



Professional Petroleum Data Expo

April 9 & 10, 2019, Westin Houston Memorial City



2019 Houston Professional Petroleum Data Expo

Speakers Abstracts

April 10, 2019

8:00-8:45am

How Blockchain Can Drive Digital Transformation in the Oil & Gas Industry

Claudio Lima (BEC)

Description of Presentation: Blockchain is being considered the internet of trust. It is much more than a platform that focus on cryptocurrency application. Blockchain will enable decentralized networks and applications that will affect all industry verticals, specially the oil and gas industry.

As widespread attention and interest continues to garner around this emerging technology field, it important to understand how Blockchain can be used in the oil and gas industry, by asking the following questions: What is the state of the technology today? What are the applications and use cases for the oil and gas industry? What are the Blockchain standards to be considered? What are the value proposition and challenges in implementing Blockchain in oil and gas industry?

This talk will address all these points and will explain how Blockchain will drive digital transformation in oil and gas industry.

Short Biography: Dr. Claudio Lima is a seasoned technology executive and thought leader in Advanced Blockchain, IoT and AI technologies with expertise in energy (utilities, oil and gas), smart city and telecom/IT digital transformation. He has a Ph.D. in Electronic Engineering at the UKC (England). Previously he was the Global Smart Grid CTO of Huawei Technologies in Europe-Asia-Pacific and a Distinguished Member of Technical Staff (DMTS) at Sprint Advanced Technology Labs (Sprint ATL), in Silicon Valley-CA. Lima served as Co-Chair of the IIC Industrial Internet Consortium, Industrial IoT-Oil & Gas and Utilities. He’s currently Member of the Advisory Board of the City of Houston IoT. Dr. Lima is currently the Co-Founder of the Blockchain Engineering Council (BEC), and leads the IEEE Blockchain Standards development as Chair and Vice-Chair of IoT and Energy Working Groups, respectively. He also serves as the Blockchain Cybersecurity Industry Advisory Board Member of the US Department of Energy (DOE)/PNNL.

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#### **Challenges and Lesson Learned with Data Analytics**

**Jim Claunch (Equinor)**

**Description of Presentation:**

- How do you overcome the challenge of data quality and consistency?
- Building trust: How do you get the people in the organization to believe in analytics?
- What type of Leadership do we need?
- Can we improve maintenance/efficiency through predictive analytics?

**Short Biography:** Jim Claunch is currently Vice President of Operational Excellence for Development and Production USA/Mexico in Statoil. He joined Statoil in 2009 as Vice President of Global Business Services in the Houston office and subsequently held VP of HR positions in Norway and in Houston. He

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has over 25 years of experience in the energy sector including 14 years of international experience serving in various financial and shared services roles. Prior to joining Statoil, Jim's roles included:

- Managing Director of Growth Capital Partner's Energy Group in the Merchant Bank's Houston office.
- CFO and CIO of Power Well Services (PWS), a global oilfield services company controlled by First Reserve. PWS was put together via six acquisitions and later sold to Expro International Group PLC.
- Sr. Vice President of Shared Services and IT at Intercontinental Hotels Group.
- Vice President of Global Shared Services for Halliburton Energy Group, where he had global responsibility for accounting, communications, finance, HR, procurement, quality and IT functions.

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Implementing ETL, Master Data Management, Data Warehouse and Analytics In 9 Weeks. Is it Really Possible?

Mindy Stone (Centennial Resource Development)

Description of Presentation: Delivering a business ready end to end data management solution has historically caused challenges across our industry. Success is measured by a number of factors such as cost, efficiency gains, reduction of errors, business benefit and time to deliver. Success is not achievable without combining clear strategy, strict governance, defined scope, executive buy-in and the right technology. But it's not impossible as we have found. As a rapidly growing operator, our business requires more data, faster access to data, greater dependency on accuracy of data and this year we have delivered a business driven solution to our various groups. This presentation will cover what we've done in the past and how a complete change in direction has enabled us to deliver full capabilities in just 9 weeks.

Short Biography: As Analytics and Applications Manager at Centennial Resource Development, LLC, Mindy and her team are responsible for all aspects of analytic development, application support, and strategic data implementations for the company. Before joining the Centennial team, Mindy was a co-founder and CTO of Blue River Analytics where she worked with over a hundred oil and gas companies to build analytic tools and help them get the most value out of their data. Prior to starting Blue River, she worked on the reservoir engineering team at Forest Oil. Mindy graduated with a B.S in Biology and Chemistry and minor in Statistics from the University of Denver. Mindy also holds a Master of Science in Computer Information Systems with a concentration in Business Intelligence and Database Management from Boston University.

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### **'What Is A Completion' Training**

**\*Note: This Session Will Run from 8:00-9:45am**

#### **Trudy Curtis (PPDM Association)**

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### A Bright Technology Future for Upstream Oil & Gas

#### **Yogi Schulz (Corvelle Consulting)**

**Description of Presentation:** Yogi Schulz will describe leading technology developments that are likely to provide a future economic benefit to the exploration and production of oil & gas resources. Yogi will describe these technologies: 1. IoT, Big Data and Data Analytics 2. Artificial Intelligence, Machine Learning, and Quantum computing 3. Robotics 4. Autonomous vehicles 5. Blockchain and Cryptocurrencies For each of these technologies, Yogi will describe today's capabilities, outline likely short-term developments and speculate about future advances.

**Short Biography:** Yogi Schulz founded Corvelle Consulting. The firm specializes in project management and information technology-related management consulting in the upstream oil & gas industry. Mr. Schulz has 40 years of Information Systems experience of which over 35 have been spent as a consultant. He holds a B. Comm. from The University of Calgary. Yogi has presented at many conferences including oil & gas conferences. Yogi served as a member of the Board of Directors of the PPDM Association.

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9:00-9:45am

How Blockchain Could Save Seismic

Cindy Cummings (Repsol)

Description of Presentation:

Seismic is one of E&P's longest-lived assets. Maintaining the attributes surrounding it (ownership, entitlements, processing versions and lineages, survey merges, etc.) becomes more difficult to track over time. Blockchain offers solutions for these, while opening new opportunities.

Short Biography:

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### Optimizing Visualization for Rapid Geospatial Analysis

#### **Alan Lindsey (PetroDE)**

**Description of Presentation:** Current software solutions for mapping and modeling are too slow for the size of modern day datasets, so subsets working with only a restricted area of interest are typically used. The field of distributed computing provides options to speed up the network's compute capability without the need for individually faster processors. A solution built in the cloud, with scalable processing capabilities, enables only the appropriate data to be streamed down to a desktop client without artificially limiting the analyst's view of the data. Several approaches can be used to guarantee timely access to all the data that analysts need. Regionation, Searchable Raster Vectors, and Searchable Vector Tiles are three methods that relieve the accessibility barriers and put the information into the hands of the appropriate individuals. This presentation will explore these various approaches and highlight key applications of each method.

**Short Biography:** Alan Lindsey is a geoscientist who has developed resource plays on three continents. He currently coordinates building the vision, strategy, and team for Vesmir Inc., creators of PetroDE, the oilfield intelligence platform. Prior to focusing on resource plays, Alan explored for

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conventional resources for Shell E&P from California to the Deepwater Gulf of Mexico. Alan received a B.S. in Geophysical Engineering from the Colorado School of Mines.

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Data As An Asset- Say It Like You Mean It!

Trevor Hicks (Stonebridge)

Description of Presentation: Petroleum data managers are fond of declaring that data is an asset in an effort to convince the business managers in their company to invest in technology, processes, and people to better manage that data. Data absolutely is an asset for oil and gas companies, and a highly strategic one at that. Colloquially when we call something an 'asset' we only mean it's a 'valuable thing' and rarely deal with the implications of that word. However, the word 'asset' has some specific meanings to both accountants and operations managers that we would do well to understand to improve our message to business decision makers about the importance of investing in data management.

Short Biography: Before joining Stonebridge in 2015, Hicks held senior management roles at Noah Consulting, Baker Hughes, DNV GL and Schlumberger. He currently serves on the PPDM Board of Directors and is a former multi-term PPDM Board Chairman. Trevor holds a bachelor's degree in math from the University of Tulsa, a master's degree in computer science from the University of Texas at Austin, and a master's degree in business administration from the Fuqua School of Business at Duke University.

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### **Living Labs: A Capability Supporting A Culture (Sponsor Presentation by Infosys Consulting)**

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LEAN Process Improvement in Data Delivery

Miao Wang & Kumar Ramanakumar (Shell)

Description of Presentation: Historically, a number of different workflows were used to deliver well header and directional survey data to the business at different phases of the life cycle of a well. Shell is now applying LEAN techniques, value stream mapping and root-cause analysis to optimize data intake, reducing uncertainty in subsurface interpretation, static modeling and delivering data to sub-surface users more efficiently, all of which contribute to putting "the right data, in the right place, at the right time"

Short Biography: Miao Wang was born in China. She studies in Nanjing University for her bachelor in hydrogeology and master in structural geology. In 2013, she graduated from University of Texas at Dallas with PhD degree in Geosciences. She was an exploration geologist for unconventional at Shell. Currently, she is a technical data management analyst at Shell.

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*10:00- 10:45am*

#### **PPDM Rules Interactive**

#### **Trudy Curtis (PPDM)**

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Extracting Information from Wells Logs Using Computer Vision

Parminder Kaur & Jacques Micaelli (Agile Data Decisions)

Description of Presentation: E&P business decisions rely on well information being accessible using structured sources such as relational databases. Important mudlogging information available as graphic symbols in well logs does not directly lend well to be stored in such databases. We are examining the feasibility of using deep learning approaches YOLOV3, YOLOV3-tiny, and R-CNN to transform graphic information into usable, numeric values that can be consumed by business databases. Computer vision models are being trained on well logs, which are tagged by subject matter experts with expected labels. The developed models automatically detect and draw bounding boxes around target objects in test documents. Preliminary results with 70 documents show 100% of both precision and recall values for detecting oil and gas shows and 82% of both precision and recall values on one type of lithology. Training document set is being expanded. Methods for detecting additional types of lithological information are being developed.

Short Biography: Parminder is a Senior Data Scientist at Agile Data Decisions, Houston. His key responsibilities include developing deep learning and machine learning methods to derive information from diverse subsurface measurement documents including well logs, core reports, and lithology reports. I have a PhD in Computer Engineering with a 12 years experience of solving data science problems across chemical, biological, financial, instrumentation, biomedical, and geological sectors.

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### PPDM Professional Development Committee – Defining Job Families Workshop

#### **Cynthia Schwendeman, Cindy Cummings, Curley Thomas, Patrick Meroney**

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Reliable Transfer of Trust Metadata Drives Efficiencies in Data Management

Ross Philo (Energistics)

Description of Presentation: Digital transformation sharply increases the number and diversity of stakeholders making use of data. This drives more exchanges of geotechnical and engineering data within an organization. As an example, information from a drilling rig may enter through the real-time monitoring center, be used later by the asset team, passed on to analytics, used in a management decision system and archived for future use. The ability to attach trustworthiness information to all such data is critical to the proper operation of the digital oilfield. It avoids the duplication of time-consuming qualification tasks, informs on prior processing and other transforms applied to the data and provides automated systems with the necessary information to filter out data that may not meet the system's requirements. Standards for metadata, including data assurance and data integrity information, have been developed and published. Their broad adoption will drive significant efficiencies and reduce risk.

Short Biography: Ross has over 35 years of experience in the oil and gas industry. He has worked for Maersk Oil, Halliburton and Schlumberger among others. He has held numerous executive management positions including CEO, CIO and other technology leadership roles. Ross has lived and worked in some 30 countries worldwide in numerous management assignments. Ross attended Imperial College of Science and Technology in the United Kingdom where he received first class honors with a BSc (Eng).

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**Case Studies on Digitalization in E&P Organizations in 2018**  
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Katya Casey (Actus Veritas Geoscience)

Description of Presentation: Steven Zobell in his article published by Forbes magazine in March of 2018 estimates that in 2018 enterprises will invest \$1.3 trillion USD in Digital Transformation projects to “improve efficiencies, increase customer value and create new monetization opportunities”. In the same research Steven analyses the reasons why 70% of these initiatives will not reach the objectives. AVGeo specialists were involved in digital workflow improvement projects in 2018 and we would like to share our experiences and see if the predictions of Steve Zobell were correct. In our presentation we will discuss some examples of our work with E&P companies on the business projects in 2018 and efficiencies to be realized in daily work, which we think are typical to many of the E&P organizations. We will analyze observed communication barriers, opportunities to improve data and information flow throughout the organizations and will focus on what we think is the key to an optimized decision-making process. Through these talking points, we would like to engage the audience in a lively and productive discussion.

Short Biography: Managing director at Actus Veritas Geoscience, LLC, Katya has an MSc in Geophysics from Univ of Houston, started with Russian Acad. of Sciences in Moscow later joining Amoco, BHP, Apache and Murphy Oil in the US. She has developed innovative geoscience and GIS exploration workflows for integrating results in basin and block prospectivity. Katya is adept at optimizing team dynamics, mentoring, and teaching. She was awarded “Leadership in Technology” from the Assn. of Women in Computing in 2008.

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*11:00- 11:45am*  
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Equinor’s Blockchain Journey

Rebecca Hofmann (Equinor)

Description of Presentation:

Short Biography: Rebecca is an accomplished finance and compliance leader with over 18 years of energy experience. She currently works for Equinor’s Operations Technology group and is responsible for ensuring the development and improvement of processes over governance, requirements and compliance to support domestic US onshore and US offshore operations. She also leads the Blockchain digitalization strategy for Equinor United States and is the founder and visionary behind the US Oil & Gas Blockchain Forum and the OOC Oil & Gas Blockchain Consortium. Rebecca joined Equinor in 2011 as Head of Finance for the Appalachian basin. Prior to Equinor, she worked for Occidental Petroleum and Merit Energy Company as Manager of Financial Compliance and Manager Internal Audit Operations North America. She has a Bachelor of Science degree in Accounting from the University of Texas at Dallas. In 2018, Rebecca received the GRIT award for her creativity and innovation within the industry and she most recently was elected among peer operators in the energy industry to lead as Chairman of the Board the OOC Oil & Gas Blockchain Consortium. www.oocblockchain.com

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### The Digital Transformation

#### **Mark Stansberry (The GTD Group)**

**Description of Presentation:** In this presentation Mark will address the use of content and analytics, from the white board to the board room, in aiming for efficiency, effectiveness, and flexibility. Therefore, ultimate results should be achieved by communication the findings directly to the C-Suite and the Board of Directors.

**Short Biography:** Mark is a corporate leader with extensive experience in the energy industry. He has served as Chairman/CEO of the GTD Group, and CEO/President of The Oklahoma Royalty Company. An award-winning film producer, columnist, radio talk show host and writer, Mark is the author of five energy-related books. Mark is a frequent speaker in the oil & gas space- focusing on business development, strategic planning, new technologies, digital transformation and operational excellence within the entire energy sector.

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How Does Data Management Fit in Your Organization

Trudy Curtis (PPDM)

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### Department of Interior Metadata Implementation Guide- Framework for Development

#### **Raymond Obuch (US Geological Survey)**

**Description of Presentation:** The Department of the Interior (DOI) is a Federal agency with over 90,000 employees across 10 bureaus and 8 agency offices. Data and information are critical in day-to-day operational decision making and scientific research. DOI is committed to creating, documenting, managing, and sharing high-quality data and metadata in and across its various programs. Documenting data through metadata is essential in realizing the value of data as an enterprise asset. The completeness, consistency, and timeliness of metadata affect users' ability to search for and discover the most relevant data for the intended purpose; and facilitates the interoperability and usability of these data among DOI bureaus and offices. Fully documented metadata describe data usability, quality, accuracy, provenance, and meaning.

**Short Biography:** Ray Obuch has been with the USGS Energy Program since 1985 supporting Energy related data and databases that are used in researching and assessing Domestic and International Oil and Gas Resources. Ray is a data manager and subject matter expert for Oracle database software, ESRI's ArcSDE Geodatabase and overall data architecture and management. Ray has supported the Open Data Initiative (Data.gov) at the Department of Interior, USGS, and Energy Program Science Center Level since 2009.

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Product Demo

TBD

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### The Overlooked Dataset With Reservoir Insights

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### Alex Bruns (Baker Hughes)

**Description of Presentation:** Surface sensors relating to the subsurface rock and fluids are readily available on nearly every wellsite. These datasets though are often not leveraged from an analytical perspective due to nature of the measurements and lack of scientific understanding. As an industry, we moved away from these measurements when downhole Wireline and Logging While Drilling technology came into the marketplace. It was not until the unconventional boom, that these datasets once again came to light as insights into the formation without standing in the way of operational efficiencies. As with any datasource, understanding what the measurement means, and what assumptions goes into this dataset is extremely important. These aspects will be discussed before the analytical applications of subsurface insight are shown. The application of these datasources will be showcased throughout the presentation with its various applications from petrophysics, geochemistry and hydraulic frac design considerations.

**Short Biography:** Alex has held various roles within Baker Hughes. While in the field, Alex worked on offshore projects in the Gulf of Mexico and Guyana as a mud logger. As a research scientist he focused on gas extraction optimization, and reservoir analytics development. Currently he is focused on integration of various datasets into insights about the complex subsurface environment. Alex holds a BS from Northland College in Chemistry, and an MS from Michigan Technological University in Environmental Eng.

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1:00-1:45pm

What does the Commercial Impact of Blockchain Mean to You?

Andrew Bruce (DataGumbo)

Description of Presentation: For executives tasked with finding millions of dollars in efficiency savings, an industrial Blockchain will integrate key performance and spend data from vendors and customers into a blockchain network. The resulting radical transparency, coupled with automatically enforced smart contracts, provides huge opportunities to collaboratively identify and reduce expenses while incentivizing efficiency. Andrew Bruce would like to challenge the audience to consider an end-of-life for invoices. Andrew will discuss how IoT data can be consumed and managed on a shared transaction ledger. A secure blockchain ledger can transform the way businesses transact with one another and settle the exchange of goods and services.

Short Biography: Andrew Bruce is CEO of Data Gumbo. Andrew created Data Gumbo to realize millions, potentially billions, of dollars in efficiencies across the industrial value chain. Data Gumbo's proprietary blockchain, Internet of Things data platform and smart contracts fosters trust amongst counterparties, reduces friction points and transaction time and cost. Andrew is an Oil and Gas and IT industry veteran.

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### Can the PPDM Data Model Help Accelerate Agile Master Data Management Deployment?

#### Stew Nelson & Melinda East (Infosys & Equinor)

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**Description of Presentation:** Equinor’s digital transformation plans include employing an MDM solution to create a strong data foundation upon which many other optimization and analytical program will be constructed. Equinor, like many other operators is continuing to grow and change and data is at the heart of the digital capabilities the business desires. Equinor has done a great job of building processes to help enable the business but like many enterprises it needs to scale more rapidly than the current constructs will allow. Equinor realizes this change is needed but there is no time for long cycle engagements which gather requirements today and deliver capabilities months or quarters into the future. In order to maintain momentum with business management Equinor needs to show value early and often. As a result, Equinor has chosen to employ an Agile development methodology. Continuous sprints and well groomed release plans for MDM depend upon a common understanding of terms amongst the product owners, robust data structures which can be segmented or isolated for sprints and a library of business rules which do not need to be recreated. As a result, the PPDM model and the by-products of the work group efforts is a logical choice to accelerate the agile model for Equinor. Equinor partnered with Infosys to build a team capable of designing and deploying three key subject areas simultaneously as they are very closed linked together as well as to the overall corporate objectives. Following the Agile methodology, the project will begin with Sprint 0 which sets not only the direction of the project but also educates the project participants on their roles in this rapid deployment model. PPDM the model and the “What is a Well?” materials will be a key ingredient in the communication and orientation of the eclectic group of team members to be assembled. Once the overview of the method and PPDM’s role in the architecture are established the attributes for each data type will be the starting point for agreement to allocate into the individual sprint segmentation. Utilization of these pre-defined attributes will rapidly reduce the effort of originating attributes from a clean slate and thus accelerate the engagement. This project is just about to get underway. The end of 2018 and the beginning of 2019 (before the PPDM expo) will provide a real time opportunity to test the above hypothesis. Special care will be taken to measure the impact of the contributions of the PPDM model and artifacts for presentation to the PPDM community. The presentation and findings will show how the MDM agile factory model can be enabled and accelerated by the numerous contributions of PPDM.

**Short Biography:** Stewart Nelson is a global leader in the Infosys Energy Practice who is passionate about how PPDM shapes information management solutions to optimize business performance and decision making. Stewart has partnered with numerous operators as a part of Infosys and previously as a co-Founder of Noah Consulting to design and deploy solutions which help our industry gain visibility, robust access and deeper insight to the information responsible for driving profitable operations. Melinda is the Head of Data Quality & Management for Development & Production International business unit for Equinor. Her career in data began over 20 years ago, and has always been rooted in the energy industry. She is formally educated in Geoscience and Geomodel creation, although the last 7 years of her career have been in leadership roles shaping Information Management solutions. She has operated based in both Canada and the US for Shell, Apache, Petro-Canada, Suncor, and now Equinor (the operator previously known as Statoil). She has been active engaged across numerous business areas and functions within the Energy industry and has found her contributions have the highest impact while focusing on evaluating, establishing and implementing fit-for-purpose data strategies with data integrity and integration at the core.

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Any Transformation Such as Digital Only Happens if People buy in and Believe in it. How Do You Get Ready for It?

Abhi Narvekar (The FerVID Group)

Description of Presentation: Consider a story – Kids trying to find shells. But they are concentrating on only one kind of shell – the clam shell – with both sides intact. Every beach has a lot of these and are a very common kind of shell (although they are very fragile and break easily). But the kids have made their mind up about finding and collecting them. Even if the beach is covered with other beautiful kinds which might even fetch you some money, the kids overlook them all. This is because the kids are committed to one thing and one thing only. This applies to every single thing we do. If we want a Digital Transformation, we need to first define what it means to us? Just because someone else did some predictive analytics, do we have to? Is there a need for the same? Do we even have any business case that warrant it? But once you define the same and now are aware of what it means, is when you will then decide what data you have and what data you need to make this transformation possible. This talk will dwell upon the topic of “How does actual transformation happen?” I know we are not in a church setting, so this will not be ‘entirely spiritual’ but will contain elements of the same which leads to a win.

Short Biography: Abhijeet Narvekar has experience in the Upstream Oil & Gas industry with companies like Schlumberger, Petris and has worked in various roles, gaining invaluable domain expertise in the Data Management domain. (Borehole and Seismic Data Management – Applications and Workflow), In 2010, he founded The FerVID Group, which incorporated a novel idea of Expert-led recruiting, which is a seismic shift in the way recruiting is done. In his current role leading The FerVID Group, Abhijeet draws on his domain insights, and keen entrepreneurial acumen to execute innovative approaches for talent acquisition, upstream consulting and Big Data in HR. The name ‘Fervid’ is a derivation from fervor -meaning passion and enthusiasm, which is one of the core values of the company. Abhijeet Narvekar has been presenting on several occasions. Recently he was a speaker at the SPE MIT June 2017 event, SPE – Pay it Forward network in October 2017, Positivity and Motivation for an Architecture firm in November 2017.

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### **Classification and Metadata Extraction Using Machine Learning**

#### **Parminder Kaur (Agile Data Decisions)**

**Description of Presentation:** Majority of data describing subsurface measurements is in varied, unstructured formats, making the information extraction slow and expensive. A sample from client showed that only 78% of the target metadata was collected despite its presence in the documents, with 7% values being incorrect despite the extraction by skilled technicians. We performed a study on seismic acquisition reports to investigate the performance of a machine learning system for bridging such a gap. System was trained to detect 20 metadata items, and classify documents according to four categories. User interface provides a quantitative assessment of accuracy of results, while linking them to source documents. The trained system was able to extract metadata more accurately than was achieved by the human operator on the same dataset, with a precision and recall of 95% and 85% respectively. It opens up the possibility to readily use large volumes of technical documents for key business decisions at a much lower cost.

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**Short Biography:** I am a Senior Data Scientist at Agile Data Decisions, Houston. My key responsibilities include developing deep learning and machine learning methods to derive information from diverse subsurface measurement documents including well logs, core reports, and lithology reports. I have a PhD in Computer Engineering with a 12 years experience of solving data science problems across chemical, biological, financial, instrumentation, biomedical, and geological sectors.

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Wrestling the Data Quality Bull – Take Data By The Horns and Tame It

Matt Becker, Sullexis

Description of Presentation: Learn how Sullexis & Informatica helped an Oil and Gas Super Major develop a business-led, self-service, and automated data quality management solution that enabled business processes to operate efficiently, reducing manpower and exception management, while laying a foundation for good data to power future automation and machine learning.

Key Outcomes

- Implemented foundation of a modern-day data architecture to help maintain and support good data quality across the various upstream functions.
- Developed a straightforward data stewardship-based framework, combined with Informatica Intelligent Data Quality (IDQ), that aligns the organization's people, processes, and technology, to quickly derive value from their data.
- Implemented a business-led, self-service, automated SAP PM data quality management solution utilizing Sullexis' Data Quality Methodology and Informatica's IDQ solution.
- Streamlined plant management maintenance process resulting in improvements in safety, reliability, and the operational effectiveness
- On-going utilization of the self-service capabilities of IDQ thereby minimizing IT support and cost
- Dramatic reduction in data load times from several days to just a few hours

Short Biography: Matt Becker serves as the Managing Director of Sullexis' Enterprise Data Strategy and Solutions practice. He has spent 19+ years creating and implementing strategies that drive client performance through technology adaptation in areas ranging from big data to enterprise data management to business intelligence and analytics. Matt enjoys delivering the value gained by implementing solid information management principles, thereby reducing inefficiencies and gaining insight into overall operational performance.

Prior to joining Sullexis, Matt served in leadership roles with Slalom, Noah Consulting, and SunGard after spending his early years with Enform Technologies. Matt has cultivated a deep subject matter expertise in the Energy industry, including Upstream Oil & Gas (Unconventional / Shale), Energy Trading (gas and power), Pipeline, and Refined Products.

Matt holds a BA in Management Information Systems from Texas A&M University. Matt lives with his wife, Kristina, their six kids (yep...six) and two dogs, in the Spring area of Houston where they enjoy doing family road trips, camping, home improvement projects, and movie/game night.

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### **Digital Transformation @Scale Powered by an Effective Data Strategy**

#### **Sunil Garg (dataVedik)**

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**Description of Presentation:** As Oil and Gas companies embark on their Digital Transformations, it is imperative that they put together a data strategy which enables and accelerates these initiatives. An effective data strategy would include the various steps in the life-cycle of the data - data acquisition, quality Control and improvements, transformations, storage, retention policies, governance, access control, visualization and availability to workflows facilitated by semi or fully automated data pipelines with the goal of making faster and reliable decisions. This session will include a presentation on the concepts of effective data strategies followed by the live demonstration of these as part of an innovative data-driven hydraulic fracturing workflow solution powered by AI.

**Short Biography:** Sunil Garg is the founder and CEO of dataVediK, a startup specializing in Consulting, Big Data, Data Analytics, Machine Learning and end-to-end Data Ecosystems for Oil & Gas industry. Prior to this, he spent 20+ years establishing and growing Data Management, Big Data and Analytics business for Schlumberger. Sunil is a sought-after speaker at various industry conferences and also conducts Big Data, Machine Learning and Blockchain trainings for the Industry, the Government and the Academia.

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2:00-2:45pm

Startups & Innovation – Panel Discussion

Jim Lawnin (BBL Ventures)

Description of Presentation: The panel will discuss the following:

- Where startups are bringing innovation to the industry
- The state of the startup ecosystem in oil and gas
- Challenges and hurdles
 - from the startup perspective,
 - from the large enterprise perspective,
 - and from the investors perspective
- How to build and innovation enterprise using startups

Short Biography: Jim Lawnin is an innovation leader in helping large enterprises digitally transform their business operations through emerging technologies. Today, he is Managing Partner of BBL Ventures, a venture capital fund and consulting firm focused on early stage investing in emerging technologies for the energy industry. He is also a board member of the Energy Blockchain Consortium, a non profit organization developing industry blockchain standards, and the Center for Houston's Future Oil & Gas Committee.

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### **Expanding The Definition of Digital Twin With IIoT**

#### **Petter Jacob Jacobsen (Cognite)**

**Description of Presentation:** A digital twin can be an empty box. Or it can be one of the most useful tools to drive business value for heavy asset industries. The difference is in the data.

Industry has many definitions for “digital twin”. This presentation will demystify some of the most common buzzwords and focus on the practical use and development of digital twins from an IIOT and linked data perspective. We will demonstrate the current and future potential of digital twins, using a cloud-native industrial data platform to aggregate and contextualize all kinds of industrial data.

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Because we believe a digital twin should be a digital representation of the industrial reality of an asset (e.g., oil platform, compressor, or ship). This means taking the original CAD drawings and adding layer upon layer of operational context, from process diagrams and production information to 3D-models and event data (maintenance, incidents). Everything linked in the real world should also be linked in the digital twin. And the value of the digital twin corresponds directly to the variety and quality of data connected within it.

**Short Biography:** Petter Jacob leads the Oil and Gas Vertical at Cognite, a technology company making data available to humans, machines, and applications through the Cognite Data Platform. Petter is responsible for driving digital transformation processes for Cognite's O&G customers and together with his team, he works to create impact making sure they capture value from our technology. They work with Oil and Gas companies across Europe such as OMV, DEA, Aker BP and Lundin. Petter has a Master in Science & Tech from NTNU, and international oilfield experience from Schlumberger and from his own Machine Learning startup.

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The Digital Transformation of the Workforce

Kerry Blinston & Karen Blohm (CGG)

Description of Presentation: Existing data management training, certification and published competency maps focus on what could be considered the traditional data management skills. With new demands being placed on the data manager from data science teams and corporate data liberation and digitalization strategies, there is a need to consider and plan for the development of additional and evolving skills. Drawing on our experience of delivering a Fundamentals of Data Management Course to 100's of attendees we will present our view of the gaps that exist between existing resources and those that are likely to be required in the future, discussing the factors that will impact the ability to integrate digital immigrants with digital natives.

Short Biography: Kerry Blinston is CGG's Smart Data Solutions New Business Development Director, responsible for innovation and commercialization. Kerry's interests span cloud storage and how industry processes will evolve as a result of cloud adoption, machine learning systems and their role in automating data management tasks in addition to the development of academic routes into O&G data management. Kerry acts as an industry representative on the steering group for Robert Gordon University Petroleum Data Management Graduate Certificate and is an active participant in the NDR community.

Karen Blohm is currently the Diskos Programme Manager for CGG Smart Data Solutions. Karen fulfils an operational leadership role with strategic and high-level data management engagements in National/Governmental Authorities and oil & gas companies. She has held roles in subsurface interpretation and petroleum geoscience followed by technical, consultative and operational leadership responsibilities in data management. Data management engagements have provided opportunities around the globe, including in Norway and Australia, and have focused on scoping and delivery of major data management and service delivery improvement programs. Karen holds a BSc. in Geology from the University of Hull, UK.

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### Predictive Maintenance for Rod Pumps Using Machine Learning

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### **Patrick Bangert (Algorithmica Technologies)**

**Description of Presentation:** Maintenance issues on the downhole part of a beam pump can be reliably diagnosed from a plot of the displacement and load on the traveling valve; a diagram known as a dynamometer card. We demonstrate that this analysis can be fully automated using computerized analysis procedures that are obtained using machine learning techniques from a set of 35292 sample cards drawn from 299 beam pumps in the Bahrain oilfield. We can detect 11 different damage classes from each other and from the normal class with an accuracy of 99.9%. This model has been deployed in the Bahrain oilfield where it achieves an accuracy of over 99% in real-time field operations.

**Short Biography:** Patrick was a researcher at Los Alamos National Laboratory and the NASA Jet Propulsion Laboratory prior to becoming professor for mathematics at Jacobs University in Germany. In 2005, he founded algorithmica technologies Inc, where he serves as CEO. Patrick also serves on the board of the Digital Energy Technical Section at the Society for Petroleum Engineers (SPE) and hosts a machine learning course on his YouTube channel.

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Digitizing Wells To Generate Real-Time Data, Analytics And Optimize Completions

Brett Chell (Cold Bore Technology)

Description of Presentation: For many years, the drilling industry has been correlating multiple data sources in real-time so the drillers can determine how to drill the well, in addition to generating actual time log data that enables appropriate payment transactions. However, this is not the case for completions, which has fallen behind in utilizing multiple data sources, and sensor-driven and time log data to support tracking, analytics and payment transactions. Generally, disparate completions data is still being collected individually and submitted to the producer for review post-completions operation rather than in real-time. This type of data collection results in missing and or broken streams of data that cannot be used properly to evaluate and or modify project, engineering or safety processes – especially in real-time. Data which cannot be used correctly creates ineffective employees and time management. With onshore completions operations costing on average USD \$5-10K per hour, it is critical to account for every second of the operation and to understand what is occurring, the duration, and the cause and effect. The first digital completions recorder and operating system known as SmartPAD is presented. It is a remote system, that enables access and visibility of the operations data and work flow overview, in real-time. It normalizes the different data types from various service companies (coil, wireline, frac, flowback, etc.) and displays this data in real-time, on a dashboard, so it can be instantly monitored. Collected data sources are auto-populated into programs such as WellView and there is a frac engineering software overlay. Every second of the completions operations is recorded and time-stamped along with the detailed context necessary for a complete understanding of the chronological chain of events. This enables comprehensive tracking of both Productivity Efficiency Gains (PEG), Scheduled Operations and Non-Productive Time (NPT) - all critical aspects to track and identify. When all time, data, and operational changes are tracked to the second, a new opportunity arises for the companies working onsite. And the challenge of different service company data formats onsite will no longer be an issue so operators can now modify and create new processes based on the correlation of their data. Customer Case A: More Detailed Understanding In the past, operators have not been able to collect completions data on a granular level. They have had to group many different processes into a

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larger category as they were unable to track each of the different smaller processes and related details. Being able to classify Productive, Scheduled Operations and Non-Productive Time down to the second is now changing how they are labeling their time blocks. One of the largest US operators in the Permian Basin, is using the system and is now able to create more specific categories for individual operations which helps them identify, track, analyze and better understand occurrences. They can now look back at their timeline in chronological order to see how one event affects the next, which was not possible before.

Customer Case B: Real-time Insight into Fracing Operations One instance of the benefit of having the valve positions tracked occurred with a client recently when a wireline unit had left a set of perforating guns downhole. The wireline had the appearance of being cut and it was assumed by the crew that it had occurred as a result of the wellhead valve closing on it. Our client was able to look back at that exact time frame in the SmartPad system data and determine that the valves had not actually been moved at all, that the valve was still open, and that the tools had been mistakenly left downhole by another cause.

Customer Case C: Optimizing Engineering Processes and Reducing Time Tracking and reducing well switch time is a universal goal of many operators. On multi-well pads during fracking operations many time-consuming well switches are made to keep operations running continuously. Because so much time is spent during a fracking program on well switches, it is extremely important to track it in order to help reduce the amount of time required to switch over well operations. One of our clients who is an operator in the Duvernay in Alberta, needed to understand exactly how much time they were spending on well switches, rather than relying on estimated time spent and personnel manually timing them. After using the system on many consecutive wells and pads, they discovered that their well switches were often taking up to 45 minutes or more which was 2-3 times longer than expected and much more costly. They needed to reduce this time and by tracking all their processes and associated time they identified inefficiencies in their programs and determined how and where they could improve. As a result, they were able to reduce their average switch time down to an unprecedented 12 minutes, which collectively, has saved them hundreds of thousands of dollars in that one process improvement alone.

Customer Case D: Safety: An operator, avoided a potential catastrophe recently when they had a situation where two rig hands were using a hammer and pipe wrench to try and open a valve that they mistakenly thought was frozen shut. There was an attached pump line, which was presumed closed, and not under pressure. However, the valve was not frozen shut and alarmingly, it was actually in use with more than 6,000 pounds of pressure! Due to the real-time valve position and pressure display with SmartPAD system, the foreman was able to quickly identify that that the valve was fully pressurized, and he immediately alerted the personnel to cease activity and evacuate the hot zone. The real-time data display created visibility and helped avoid a possible serious incident. In conclusion, the most significant benefit of this system is moving the completions operations from generalized, manual and subjective data capture to granular and automated data collection which will provide analytics and reporting that are generated by the system in real-time. This will help optimize unconventional completions operations, reduce costs and increase visibility and safety.

Short Biography: Brett Chell is President and Co-Founder of Cold Bore Technology. He has many years of international experience in the oil & gas industry and specializes in developing “disruptive technologies”, new processes, equipment and software systems for the drilling and completions sectors. Having started in the field working on drilling rigs, Brett’s background is routed in practical deployment

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and creating solutions that are focused on real world practicality that reduce workload, infrastructure and cost. He has co-founded and raised capital for several different industry startups.

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### **RPA- Creating Your Own Digital Workforce to Transform Business Processes**

#### **Brad Nickle (The Strickland Group)**

**Description of Presentation:** Robotic process automation (RPA) harnesses software with artificial intelligence (AI) and machine learning capabilities to handle high-volume, repeatable tasks. The presentation will focus on the “State of the Art” for the creation of Digital Workers. Using the current RPA tools, employees can design a software BOT that completes a business process from start to finish. BOTs can observe and learn by watching a business user complete a process and then be released to perform the same process on a repetitive basis. Successful implementations often involve the BOT working alongside of human employees to get tasks completed. Software BOTs are digital workers that have taken idea of macro’s to a whole new innovative level and beyond. The man and machine partnership isn’t new, and has allowed the world to advance in countless ways. RPA is the next step in business process re-engineering and the outcome can be nothing short of spectacular.

**Short Biography:** Brad Nickle is the Executive Vice President of The Strickland Group which provides consulting service to the oil and gas industry. Brad specializes in systems integration of multi-disciplinary software found in the Energy Sector. Brad has extensive integration experience includes but is not limited to ERP’s, Accounting, Land, Reservoir Engineering, Reservoir Simulation, Pipe Simulation, GIS systems, PPDM Architecture, ECM, EIM and Robotic Process Automation. The Strickland Group’s clients include Oil and Gas major’s, independent E&P operators, Financial Institutions that invest in Oil and Gas properties such, Oil field service companies and other companies with interests in the energy sector. Clients of The Strickland Group include ConocoPhillips, British Petroleum, Hilcorp, Enervest, General Electric, Constellation Energy, and Halliburton. Mr. Nickle is a member of The Professional Petroleum Data Management Association, Association of Information and Image Management and has served on the board of the DFW Chapter of AIIM. Brad’s past speaking engagements include multiple presentations for the PPDM, Society of Petroleum Engineers, Gartner Group, Oil and Gas Investor, and ECM Global Conference.

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3:00-3:45pm

Panel of Operators: Open Subsurface Data Universe (OSDU)

Paloma Urbano (ConocoPhillips), Steven Taylor (Devon Energy) & Johan Krebbers (Shell)

Description of Presentation: In this roundtable conversation, Oil & Gas operators’ members of the Open Subsurface Data Universe Forum will present the key concepts of the Open Subsurface Data Universe and its purpose. They will give an overview of why OSDU is important to them and how they expect to impact their data and analytics environment. The conversation will cover aspects like: Vision of the OSDU, current and in progress OSDU Forum members, high level description of the OSDU reference architecture , in progress Cloud implementations of the OSDU and plans and roadmaps

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Short Biography: Paloma Urbano- IT Analytics Director with 20 years of experience in Information Management. She has implemented global seismic and wells projects with major Oil and Gas Operators. Sanjay Mehta, Manager – IT Advanced Analytics Sanjay Mehta is the Advanced Analytics Manager within the ConocoPhillips Advanced Innovation Center of Excellence. Sanjay has over 25 years of experience in the energy business industry including roles in the downstream, mid-stream and upstream

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*4:00-4:30pm*

**Closing Remarks**

**Trudy Curtis (PPDM)**