and focused on doing clumped isotope thermometry. Presently, she is working as a Ph.D. student at University of Houston with Dr. Jonathan Snow. Her research interests include mantle petrology and geochemistry, specifically the evolution of mantle wedge over time at subduction zones using geochemical signatures. Currently, she is working on the forearc peridotites collected from the Northern Marianas during a research-cruise in the Pacific, in which she participated in November 2014.



Cole Jones received a B.S. in Geology from Texas A&M before working in the Industry for 2 years with PML Exploration Services. He recently returned to academia to pursue a Ph.D. in Geochemistry under Dr. Capuano.



Andrea Paris graduated in 2014 from Universidad Simon Bolivar in Caracas, Venezuela with a Bachelor's in Geophysics. She also completed a year of abroad studies in Geophysics and Geology at Universidad Politecnica de Madrid in Spain. Andrea is currently pursuing a Masters of Science in Geophysics at the University of Houston (UH). Her research interests include seismic data interpretation, AVO Analysis as well as Seismic Inversion and her primary research is focused on rock properties, seismic modeling, and multicomponent seismic analysis of the Bakken Shale. Andrea was also the former Vice President of the UH SEG Student Chapter and is a recipient of the Permian Basin Geophysical Society Scholarship.



Lily Schaffer received a B.S. in Geology from the University of Houston in 2012 and is currently pursuing her Ph.D. in Geology. Her research focuses on constraining the concentration, behavior, and origin of water found in nominally anhydrous mantle minerals beneath the southwestern United States.



Judging Coordinator - Kurt Sundell received his Bachelor's of Science degree in geology with a minor in music theory and composition from the University of California, Davis. He then completed a Master's degree in geology at the University of Kansas focused on extensional tectonics and thermochronology in Tibet. Following a brief two-year stint with Schlumberger WesternGeco in Houston, he pursued further graduate study at the University of Houston. He is currently a fourth-year Ph.D. candidate working with Dr. Joel Saylor on stable- and radioisotopic geochemistry and basin analysis in the Peruvian central Andes.

MEET THE INDUSTRY JUDGES



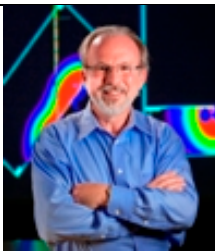
Dr. Aria Abubakar received M.Sc. degree (Cum Laude) in electrical engineering and the Ph.D. degree (Cum Laude) in technical sciences, both from the Delft University of Technology, in 1997 and 2000, respectively. Since 2013, he is the Interpretation Engineering Manager and Scientific Advisor at Schlumberger Houston Formation Evaluation in Sugar Land, TX. At present, his main research activities include solving forward and inverse problem in acoustic, electromagnetic, and elastodynamic. He is currently the Associate Editor of Geophysics and IEEE Antennas and Propagation Magazine. He is the 2014 SEG North America Honorary Lecture.



Dr. Tat Banga is currently a Geologist with Shell Exploration. He received his Ph.D. from the UH conducting a multi-disciplinary study of the origin and migration of Gulf of Mexico Oil.



Elizabeth Beal graduated from the Colorado School of Mines in 1999 with an undergraduate degree in geological engineering and has been in the seismic industry for eighteen years. Before coming to Shell in 2008, she worked at various seismic companies including Veritas, Nutec, and TGS. While at Shell her technical work was primarily focused on ocean bottom seismic surveys and 4D time lapse imaging. She is currently a team lead at Shell leading land and marine processing and survey design projects.



Dr. Peter M. Duncan is President and CEO of MicroSeismic, Inc. a Houston based oil field service company specializing in hydraulic fracture stimulation surveillance and evaluation. He holds a Ph.D. in Geophysics from the University of Toronto. His early career as an exploration geophysicist was with Shell Canada and then Digicon Geophysical, first in Calgary then in Houston. He is an Honorary Member of SEG, the Canadian Society of Exploration Geophysicists (CSEG), the Geophysical Society of Houston (GSH) and the European Association of Geoscientists and Engineers (EAGE).

MEET THE INDUSTRY JUDGES



Dr. Olga Kostenko is currently a Team Leader in Structural Geology and Reservoir Characterization at Shell. She received her Ph.D. in geology from the University of Oslo.



Dr. Keith Mahon is a Distinguished Geological Advisor and Manager of the Petroleum Systems Group in Geoscience Technology at Anadarko. He received his B.S. and M.S. degrees in geological science from SUNY at Albany and his Ph.D. in geochemistry from UCLA. He has over 30 years of experience modeling sedimentary basins in the oil and gas industry and simulating missile systems in the aerospace industry.



David Meaux is currently with B.P.America as U.S. Team Lead in Complex Imaging, and formerly an R&D Team Lead and Program Manager in Advanced Seismic Imaging. He has an M.S. in Geology from the University of Houston.



Dr. Steve Naruk received his PhD in 1987 from The University of Arizona, Structural Geology and Tectonics, MSc in 1983 from The University of Arizona, Structural Geology and Tectonics and a BS in 1977 from Yale University, Geology & Geophysics. From 2001-until present he has been the Principal Technical Expert and Team Leader in for Structural Geology Research in Shell E&P.



Dr. Clayton Painter was born and raised in northern New Mexico where he unknowingly fell in love with geology amidst high Rocky Mountain peaks and desert southwest mesas. He was trained academically in Idaho, Wyoming and Arizona, receiving his Ph.D. from the University of Arizona. His geologic specialty is basin analysis with tools in stratigraphy and sedimentology and low temperature thermochronology. He is currently working as an exploration geologist for ConocoPhillips where he has worked on deep-water Gulf of Mexico, offshore east Canada, and Global New Ventures teams.

MEET THE INDUSTRY JUDGES



Dr. Eugene Zymanski research specialties include geo-/thermochronometric techniques for HC exploration and basin modeling. From 2014 until present he has been working as a Basin modeler with Chevron Energy Technology Company, Earth Science Department.



Dr. Kush Tandon currently works as a Bluware Inc.'s senior consultant with Shell on research and development for Shell's internal seismic processing system. Kush Tandon completed his doctorate in geology and geophysics at Louisiana State University working in 1998. As a graduate student, he also participated in Ocean Drilling Program (ODP) Leg 161, Western Mediterranean (Alboran Sea) for two months. Kush Tandon also has degrees from Cornell University, and Indian Institute of Technology, Roorkee (India). In past, Kush has also worked at Oil and Natural Gas Commission (ONGC), ARCO International Oil and Gas Company, Oregon State University, and Fugro-Jason.



Dr. Anahita Tikku is currently a Geoscientist at ExxonMobil in Houston since 2007. She was a JSPS Postdoctoral Fellow at Ocean Research Institute, University of Tokyo from 2003 until 2004. She was also a Postdoctoral Research Scientist at Lamont-Doherty Earth Observatory at Columbia University in New York from 2001 until 2003. She received her PhD from Scripps Institution of Oceanography at the University of California San Diego. Her BS is from University of Illinois, Urbana-Champaign.

MEET THE INDUSTRY JUDGES



Barbara Tillitson received her MS in Geological Sciences from University of Texas at Austin and holds two Bachelor's degrees from Indiana University at Bloomington in Geosciences and Chemistry. Barbara works at a private equity oil and gas company in Houston, RPM Energy Management, as Geoscience Manager. Her assignments have allowed her to study various depositional and structural histories, and at all phases of the life cycle of an oil and gas field. Barbara was supervisor of two different multi-disciplinary subsurface teams working unconventional plays where she enjoyed broadening the knowledge base of her staff and challenging the status quo of projects in order to better develop the assets.



Lance Woods is currently the Science and Operations Officer at the National Weather Service (NWS) office in League City, TX. His current areas of research focus are on improving flash flood forecasting/messaging, as well as messaging the excessive heat threat. Prior to this position, he was a senior forecaster at the League City office. He began my career with the NWS in El Paso, TX, in 1994. He became a forecaster at the NWS Lake Charles, LA, office in 1995, before coming to the Houston/Galveston area in 1998. He also has experience as a trade floor meteorologist with Duke Energy and is the currently president of the Houston chapter of the American Meteorological Society. I am a graduate of Texas A&M University; receiving both a Bachelors and Masters Degree in Meteorology.



Fernando Ziegler holds a Bachelor of Science in Physics from The University of Texas at Austin and Master of Science in Geophysics from the University of Houston. Fernando has worked for various companies such as Petroleum Geo-Services, GX Technology, Marathon Oil, and Repsol. Currently, he is an independent geophysics consultant working on pore pressure, fracture pressure, wellbore stability, seal capacity, hydrocarbon column height estimates, rock physics, and geomechanics.

MEET THE FACULTY JUDGES



Dr. Yunsoo Choi is an assistant professor of atmospheric chemistry, atmospheric modeling, and remote sensing. He received a Ph.D. in Atmospheric Chemistry in 2007 from Georgia Institute of Technology. His research interests are atmospheric chemistry, air quality modeling, and satellite remote sensing.



Dr. Xun Jiang is an Associate Professor of Atmospheric Science and the Atmospheric Science Graduate Advisor. She received a Ph.D. in Environmental Science & Engineering from the California Institute of Technology in 2006.



Dr. Yuxuan Wang is an assistant professor of atmospheric chemistry. She received her Ph.D. from Harvard University in Earth and planetary sciences in 2005.



Dr. Bernard Rappenglueck is a professor of atmospheric chemistry and meteorology. He received his Ph.D from the University of Munich (LMU) in Physics in 1996.



Dr. Tom Lapen is a professor of geology, isotope geochemistry, geochronology, and petrology. He received his Ph.D in geology from University of Wisconsin-Madison in 2005.



Dr. Jinny Sisson an associate professor of geology, director of summer field geology, and co-director of the Geoscience Learning Center. She received her Ph.D. from Princeton University in 1981.

MEET THE FACULTY JUDGES



Dr. John Suppe is a distinguished professor at the University of Houston. He received his Ph.D. in geology from Yale University in 1969.



Dr. Julia Wellner is an assistant professor of stratigraphy, sedimentology, and glacial processes. She received her Ph.D. from Rice University in 2001. Her research interests are Plio-Pleistocene sequence stratigraphy from 3D seismic data, Holocene climate of antarctic Ice Sheet history since the Eocene.



Dr. Guoquan (Bob) Wang is an associate professor of geophysics, geodesy, and geosensing systems engineering. He received his Ph.D. in solid Earth geophysics from the Institute of Geology, China Earthquake Administration, Beijing, China in 2001.



Dr. Evgeni Chesnokov is a professor of theoretical and applied geophysics. He received his Ph.D. in 1974 in geophysics from Moscow State University. His research interests include investigations of the effective physical characteristics and wave propagation in a random porous fractured media.



Dr. Robert Stewart is a professor of geophysics, the director, Allied Geophysical Labs, and a Hugh Roy and Lillie Cranz Cullen Distinguished University Chair in Exploration Geophysics. He received his Ph.D. in geophysics from Massachusetts Institute of Technology.

MEET THE FACULTY JUDGES



Dr. Margarete Jadamec is an assistant professor of geodynamics. She received her Ph.D. in geophysics from the University of California, Davis in 2009.



Dr. John Castagna is a professor of geophysics, applied seismology, and a Margaret S. and Robert E. Sheriff Endowed Faculty Chair in Applied Seismology. He received his Ph.D. in exploration geophysics from the University of Texas at Austin in 1983.



Dr. Heather Bedle joined the UH EAS department in Fall 2016 as an instructional assistant professor after working at Chevron for eight years. She received her Ph.D. in Geophysics from Northwestern where she studied the S-wave velocity structure of the North American upper mantle.



Dr. Daniel Hauptvogel is an instructional assistant professor and co-director of the Geoscience Learning Center (GLC) here at UH. During his Ph.D. at City University of New York, Dr. Hauptvogel studied Antarctic ice dynamics.



Dr. Robert Talbot is a professor of Atmospheric Chemistry, director of Institute for Climate and Atmospheric Science (ICAS), and is also an adjunct Professor of Atmospheric Chemistry in the School of Atmospheric Science at Nanjing University, Nanjing, China. His interests encompass regional-to-global scale atmospheric circulations, climate change, and associated transport of trace constituents. Dr. Talbot received his Ph.D. from the University of Wisconsin – Madison in 1981.

MEET THE FACULTY JUDGES



Dr. Joel Saylor is an Assistant Professor of Sedimentology, Stable Isotopes, Magnetostratigraphy, and Basin Analysis. He received his Ph.D. in Geology from the University of Arizona in 2008. Dr. Saylor and his research group study the sedimentary record in order to understand the roles of tectonics and climate in controlling basin subsidence and filling. They are also actively involved in public education and outreach.



Dr. Aibing Li is a professor of geophysics and seismology, and the geophysics graduate advisor. She received her Ph.D. in geophysics from Brown University in 2000.

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Who we are

The Department of Earth and Atmospheric Sciences at the University of Houston has a wide range of research programs central to the earth sciences. These include sedimentology, carbonate petrology, sequence stratigraphy, micropaleontology, structural geology, tectonics, geodynamics, marine geology, petroleum systems and geochemistry, inorganic geochemistry, isotope geochemistry, igneous petrology, thermochronology, GIS, remote sensing, seismology, applied geophysics, applied rock physics, whole earth geophysics, potential fields, hydrology, atmospheric sciences, air quality, climatology, and air pollution sciences.

The Department offers M.S., and Ph.D. degrees in Geology, Geophysics and Atmospheric Sciences, a B.S. in Geology, Geophysics and Environmental Sciences, and a B.A. in Earth Sciences. Fieldwork is a major component of all degree programs. The Department also offers Professional M.S. programs in Petroleum Geology and Petroleum Geophysics that are offered at convenient hours for professional geoscientists working in industry or aspiring for a professional position within the petroleum industry.

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