
Conference Program

18–20 April 2017 • Astor Crowne Plaza
New Orleans, Louisiana, USA
www.spe.org/go/17HSSE

Conference Sponsor:

Society of Petroleum Engineers
Tomorrow’s environmental and social solutions – today!

Over 25 years of professional, high quality, cost-effective technical support to the Oil and Gas Industry throughout the USA and worldwide!

- Environmental and Social Impact Assessments (ESIA)
- Early Production Permitting Protocol (EP-3)
- Fast-tracking the NEPA Process, Third Party EA/EIS Support
- Social and Environmental Management and Monitoring Programs (SEMMP), Project Due Diligence, Auditing and Review
- Comprehensive Water Quality Management and Monitoring Services, Produced Water Management, Limnology, NPDES Permitting, Ecotoxicology of Complex Effluents
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- Corporate Social Responsibility and Sustainability Action Programs
- Meeting IFC Performance Standards and Equator Principles
- Operating throughout the USA and in 48 countries worldwide
- Infrastructure development support services - roads, ports, docks, load outs, conveyors, pipelines, aggregate sourcing

Over 25 years of professional, high quality, cost-effective technical support to the Oil and Gas Industry throughout the USA and worldwide!
Dear Colleagues,

On behalf of the program committee, we welcome you to the SPE Health, Safety, Security, Environment, and Social Responsibility Conference—North America.

Since 1993, this conference has provided a setting for HSSE-SR professionals and experts to exchange knowledge, learn, and network. The event brings together industry, government, and academia to share best practices and innovative solutions.

This year, with a theme of “Sustaining our Future through Innovation, Collaboration, and Capital Efficiency,” the conference includes thought-provoking presentations and discussions to address the challenges facing the E&P industry. Be sure to take advantage of various components of the conference including:

- 50+ technical presentations on latest trends and innovations
- Multiple panel and plenary sessions with leading E&P experts
- ePoster World Cafe presentations
- HSSE-SR Student Challenge

And, don’t miss our two keynote luncheons, one with Janeen Judah, SPE President, and the other featuring Fawaz Bitar, Head of Global Operations, BP Upstream.

As the industry continues to encounter challenges, it is essential that we remain steadfast in our commitment to HSSE-SR. We are confident you will gain greater insights and skills from this conference to help you focus on our most valuable assets—our people—and enhance our social license to operate.

Sincerely,

Sue Staley  
Chairperson  
Shell E&P

Jill Cooper  
Vice Chairperson  
Anadarko Petroleum
Table of Contents
Program Committee ..............................................................................................................................4
Sponsors ....................................................................................................................................................6
General Conference Events .................................................................................................................8
Technical Program Quick View.........................................................................................................10
Venue Floorplan ....................................................................................................................................12
Technical Program ................................................................................................................................15

General Information

Consent to Use of Multimedia
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Join SPE
By attending this event, nonmember full registration attendees can join SPE at no additional cost. Ensure you are signed up for SPE communications, and then look for your exclusive offer by email shortly after the event.

Sustainability Statement
SPE is committed to ensuring that the environmental impact of our events is kept to a minimum. We aim to make progress in the field of sustainability through reducing energy usage, promoting eco-friendly mobility, reducing water consumption, and limiting waste—all core values in keeping with those of the oil and gas industry.

Supporting Organizations (as of 10 April 2017)

AirWaterGas
Sustainability Research Network

THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES

SUSTAINABLE DEVELOPMENT IN DEEP WATER GULF OF MEXICO

NSR00273-SPE HSSE SR Conference Program Ad AWv2.indd   1
06/03/2017   14:16
SUSTAINABLE DEVELOPMENT IN DEEP WATER GULF OF MEXICO

Our role is to enable deep water oil and gas projects in a responsible way to help meet rising energy demand, and our approach to sustainable development is to operate safely, minimize our impact on the environment, and continue to be a trusted member of the Gulf Coast community.
Program Committee

Sue Staley, Chairperson
Shell E&P

Jill Cooper, Vice Chairperson
Anadarko Petroleum

Gail Adams-Jackson
International Association of Geophysical Contractors

Pete Allen
Mix Telematics

Alex Alvarado
Project Consulting Services

John Aronson
AATA International

Linda Battalora
Colorado School of Mines

Claudine Bleza
International Marine Contractors Association

Brian Boyer
BTGap

Neil Campbell
Pacific Drilling

Elie Daher
United Safety

Barbara Denson
Weston Solutions

Sophie Depraz
IPIECA

Denton Deutsch
Apache Corporation

Wendy Dickinson
Independent Consultant

Julia FitzGerald
Center for Offshore Safety

Matt Frazell
Contek Solutions

Steve Freemyer
Cimarex Energy

Byron Gale
EnCana Oil & Gas

Megan Garvey
QEP Resources

Kerry Ground
Jordan Cove LNG

Tersoo Gwaza
Consultant

Chris Hawkes
International Oil & Gas Producers Association

Jason Hercun
Devon Energy

Jack Hinton
Baker Hughes

Bill Hughes
Parsons Corporation

Alex James
Halliburton

Peter Jensen
Exxon Mobil

Lu Jin
University of North Dakota

Laura Johnson
Exxon Mobil

Rory Johnston
Langan Engineering & Environmental

Jim Johnstone
Contek Solutions

Adam Kalb
Chevron North America E&P

Tom Knode
Contek Solutions

Ziv Lang
California Air Resources Board

Richard Leonhard
Project Consulting Services

Jon McClurg
Ecology & Environment

Ken Nichols
Devon Energy

Nasim Pica
Colorado State University

Tim Pieplow
Exxon Mobil

Kyla Retzer
CDC-NIOSH

Andrew Roberts
ConocoPhillips

Jessica Rogers
University of Colorado Boulder

Diane Sanzone
AECOM

Paul Schuler
Oil Spill Response USA

Trey Shaffer
Environmental Resources Management

Fernando Sierra
Shell Oil Products US

Derek Tate
Derek Tate Consulting

Marko Taurainen
Schlumberger

Michael Waguespack
Waldemar S Nelson & Company

Rick Welsh
Langan Engineering & Environmental

Drue Ann Whittlecar
Baker Hughes

Stuart Wittenbach
Cimarex Energy

Karin Witton
Weatherford

Andrew Wojtanowicz
Louisiana State University

Mehdi Zeidouni
Louisiana State University

Matt Zerafa
RISKbytes
At Cimarex we continually strive to maximize our cash flow from producing properties for reinvestment in growth through the drill bit. We have production operations in Oklahoma, Texas and New Mexico.
Thank You to Our Sponsors (as of 10 April 2017)

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Keynote Luncheon and Pens and Pads Sponsor

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Contact: Rory Johnston, PE, BCEE | 973.560.4978 | rjohnston@langan.com
### General Conference Events

#### Registration and Badge Pick-Up

<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Tuesday, 18 April</td>
<td>0700–1800</td>
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<tr>
<td>Wednesday, 19 April</td>
<td>0700–1700</td>
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<tr>
<td>Thursday, 20 April</td>
<td>0700–1600</td>
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#### Speaker Check-In

Located in Grand Ballroom B

Speakers are requested to report to their assigned session room 30 minutes prior to the start of the session. Speaker check-in hours are:

<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Tuesday, 18 April</td>
<td>1100–1700</td>
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<tr>
<td>Wednesday, 19 April</td>
<td>0700–1700</td>
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<tr>
<td>Thursday, 20 April</td>
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#### Coffee Breaks

Located in Astor Ballroom III

<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Tuesday, 18 April</td>
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<tr>
<td>Wednesday, 19 April</td>
<td>0945–1015, 1515–1545</td>
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<tr>
<td>Thursday, 20 April</td>
<td>0945–1015, 1515–1545</td>
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#### Dessert and Coffee Break

<table>
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<tr>
<th>Date</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Wednesday, 19 April</td>
<td>1300–1330</td>
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<tr>
<td>Thursday, 20 April</td>
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#### Welcome Reception

Astor Ballroom III

Tuesday, 18 April 1700–1830

#### Keynote Luncheons (Ticketed Events)

Located in Astor Ballroom III

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>Wednesday, 19 April</td>
<td>1200–1300</td>
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<td>Thursday, 20 April</td>
<td>1200–1300</td>
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</table>

#### HSSE-SR Student Challenge

Astor Ballroom I & II

Wednesday, 19 April 1000–1730

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### About the Society of Petroleum Engineers

The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose members are engaged in energy resources development and production. SPE serves more than 164,000 members in 143 countries worldwide. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its publications, events, training courses, and online resources at [www.spe.org](http://www.spe.org).
At ExxonMobil, ensuring the safety and health of our employees, contractors and communities are fundamental to our long-term business success.

We are proud to support the Society of Petroleum Engineers HSSE Student Challenge.
## Technical Program Quick View

<table>
<thead>
<tr>
<th>Tuesday, 18 April</th>
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<tbody>
<tr>
<td>1230–1300</td>
<td>Conference Opening Session</td>
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<tr>
<td>1300–1500</td>
<td><strong>Plenary I</strong> What Were They Thinking? A Look at How the Brain Works and Why That is Important to HSE Professionals</td>
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<tr>
<td>1530–1700</td>
<td><strong>S01 Panel</strong> Methane &amp; Other Greenhouse Gases: Now What Do We Do?</td>
<td><strong>S02 Panel</strong> Road Safety: Based on Statistics, Planning the Journey is Even More Important Than Planning the Job</td>
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<td>0800–0815</td>
<td>Wednesday Opening Session</td>
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<td>0815–0945</td>
<td><strong>Plenary II</strong> Culture Eats Strategy For Breakfast: Group Behavior and How To Reach the Culture Tipping Point</td>
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<td>1000–1730</td>
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<td>1015–1145</td>
<td><strong>S04 Panel</strong> Moving Towards Holistic Industrial Health Surveillance: Integration of Epidemiology, Industrial Hygiene, and Occupational Health</td>
<td><strong>S05 Panel</strong> Navigating the Security Kaleidoscope in a Lean Operating Environment</td>
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<td>1200–1300</td>
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<tr>
<td>1345–1515</td>
<td><strong>S07</strong> Oil Spill Response Technologies</td>
<td><strong>S08</strong> Predicting, Mitigating, and Monitoring Surface &amp; Subsurface Impacts to Land</td>
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<tr>
<td>1545–1715</td>
<td><strong>S10</strong> Emergency Preparedness and Response Safety Concerns</td>
<td><strong>S11</strong> Risk Mitigation Through Systems and Technology</td>
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<th>Thursday, 20 April</th>
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<td>0800–0815</td>
<td>Thursday Opening Session</td>
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<tr>
<td>0815–0945</td>
<td><strong>Plenary III</strong> Now What? Practical Application of the Concepts To Achieve Best in Class HSSE Performance</td>
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<tr>
<td>1015–1145</td>
<td><strong>S13 Panel</strong> Can Someone Help Us Understand the Proposed Environmental Rules?</td>
<td><strong>S14</strong> Learning From Incidents &amp; Barrier Analysis to Reduce Incidents</td>
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<td>1200–1300</td>
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<tr>
<td>1545–1715</td>
<td><strong>Interactive Closing Session</strong>: Shaping Our Industry’s Next Chapter . . .</td>
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## Technical Program Quick View

<table>
<thead>
<tr>
<th>Grand Ballroom A</th>
<th>Astor Ballroom I, II, or III</th>
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<tbody>
<tr>
<td><strong>S03</strong> Leading Indicators</td>
<td><strong>HSSE-SR Student Challenge</strong></td>
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<td><strong>S06</strong> Air Emissions: Prevention, Reduction, and Control</td>
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<td><strong>S09</strong> Improving Social Responsibility Through Learning &amp; Case Studies</td>
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<td><strong>S12</strong> Water &amp; Our Social Responsibilities</td>
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<td><strong>S15</strong> Reducing Societal Impacts Through Social Responsibility</td>
<td><strong>SE09</strong> ePosters World Café I</td>
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<td><strong>SE09</strong> ePosters World Café I</td>
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<td><strong>S18</strong> Rising to a Top Tier Performer</td>
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<td><strong>SE11</strong> ePoster World Café II</td>
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*Separate ticketed events.*
Venue Floorplan
WE AGREE.

Chevron proudly supports the Society of Petroleum Engineers.

We all share the same planet. So we all need to take good care of it. At Chevron, we continually strive to improve our environmental protection processes. And we’re committed to operating safely and responsibly. Because this is our home, too.

Learn more at chevron.com
SPE Workshop: HSE and Sustainability–The Cornerstone for Efficient E&P Operations

Bolivia’s new development opportunities will require the best technologies to balance sustainability in protected and environmentally sensitive areas.

Key Topics:
• Community Relations and CSR in E&P Operations in Sensitive Areas
• Environmentally Friendly Technology in E&P Projects
• HSE Management in Drilling

COCHAIRPERSONS
Marcelo Vargas
YPFB Andina
Fatima Gomez
YPFB Andina

KEYNOTE ADDRESSES
Luis Alberto Sánchez Fernández
Minister of Hydrocarbons and Energy, Bolivia

Fernando Benalcazar
APD Proyectos

For more information, contact latinamerica@spe.org.
TUESDAY, 18 APRIL 2017

1230–1300 | Grand Ballroom D
SE01 Conference Opening Session

The program committee chairpersons will open the conference by highlighting events for this year’s conference and discussing opportunities for attendees to engage and be challenged.

1300–1500 | Grand Ballroom D
SE02 Plenary I: What Were They Thinking? A Look at How the Brain Works and Why That is Important to HSE Professionals

A common refrain heard after an incident occurs is “What were they thinking?”, or some more colorful iteration thereof. While we cannot know the exact answer to that question during an incident investigation, we can better understand how the brain works and how that plays into an individual’s ability to recognize hazards and assess the risk. Brain researchers are gaining more insight into the mechanisms of our decision processes and how the brain can introduce unforeseen hazards. This research is helping HSE professionals better understand how to build programs and processes that align with this research and help guide leaders in effectively conveying their expectations. Our panelists will help us understand both the mechanisms, as well as insight, into how the knowledge of brain functioning can help us drive improved performance.

Moderator:
Tom Knode, Senior Technical Consultant, Contek Solutions

Speakers:
Nada Wentzel, Global Solutions Director, The Jonah Group
Susan Koen, CEO & Founder, Round-the-Clock Resources
1530–1700 | Grand Ballroom D
01 Panel: Methane and Other Greenhouse Gases: Now What Do We Do?

National regulatory initiatives to quantify and reduce volatile organic compounds (VOCs) and greenhouse gas emissions have been a driver for measurement studies for the entire oil and natural gas supply chain. Cooperative measurement studies by nongovernmental organizations and industry groups have yielded much empirical data for new source emission standard OOOO (NSPS OOOO) development. Besides NSPS OOOO, recent changes to the ozone NAAQS standards could impact oil and natural gas industry venting and combustion emissions, depending on which areas are in nonattainment for the new ozone standard. Join our panel discussion on these key issues.

Moderator:
Brian Boyer, Environmental Consultant/Owner, BTGap

Speakers:
Mark Boling  
Executive Vice President, Southwestern Energy

Ramesh Narasimhan  
Partner, Environmental Resources Management

Hillary Hull  
Senior Research Analyst, Climate and Energy, Environmental Defense Fund
**Technical Program**
(as of 10 April 2017 | Subject to Change)

**TUESDAY, 18 APRIL**

**1530–1700 | Grand Ballroom C**

**02 Panel: Road Safety: Based on Statistics, Planning the Journey is Even More Important Than Planning the Job**

Land transport related incidents continue to be the single greatest common cause of fatalities in the upstream O&G industry as identified by NIOSH (National Institute of Occupational Safety) and IOGP (International Organization of Oil and Gas Producers) affecting our business, our people, and the communities we live and operate in. This session first discusses two key factors for road safety: implementation of the final rule on ELDs (electronic logging devices for drivers) to address compliance and driver fatigue; and elements of success for a driver management system. It will then discuss industry road safety “life saving rules” as an integrated part of an operating management system framework as developed by IOGP.

**Moderator:**
*Neil Campbell, Director Corporate HSE, Pacific Drilling*

**Speakers:**

- **Karen Spring**
  Regional Road Transport Safety Manager, Shell E&P
  IOGP Land Transport Safety Recommended Practice 365 Update and Re-Issue

- **John Seidl**
  Transportation Consultant, Integrated Risk Solutions
  **184461** The Carrot and the Stick of the Electronic Logging Device Mandate

- **Peter Allen**
  Executive Vice President Sales, MiX Telematics
  **184439** Six Essential Elements To Ensure Safe Driving in Oil & Gas
Technical Program
(as of 10 April 2017 | Subject to Change)

TUESDAY, 18 APRIL

1530–1700 | Grand Ballroom A

**03 Leading Indicators**
Session Chairperson: Matt Zerafa, RiskBytes

<table>
<thead>
<tr>
<th>TIME</th>
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<tbody>
<tr>
<td>1530</td>
<td>184462</td>
<td><strong>Leading Indicators for Onshore Drilling HSE Outcomes</strong></td>
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<td>C.J. Jablonowski, Shell Exploration &amp; Production Co</td>
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<tr>
<td>1600</td>
<td>184422</td>
<td><strong>“Getting Ahead of the Curve”: Front End Loading HSSE Management Planning</strong></td>
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<tr>
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<td>in Major Capital Projects</td>
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<td>A.J. Wharton, Shell</td>
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<tr>
<td>1630</td>
<td>184417</td>
<td><strong>Preventing Leaks Through RUL Prediction Modeling: Casing Integrity</strong></td>
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<td>in HP/HT Environment</td>
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<td>B. Das, Sicherheit Solutions / University of Houston</td>
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WEDNESDAY, 19 APRIL

0800–0815 | Grand Ballroom D
SE03 Wednesday Opening Session
This session will highlight features of today’s program and some key learnings from Tuesday.

0815–0945 | Grand Ballroom D
SE04 Plenary II: Culture Eats Strategy for Breakfast: Group Behavior and How To Reach the Culture Tipping Point
The phrase “culture eats strategy for breakfast (or lunch)” is often associated with Peter Drucker. Human behavior in groups may be different than individual behavior based on social values. If that’s so, how do we influence groups of people to conform to expectations around HSE performance? How do we influence people to follow established processes, identify and address hazards and stop work when needed? Part of this answer is in establishing a culture where the expectations are clear and individuals want to be a part of the greater good. Understanding social science and human behavior in groups lends insight into the solutions that can be effective in shaping a desired culture. The panelists in this session will build on the brain science discussion and provide background on group behavior and influencing the organization.

Moderator:
Dave Ure, Behavioral Safety Manager, Shell Upstream International

Speakers:
Susan Koen
CEO & Founder, Round-the-Clock Resources

John Carroll
Gordon Kaufman Professor of Management, MIT Sloan School of Management
WEDNESDAY, 19 APRIL

1015–1145 | Grand Ballroom D

04 Panel: Moving Towards Holistic Industrial Health Surveillance: Integration of Epidemiology, Industrial Hygiene, and Occupational Health

Through partnerships with industry, government, researchers, and our communities this session will provide insight into how working together can drive significant improvements. There are tremendous advantages with integrating epidemiological, industrial hygiene, and occupational health into an overarching health surveillance system. With this approach, we progress in our efforts to better protect the workers on the frontlines.

**Moderator:**

**Krystal Sexton**  
Epidemiologist, Shell

**Speakers:**

- **Kyla Retzer**  
Epidemiologist, NIOSH/CDC  
**184452** Working Together to Prevent Worker Exposures during Gauging and Sampling Activities

- **Eric Esswein**  
Senior Industrial Hygienist, CDC/NIOSH  
Elevating Prevention Efforts to Further Protect Workers from Crystalline Silica Exposure

- **Heidi Erickson**  
Senior Epidemiologist, Chevron ETC  
Industry Approach to Bridging the Bonds Between Health Disciplines
WEDNESDAY, 19 APRIL

1015–1145 | Grand Ballroom C  
**05 Panel: Navigating the Security Kaleidoscope in a Lean Operating Environment**

Recent economic conditions have imposed significant constraints on the oil industry. While boom/bust cycles are a regularity in this sector, the blossoming challenges in the security dimension are not, and would most likely intensify. Challenges ranging from safely operating in hostile and unstable regions, coupled with cybersecurity and financial transactional security cannot be a simple exercise of prioritizing funding one dimension over another to satisfy from a pure budget perspective. This panel aims to stimulate further discussion by bringing in speakers with experience in law enforcement, military, financial, and legal fields.

**Moderator:**

Ziv Lang  
Engineer Marine Strategies Section, California Air Resources Board

**Speakers:**

Ken Keiser  
Global Cybersecurity Business Development Manager, Parsons Corporation  
Using Safety Culture and Methodology for Cybersecurity Improvement

Kenneth Carter  
Americas Security Business Center Manager, Exxon Mobil  
Getting Regular Management Buy-In Into Facing the Evolving Nature of Threats

Robert Ream  
Senior Manager Global Security, BHP Billiton Petroleum
Technical Program
(as of 10 April 2017 | Subject to Change)

WEDNESDAY, 19 APRIL

1015–1145 | Grand Ballroom A
06 Air Emissions: Prevention, Reduction, and Control
Session Chairpersons: Michael Waguespack, Waldemar S. Nelson & Company
Brian Boyer, BTGap

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<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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| 1015  | 184414  | Utilization of Produced Gas for Improved Oil Recovery and Reduced Emissions from the Bakken Formation  
| 1045  | 184460  | The Efficacy of Market-Based Emission Control Systems: A System Dynamics Approach  
M. Rafieisakhaei, Texas A&M University; B. Barazandeh, Virginia Tech |
| 1115  | 184465  | A Unique Approach to Comply with the New Source Performance Standards (NSPS) for Methane Emissions for Hydrocarbon Producing Wells  
S. Smith, S.T. Denney, Well Head Emissions Management Systems |
| Alternate | 184440 | Pressure Transient Analysis for Leaky Well Characterization and its Identification from Leaky Fault  
M. Mosaheb, M. Zeidouni, Louisiana State University |
WEDNESDAY, 19 APRIL

1000–1730 | Astor Ballroom I & II

SE05  HSSE-SR Student Challenge

The oil and gas industry provides increasing opportunities for students in disciplines not traditionally associated with the industry, as the importance of and need for health, safety, security, environment and social responsibility (HSSE-SR) industry specialists becomes more recognized. The HSSE-SR Student Challenge aims to attract and engage undergraduate students of diverse disciplines to SPE and provide them with the opportunity to participate in a team quiz competition, as well as interact with industry professionals to gain more insight and knowledge into the oil and gas industry and detailed elements of HSSE-SR.

Participating Schools:
Colorado School of Mines
Louisiana State University
Oklahoma State University
Stephen F Austin State University
Texas Tech University
University of Oklahoma

Young Professional Panel Discussion:

Moderator:
Jill Cooper, Manager Reporting and Advocacy, Anadarko Petroleum Corporation

Panelists:
Matthew Rogers, Environmental Engineer, Apex Companies
Habeib Hashimi, HSE Specialist, Baker Hughes
Tim Pieplow, Regulatory Advisor, ExxonMobil

Networking Senior Professionals:
Jill Cooper, Manager Reporting and Advocacy, Anadarko Petroleum Corporation
Jack Hinton, Executive Vice President-HSE, Baker Hughes
Laura Johnson, Training and Development Manager-Safety, Security, Health & Environment, ExxonMobil
Steve Freemyer, Exploration HSE Manager, Cimarex Energy
SE06 Keynote Luncheon: Joining Forces for Sustainable Communities

Janeen Judah
2017 SPE President, Chevron

Through partnerships with industry, government, researchers, and our communities this Janeen Judah is the 2017 President of the Society of Petroleum Engineers, seconded from Chevron.

Her past Chevron leadership positions include General Manager for Chevron’s Southern Africa Business Unit, based in Houston, Texas, President of Chevron Environmental Management Company and General Manager of Reservoir and Production Engineering for Chevron Energy Technology Company. Before joining Chevron, she worked for Texaco and ARCO in various upstream petroleum engineering positions, starting in Midland in 1981.

Judah has held many SPE leadership positions, including SPE International Vice President Finance, on the Board as Director for the Gulf Coast North America Region and chairing both the Gulf Coast and Permian Basin sections. She was named a Distinguished Member of SPE in 2003 and received the Distinguished Service award in 2010. She started her SPE leadership as a student section officer at Texas A&M University.

Judah holds BS and MS degrees in petroleum engineering from Texas A&M University, an MBA from The University of Texas of the Permian Basin and a JD from the University of Houston Law Center.

There are tremendous advantages with integrating epidemiological, industrial hygiene, and occupational health into an overarching health surveillance system. With this approach, we progress in our efforts to better protect the workers on the frontlines.
**WEDNESDAY, 19 APRIL**

**1345–1515 | Grand Ballroom D**

**07 Oil Spill Response Technologies**
Session Chairperson: Stuart Wittenbach, Cimarex Energy

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1345</td>
<td>184421</td>
<td>Recent Technology Advances for Effective Oil Spill Response • T.S. Coolbaugh, ExxonMobil Research and Engineering; A. Chopra, Oil Spill Response Ltd</td>
</tr>
<tr>
<td>1415</td>
<td>184437</td>
<td>Oil Spill Trajectory Simulation for the Clair Oilfield, Faroe Shetland Channel, United Kingdom Continental Shelf • C.D. Eke, B. Anifowose, Coventry University</td>
</tr>
</tbody>
</table>

**1345–1515 | Grand Ballroom C**

**08 Predicting, Mitigating, and Monitoring Surface and Subsurface Impacts to Land**
Session Chairpersons: Karin Witton, Weatherford International; Jon McClurg, Ecology & Environment

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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<tbody>
<tr>
<td>1345</td>
<td>184471</td>
<td>Technology and Innovation for Environmental Monitoring on Alaska’s North Slope • E. Febbo, Exxon Mobil Corp.; K. Payne, B.E. Reep, ExxonMobil Alaska Production Inc.</td>
</tr>
<tr>
<td>1415</td>
<td>184411</td>
<td>An Analytical Model Predicts Pressure Increase during Waste Water Injection to Prevent Fracturing and Seismic Events • L. Jin, A.K. Wojtanowicz, Louisiana State University; J. Ge, University of North Dakota</td>
</tr>
<tr>
<td>1445</td>
<td>184463</td>
<td>Impacts of Inland Response Techniques on Plant Growth (Field Test Study) • T. Barston, Oil Spill Response Ltd</td>
</tr>
</tbody>
</table>

Alternates

<table>
<thead>
<tr>
<th>PAPER #</th>
<th>PRESENTATION</th>
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<tbody>
<tr>
<td>184424</td>
<td>Environmental Remediation Using Advanced Microbial Techniques • R.A. Engler, G. Rome, R. Rainey, Remediation and Environmental Xperts, LLC; V. DeLeon, Texray Laboratory Services; M. Good, Megos, LLC</td>
</tr>
<tr>
<td>184423</td>
<td>In situ remediation of diesel spill inside a power and desalination plant at Muscat, Oman • D.G. Nahmad, Eco-Logic Env. Eng.; R. Rasheed, B. Muzaffar, RAY International Group</td>
</tr>
</tbody>
</table>
## Technical Program
### WEDNESDAY, 19 APRIL

### 1345–1515 | Ballroom A

**09 Improving Social Responsibility Through Learning and Case Studies**
Session Chairperson(s): Linda Battalora, Colorado School of Mines; Ken Nichols, Devon Energy

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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<tbody>
<tr>
<td>1415</td>
<td>184438</td>
<td>Social Performance (SP) in Challenging Times: Lessons Learned Regarding Major Projects, Non-Technical Risk, and SP in the Lean Years • E. Moore, Anadarko Petroleum Corp; A. Buchman, Acorn International LLC</td>
</tr>
<tr>
<td>1445</td>
<td>184427</td>
<td>A Novel Approach to Cultural Resource Management, Historical Artifacts and Reciprocal Mitigation • E. Febbo, Exxon Mobil Corp.; C. Wooley, Chumis Cultural Resources Svcs; J. Rogers, Northern Land Use Research Alaska; J. Reuther, University of Alaska Museum of the North; B.E. Reep, ExxonMobil Alaska Production, Inc.</td>
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<tr>
<td><strong>Alternate</strong></td>
<td>184447</td>
<td>Performance Framework for Evolving Sustainability Strategies • F. Moon, Expressworks; S. Theys, Bureau Veritas</td>
</tr>
</tbody>
</table>

### 1545–1715 | Grand Ballroom D

**10 Emergency Preparedness and Response Safety Concerns**
Session Chairperson(s): Byron Gale, EnCana Oil & Gas (USA); Kyla Retzer, NIOSH/CDC

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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<tbody>
<tr>
<td>1545</td>
<td>184453</td>
<td>Health and Safety Considerations for Extreme Weather Oil Spill Response • B. Gove, Oil Spill Response USA; K.W. Kriter, M. Simmons, Oil Spill Response Limited</td>
</tr>
<tr>
<td>1615</td>
<td>184420</td>
<td>Mitigating Downhole Vibrations in Bottom Hole Assemblies Using Finite Element Analysis • A.R. Marquez, E.O. Omojuwa, C. Teodoriu, The University of Oklahoma</td>
</tr>
<tr>
<td>1645</td>
<td>184416</td>
<td>Numerical and Experimental Investigations of Gas Kick Migration during Casing While Drilling • R. Guo, Y. Chen, R.P. Coutinho, P.J. Waltrich, Louisiana State University</td>
</tr>
</tbody>
</table>
## Technical Program

(as of 10 April 2017 | Subject to Change)

### WEDNESDAY, 19 APRIL

1545–1715 | Grand Ballroom C

**11 Risk Mitigation Through Systems and Technology**

Session Chairperson(s): Adam Kalb, Chevron North America E&P; Rory Johnston, Langan Engineering & Environmental Services

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
</table>
| 1545   | 184432   | Implementing an Effective Management of Change (MOC) System for Upstream Oil and Gas Industry  
|        |          | S. Laskar, Occidental Oil and Gas Corporation                               |
| 1615   | 184412   | Managing Risk around Offshore Installations using Autonomous Marine Vehicles while Conducting Exploration Activities  
|        |          | S. Pai, Schlumberger                                                      |
| 1645   | 184476   | Developing a Safety Culture for Remotely Piloted Aircraft Systems Operations: To Boldly Go Where No Drone Has Gone Before  
|        |          | T.L. Lamb, SGS North America Inc.                                           |
| Alternate | 184441  | Managing Non-Technical Risk in Oil and Gas Operations: The Stakeholder Alignment Imperatives  
|         |          | A. Adekoya, Shell Petroleum Development Company Nigeria (SPDC)            |

1545–1715 | Grand Ballroom A

**12 Water and Our Social Responsibilities**

Session Chairperson(s): Karin Witton, Weatherford International; Barbara Denson, Weston Solutions

<table>
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<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
</table>
| 1545   | 184445   | Sustainability Aspects of Water Infrastructure  
|        |          | M.R. Dunkel, CH2M Hill Inc.                                                  |
| 1615   | 184431   | Water Use in the Oil and Gas Industries: An Evaluation of Best Practices for Communicating with Scientists, Policymakers, and the Public  
|        |          | M.A. Cook, The University of Texas at Austin; E. Grubert, Stanford University |
| 1645   | -        | Engaging With Community Stakeholders on Water Issues: An Eagle Ford Case Study  
|        |          | P. Spicer, ConocoPhillips                                                   |
| Alternate | 186086  | Development of a Large Scale Water Recycling Program for the Delaware Basin, New Mexico  
|         |          | K.E. Nichols, J.T. Sawyer, J. Bruening, Devon Energy Corporation; B. Halldorson, Fountain Quail Energy Services; K. Madhavan, Gradiant |
THURSDAY, 20 APRIL

0800–0815 | Grand Ballroom D
SE07 Thursday Opening Session
The committee chairpersons will again highlight learnings from the previous day. This session will also announce the winners of the HSSE-SR Student Challenge and the winning team will be available to answer audience questions.

0815–0945 | Grand Ballroom D
All that was discussed in the first two plenary sessions was fascinating, but what do we do with it now? Practical application of scientific concepts can be challenging for any discipline. For HSE professionals, knowing how the brain works and how do people behave in groups may seem like an academic pursuit. However, better insight should lead us to more effective programs. Understanding the social and brain dynamics provides a solid foundation of theory that can be translated into direct action. How do we write procedures that are clear and easily followed? How do we roll out a new program that inspires ardent followers? Conversely, how do we avoid sending signals that confuse the organization and lead to indifference or complacency? Examples of how brain and social science concepts have been applied will be the focus of this discussion and give attendees ideas on how to put the theory into action.

Moderator:
Nada Wentzel, Global Solutions Director, The Jonah Group

Speakers:
Carla Santamaria
Safety Manager, ExxonMobil Development
Making Safe Choices—It’s Easy, Right?

Geoff Walter
Director, EHS - Composites, Owens Corning
Visual Literacy—Helping Employees See Hazards

Krystal Sexton
Epidemiologist, Shell
Care for People: How Caring Impacts Engagement and Safety at Shell
Technical Program
(as of 10 April 2017 | Subject to Change)

THURSDAY, 20 APRIL

1015–1145 | Grand Ballroom D

13 Panel: Can Someone Help Us Understand the Proposed Environmental Rules?

It seems that every month we are hearing of or seeing a new environmental rule or regulation being proposed or passed by a state or federal agency. How can a proactive ESH staff and/or company stay informed and up-to-date on the new rules? All of our companies want to stay ahead of the “speeding locomotive of new rules”. Come hear our panel speakers explain some of the key new environmental rules (methane, GHG, WOTUS, silica, BLM, etc.) and how they are likely to affect our industry and your company.

Moderators:

Stuart Wittenbach
Director of EHS,
Cimarex Energy

Diane Sanzone
Associate Vice President, AECOM

Speakers:

Steve Roche
Manager of Geophysics,
Cimarex Energy
Seismicity in the Oilfield and the State of Oklahoma

Dustin Van Liew
Director of Regulatory & Governmental Affairs,
International Association of Geophysical Contractors
Exploration Within the Gulf of Mexico and the New Environmental Regulations

Terri Thomas
Regional Supervisor, Office of Environement, Bureau of Ocean Energy Management
How the BOEM is Helping Industry Succeed in the GOM
## Technical Program
(as of 10 April 2017 | Subject to Change)

### THURSDAY, 20 APRIL

**1015–1145 | Grand Ballroom C**

**14 Learning From Incidents and Barrier Analysis to Reduce Incidents**
Session Chairperson(s): Jim Johnstone, Contek Solutions; Matthew Zerafa, RiskBytes

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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<tbody>
<tr>
<td>1015</td>
<td>184457</td>
<td>Understanding Oil and Gas Extraction Worker Fatalities Through the Fatalities in Oil and Gas Extraction (FOG) Database S. Ridl, K. Retzer, National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>1045</td>
<td>184458</td>
<td>Quantitative Analysis of High Pressure Hazards in Oil and Gas Field Operations G. Feo, Louisiana State University; W. Williams, Louisiana State University</td>
</tr>
</tbody>
</table>

**1015–1145 | Grand Ballroom A**

**15 Reducing Societal Impacts Through Social Responsibility**
Session Chairperson(s): Andrew Roberts, ConocoPhillips; Rick Welsh, Langan Engineering & Environmental Services

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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</thead>
<tbody>
<tr>
<td>1015</td>
<td>184467</td>
<td>Sustainability of Supply Chains and Human Rights M. Dionisio, Consultant; I. Sanchez, ERM Southwest Inc.</td>
</tr>
<tr>
<td>1045</td>
<td>184475</td>
<td>Environmental Concerns and Quality of Life Following the Gulf Oil Spill: Factors Contributing to Behavioral Health H.J. Osofsky, T. Hansel, A. Speier, J. Osofsky, N. Savage, Louisiana State University Health Sciences Center</td>
</tr>
<tr>
<td>1115</td>
<td>-</td>
<td>Coastal and Offshore Ecosystem Services Assessment: Monetary and Non-Monetary Approaches D. Yoskowitz, Harte Research Institute</td>
</tr>
</tbody>
</table>
**Technical Program**

(as of 10 April 2017 | Subject to Change)

**THURSDAY, 20 APRIL**

1015–1145 | Astor Ballroom I & II  
**SE09 ePoster World Cafe I**  
Session Chairperson(s): Karin Witton, Weatherford International; Matthew Frazell, Contek Solutions

SPE is pleased to offer a new method for delivering ePoster presentations - the World Cafe format. The World Cafe is a structured event where groups of three ePoster authors will each deliver a 15-minute presentation, followed by a personal and engaging 45-minute discussion with the authors at their assigned tables.

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<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
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</thead>
</table>
| 1030  | 184479   | **CO₂ Plume Characterization Using Pressure Arrival Time**  
N. Tran, M. Zeidouni, Louisiana State University                                           |
| 1045  | 184456   | **All-Natural Process for the Rapid Treatment and Recycling of Hydrocarbon-Contaminated Solid Wastes Offers a Cost-Saving and Environmentally-Green Solution for the Petroleum Industry**  
A.R. Miles, Boldwater USA                                                                                                                                 |
THURSDAY, 20 APRIL

1200–1300 | Astor Ballroom III
SE10 Keynote Luncheon: Managing Safety in a Changing World

Fawaz Bitar
Head of Global Operations Organization Upstream, BP

Fawaz Bitar is BP’s Head of Global Operations Organization, Upstream. He is directly accountable for delivery of all aspects of Operations performance and strategy, including safety, production, cost and common processes. Prior to that, he was VP Operations Asia Pacific and Executive VP for Indonesia’s Tangguh LNG Project.

Bitar has been with BP for 28 years. He has held operational assignments in the UK, US, Azerbaijan, Colombia, Egypt and Indonesia. He has a strong technical background and held key positions such as Project Director, Engineering & Operations Manager and Offshore Installation Manager. He also worked in the London Head Office as Executive Assistant to the Group Vice President.

Bitar has a Bachelor of Engineering degree from Newcastle University and is a chartered UK and European Engineer and a Fellow of the Institute of Materials, Minerals and Mining. He is also a graduate of the London Business School Accelerated Development Programme and was formally BP’s Executive sponsor for Imperial College London. He is currently undertaking a doctorate at the University of Aberdeen.

Bitar is a member of the Royal Institute of International Affairs and a Freeman of the Tallow Chandlers’ Company. He is also the Vice Chairman of the International Association of Oil & Gas Producers (IOGP).
### TECHNICAL PROGRAM

#### THURSDAY, 20 APRIL

**1345–1515 | Grand Ballroom D**

**Process Safety: Technical Controls and Human Factors**
Session Chairperson(s): Tom Knode, Contek Solutions; Tersoo Gwaza, Consultant

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1015</td>
<td>184426</td>
<td>Applying Risk-based Process Safety to the Upstream Oil &amp; Gas Industry • J.E. Johnstone, M.D. Spangler, Contek Solutions LLC; M.D. Hansen, Colorado Springs Utilities</td>
</tr>
<tr>
<td>1045</td>
<td>184468</td>
<td>Deploying Human Performance Where Do We Start? M. Cook, Chevron North America Exploration &amp; Production</td>
</tr>
<tr>
<td>1115</td>
<td>184415</td>
<td>A Holistic Approach to Sustainable Operational Risk Assessments in E&amp;P Industry S. Laskar, Occidental Oil and Gas Corporation</td>
</tr>
</tbody>
</table>

**17 Water: New Tools and Mechanisms for Evaluating and Reusing Water Resources**

**1345–1515 | Grand Ballroom C**
Session Chairperson(s): Bill Hughes, Parsons Corporation; Jessica Rogers, University of Colorado Boulder

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1345</td>
<td>184435</td>
<td>Characterization of Accidental Spills and Releases Impacting Groundwater in the Denver-Julesburg Basin, Colorado K. Armstrong, J. Rogers, T. Burke, O. Sherwood, J. Ryan, University of Colorado Boulder</td>
</tr>
<tr>
<td>1415</td>
<td>184419</td>
<td>Use of Remote Sensing Radar Techniques for Oil and Gas (O&amp;G) Facilities Survey in Offshore Domain for Environment and Exploration: Oil Slicks Detection and Interpretation (Seeps and Spill) V. Miegebielle, D. Dubucq, Total; C. Taillandier, Total, France; S. Angeliaume, ONERA</td>
</tr>
<tr>
<td>1445</td>
<td>184459</td>
<td>Utilization of Co-Produced Water from Oil Production: Energy Generation Case • I. Akhmadullin, LSU Petroleum Engineering Department</td>
</tr>
</tbody>
</table>
### Technical Program
(as of 10 April 2017 | Subject to Change)

#### THURSDAY, 20 APRIL

**1345-1515 | Grand Ballroom A**

**18 Rising to a Top Tier Performer**
Session Chairperson(s): Steve Freemyer, Cimarex Energy

<table>
<thead>
<tr>
<th>TIME</th>
<th>PAPER #</th>
<th>PRESENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1345</td>
<td>184433</td>
<td>Applying the &quot;Concept of Accelerative Learning&quot; for Design and Delivery of Process and Personnel Safety Leadership Programs in Oil &amp; Gas Assets</td>
</tr>
<tr>
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<td>K.C. Israni, C. Watson, Environmental Resources Management</td>
</tr>
<tr>
<td>1415</td>
<td>184472</td>
<td>Changing the Safety Culture: Providing an Accident-Free Work Environment</td>
</tr>
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<td>F. Simon - QHSE Consultant, QHSE Consultant</td>
</tr>
<tr>
<td>1445</td>
<td>184477</td>
<td>An Integrated Approach to Operational Risk Management—The Role of Process Safety Management</td>
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<td>M.A. Neill, Petrotechnics Ltd.</td>
</tr>
</tbody>
</table>

**SET1 ePoster World Cafe II**

**1345-1515 | Astor Ballroom I & II**
Session Chairperson(s): Ziv Lang, California Air Resources Board; Lu Jin, University of North Dakota

SPE is pleased to offer a new method for delivering ePoster presentations - the World Cafe format. The World Cafe is a structured event where groups of three ePoster authors will each deliver a 15-minute presentation, followed by a personal and engaging 45-minute discussion with the authors at their assigned tables.

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<th>TIME</th>
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<th>PRESENTATION</th>
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</thead>
<tbody>
<tr>
<td>1345</td>
<td>184469</td>
<td>The Effects of Oil Market Events on Carbon Emissions: A 2016 Case Study</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. Rafieisakhaei, Texas A&amp;M University; B. Barazandeh, Virginia Tech</td>
</tr>
<tr>
<td>1400</td>
<td>184450</td>
<td>Next Generation Compliance for Organic Liquid Storage Vessels</td>
</tr>
<tr>
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<td></td>
<td>M. McBrayer, Sage ATC Environmental Consulting</td>
</tr>
<tr>
<td>1415</td>
<td>-</td>
<td>EPA’s Enforcement Initiative Targets Storage Tanks</td>
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<td>A. Garcia, J. Little, Sage ATC Environmental Consulting LLC</td>
</tr>
</tbody>
</table>
Baker Hughes is challenging the way the industry has historically looked at the cause of incidents—pushing beyond the typical root cause to identify the factors that allow the cause to exist.

Finding and fixing these underlying organizational and human factors not only prevents repeat incidents, but also creates an organizational foundation that finds and closes gaps that have not yet materialized into an incident.

To learn more about how *What Lies Beneath* is helping us in Getting to Zero, visit [BakerHughes.com/whatliesbeneath](http://BakerHughes.com/whatliesbeneath).
Established to acclaim during the SPE’s North America HSSE Conference in 2013 and then repeated in 2015, the 2017 conference will again feature an interactive closing session that brings attendees, program leaders, and key speakers together to deliberate over key learnings, issues, and challenges for our industry.

This unique setting allows everyone to participate, respond, and get immediate collective feedback.

It is the opportunity to have your ideas and opinions heard, especially if you genuinely want to collaborate and contribute to the success of our industry to be incident-free.

The heart of the session will explore three key current areas of industry focus that can help us achieve an incident-free workplace:

- Management Systems and Standards
- HSE Culture
- Human Factors

Key thoughts of whether or not we have the right approaches, or right mix, as well as how the industry can get to the right mix, will be explored.

Your thoughts will help identify what is needed most as you target improvement of HSE culture—a framework of what good culture looks like, how to respond to culture indicators as they change, and how to interpret culture surveys and measures.

Tired of attending conferences where you only walk away with the thought, “That’s interesting, but what are we going to do about it?” Or worse, “I’m not sure we heard anything new.” This is your opportunity to help not only make a difference in this conference, but to also change how we manage HSE and our future. Help Shape our Industry’s Next Chapter . . .

**Moderators:**

Jack Hinton, Baker Hughes  
Wendy Harris, Baker Hughes
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