Data & Analytics Innovation Day

Innovative Solutions to Federal Financial, Energy, and Economic Development Mission Challenges

THURSDAY, NOVEMBER 3rd, 2016 | 9AM – 1PM

BOOZ ALLEN HAMILTON INNOVATION CENTER | 901 15th ST. NW | WASHINGTON, DC

Booz | Allen | Hamilton

Join Booz Allen Hamilton for an Innovation Day on Thursday, November 3, 2016, 9AM – 1PM to learn about data and analytics capabilities applicable to Federal Financial, Energy, & Economic Development missions.

INNOVATION DAY THEMES

HARNESSING THE POWER OF YOUR DATA
Do you have big data? Is it sitting in disparate, siloed locations? Learn how organizations can ingest, transform, store, and retrieve data across the enterprise while providing a platform for data science and advanced analytics

ADVANCED COMPUTING
What's next in analytics? What happens when machines become intelligent and take action, free of human intervention? Learn about cognitive computing and machine intelligence and how they can address mission challenges

RISK-BASED PRIORITIZATION AND ANOMALY DETECTION
Fraud in governmental programs increases costs, fosters criminality and erodes trust. Learn about analytic approaches and industry best practices for identifying bad actors and reducing / preventing fraud

EVIDENCE-BASED DECISION MAKING
Preconfigured Decision Accelerators include data sets, analytical models and visualization frameworks. Learn how these accelerators can help government agencies unleash financial and operational data to drive federal performance, use data science on open (and closed) data to enable data-driven government furthering mission and service delivery

BUILDING A DATA SCIENCE CAPABILITY
We believe that lowering the barrier for searching, sharing, and exploring data will enable everyone to leverage analytics as a competitive advantage for their organization. We also believe that institutionalizing data science is hard. Learn about tools and techniques to help an organization enable a data driven-culture

AGENDA

WELCOME & BREAKFAST	9:00am
INNOVATION TALKS ■ ■ ■ ■ with Booz Allen Data and Analytics Thought Leaders	9:15-10:15am
SOLUTIONS SHOWCASE ■ ■ ■ ■ ■ by Booz Allen and Key Delivery Partners	10:15am-11:15am & 12:00-1:00pm
PANEL DISCUSSION ■ ■ ■ ■ ■ with Data, Technology, and Mission-Focused Leaders	11:15am-12:00pm

BOOZ ALLEN DATA & ANALYTICS INNOVATION TALKS

Harnessing the Power of Your Data | *Jesus Jackson*

JESUS JACKSON is a Chief Data Scientist and Product Manager within Booz Allen's Strategic Innovation Group, leading various data science and cloud computing initiatives. Jackson specializes in enterprise Hadoop-based platforms and distributed search platforms. Jackson has extensive experience in the federal space standing up new Cloud-based environments and migrating legacy systems to Cloud infrastructures. Jackson holds a BS in Computer Science and Mathematics from University of Maryland, College Park and is a member of the Association for Computing Machinery.

Advanced Computing | *Drew Farris*

DREW FARRIS is a Chief Technologist, Principal Engineer and Data Scientist at Booz Allen Hamilton where he helps clients solve problems related to massive scale analytics, distributed computing and machine learning. He has a passion working with human languages and has implemented a wide variety of text exploration, management and retrieval applications combining natural language processing, classification and visualization techniques. Farris is also passionate about open source software, he is a member of the Apache Software Foundation and has contributed to a number of open source projects including Apache Accumulo, Mahout, Lucene and Solr. Farris holds a BFA in Computer Graphics and a MS in Information Resource Managements from Syracuse University's iSchool.

Risk-Based Prioritization and Anomaly Detection | *Ryan Tuggle and John Grumbine*

RYAN TUGGLE is a Chief Technologist at Booz Allen and is a leader in anomaly detection applications. Tuggle is one of the firm's analytics business leaders with a specialization in open data and advanced analytics for tax collection and financial regulation. He led agency DATA Act implementation for the Department of Treasury. He has experience working with the Bureau of Fiscal Service, Internal Revenue Service, Securities and Exchange Commission, and Census Bureau. Tuggle holds a BA in Economics from the University of Colorado, Boulder and a Master of Public Policy from Georgetown University.

JOHN GRUMBINE is a leader of Booz Allen's analytics practice for financial services and government clients. Grumbine leads teams of Booz Allen data scientists and client staff to proactively detect, resolve, and ultimately prevent fraud and noncompliance across all aspects of their missions. Grumbine has worked extensively across the lifecycle of noncompliance detection, workload selection & optimization, simulations, and continuous improvement efforts. Grumbine holds a BA in Economics from Washington & Lee University and a MBA from the Darden School of Business at the University of Virginia.

Evidence-Based Decision Making | *RK Paleru*

RK PALERU is a Principal leading Data Analytics Solutions within Booz Allen Hamilton's Financial, Energy, and Economic Development (FED) Market. Paleru has experiencing partnering with the U.S. Department of Treasury, Internal Revenue Service, Regulators (SEC, OCC, FDIC), U.S. Department of Commerce (Census Bureau, USPTO, NIST), and the U.S. Departments of Labor, Energy, and Agriculture. He leads the Solutions growth platform that build Open Data Accelerators, Evidence-Based Decision Accelerators, Citizen-Centric Digital Experience Accelerators across Data, Analytics, and Digital capabilities. Paleru started his career focusing on credit risk, structured finance, and investment banking with ICICI. He is currently Treasurer and member of the Board of Directors for Artomatic, a D.C.-based non-profit that promotes arts and building a community. Paleru holds a BS in Electrical & Electronic Engineering from Coimbatore Institute of Technology, a MBA from the University of Bombay, and a MS in Computer Science from the University of North Carolina, Charlotte.

SOLUTIONS SHOWCASE

■ CFO Analytics

CFO Analytics applies data visualization and statistical techniques to reveal meaningful patterns in public spending data. This demonstration project shows what will be possible when all federal agencies begin to disclose financial data in the standard schema mandated by the DATA Act, coming in May 2017. Sample dashboards introduce a visual framework for exploring available funds and allocations across programs as well as detection frameworks for uncovering unusual spending patterns. These financial analytics concepts offer a glimpse of the ways agencies and the public will put spending data to work for improved oversight and performance.

■ Data Science Capability Building

Booz Allen's approach to helping organizations realize the potential of data science and analytics rests upon a broad view of capabilities that move beyond algorithms and grasp the complex reality of how people work with each other, interact with technology and derive value from their data. Our holistic approach- from strategy to technology to analytic techniques- allows leaders to institutionalize data science as part of their organization's DNA, rather than just as a stove-piped function. The Data Science Capability Building demonstration will consist of four related Booz Allen service offerings:

+ Data Science Talent Management Model (TMM), a suite of integrated tools that help organizations strategically manage data scientists across the talent lifecycle
+ DScVR and ADAPT+C, frameworks for assessing an organization's data science capability and maturity
+ Data and Analytics Catalyst, a full-suite of services and solutions to aid leaders who are powering their organizations toward a data-driven future.

■ ■ DAAS

Dashboards as a Service (DaaS) is Treasury's "one stop" solution for data analysis, data visualization, reporting, and business intelligence. Encapsulated within a tailored Web portal, DaaS provides a user-friendly and secure platform for creating, hosting, and sharing executive-level dashboards to inform business decisions, provide key insights to improve business performance, and advance the agency's mission. Key features include

a mobile-responsive Web interface, modern and reusable dashboard templates, and prescriptive analytics to help derive relevant "quick-look" performance metrics. DaaS' highly flexible and self-service tools support a variety of use cases and business functions – including workforce analysis, cybersecurity, budget and finance, and regulatory compliance – to provide users with a truly unique and differentiated product.

■ Eradicating Hunger with Open Data

The White House Open Data initiative calls on agencies to develop interoperable open data services that support downstream processing and dissemination. These efforts have provided a gateway for researchers and innovators to derive valuable insights from government data and improve decision-making processes. As a demonstration project for agencies interested in using open data to advance their missions, we used open data to analyze the USDA's Supplemental Nutrition Assistance Program (SNAP). A team of analysts gathered open data and applied data mining and machine learning techniques to help explain the differences in SNAP participation rate (fill rate) across states. The analysis helped USDA better understand the causes for SNAP's variation in performance, which in turn will help them make data-driven decisions to improve the program, and by doing so, help reduce hunger in the US.

■ Financial Regulator Data Lake

As data continue to grow, financial regulators need to better utilize and analyze their data to meet increasingly stringent compliance requirements. Traditional tools are inadequate and fail to scale effectively to meet the demands of an ever-growing amount of data, essentially creating a glass ceiling with data. Booz Allen has developed a way around that glass ceiling with the Data Lake, to collect, store, transform and integrate data. The Data Lake enables financial regulators to cost-effectively use their data to drive significant insight and provide powerful analytic capabilities to their end users.

■ ■ Sailfish™

Don't let your data own you. Sailfish™ is Booz Allen's proprietary data analytics solution that offers users an end-to-end data science solution designed to help organizations of all sizes address data and analytics challenges. With Sailfish™, insights into your complex data are within reach - for everyone. Sailfish™ combines

two powerful web-based applications with on-demand access to Booz Allen's team of over 600 expert data scientists and specialists. Learn more and try it out for yourself at http://www.boozllen.com/sailfish.

■ USPTO Cancer Network Miner

Booz Allen and Omnity partnered to develop NIH / USPTO Cancer Network Miner which shows how individual research institutions can serve as a lynch pin between related groups of researchers, and how knowledge and discoveries are disseminated through research communities. Our solution will help the research community better understand the return on investment from research grants by revealing otherwise hidden conceptual connections shared between patents, research grants, and clinical trials.

■ ■ Fraud Kiosk

The Booz Allen Fraud Kiosk solution leverages advanced analytics and predictive modeling techniques to tackle a variety of data and payment challenges. The system leverages the Booz Allen Cloud Analytics Reference Architecture to easily ingest and manage various datasets. Built on this architecture, the Kiosk utilizes an advanced front end user interface with prepackaged ETL tools, predictive modeling algorithms and visualizations that showcase Booz Allen's data analytics expertise and data visualization capabilities. The Kiosk represents the power of analytics to enable evidence-based decision making to combat fraud.

■ ■ SmartWall

The SmartWall is a customizable open-source solution for operations management and program/campaign tracking. This modular tool is built on the R statistical software and uses the R Shiny package for visualization. It is capable of sitting on top of any data storage solution and applying the breadth of analytical tools available within R to help managers better access and understand operational data. The SmartWall is also web-accessible and can be viewed on any device through a browser or run locally as part of a command center. The initial version of the SmartWall was prototyped to support a marketing a communications campaign for the 2020 Census.

■ ■ Wolf Trap

Wolf Trap is an investigative interface for financial regulators to monitor and identify marketplace entities promoting fraudulent "pump and dump" schemes based on anomalous activity and chatter in the marketplace. The proof of concept tool aggregates data from a variety of publicly-available unstructured data sources including public corporate filings, Twitter, and stock promotion newsletters / emails, in combination with structured data such as daily stock trading data. Wolf Trap uses advanced analytics and natural language processing to intelligently extract the most relevant pieces of information, enabling investigators to quickly search and prioritize key players in the market and visually analyze their connections across a wide variety of structured and unstructured data at a massive scale.

KEY DELIVERY PARTNERS

■ Amazon Web Services

Website: https://aws.amazon.com

For 10 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers over 70 fully featured services for compute, storage, databases, analytics, mobile, Internet of Things (IoT) and enterprise applications from 38 Availability Zones (AZs) across 14 geographic regions in the U.S., Australia, Brazil, China, Germany, Ireland, Japan, Korea, Singapore, and India. AWS services are trusted by over a million active customers around the world -- including the fastest growing startups, largest enterprises, and leading government agencies -- to power infrastructure, increase agility, and lower costs.

■ ■ Docker

Website: https://docker.com

Docker provides an out of the box containers as a service (CaaS) environment with integrated workflows to build, manage and deploy applications with open standards and interfaces to allow for easily customizing to your agency and your application. With an integrated technology platform that spans across the application lifecycle with tooling and support for both developers and IT operations, Docker Datacenter delivers a secure software supply chain at enterprise scale. Ultimately, Docker can be used to build and ship software in a trusted and secure manner.

■ Elastic

Website: https://elastic.co

Elastic believes getting immediate, actionable insight from data matters. As the company behind the open source projects — Elasticsearch, Logstash, Kibana, and Beats — designed to take data from any source and search, analyze, and visualize it in real time, Elastic is helping people make sense of data. From stock quotes to Twitter streams, Apache logs to WordPress blogs, our products are extending what's possible with data, delivering on the promise that good things come from connecting the dots.

■ Microsoft Azure

Website: https://azure.microsoft.com

The Microsoft Data Platform has long been a leader in data science capabilities. Power BI, Microsoft R Server, Microsoft SQL Server 2016, and the Microsoft Azure platform all provide essentials solutions that allow organizations to leverage big data. The demonstration will be focused on NHTSA Traffic fatality data. In response to a White House call to action (https://www.whitehouse.gov/blog/2016/08/29/2015-traffic-fatalities-data-has-just-been-released-call-action-download-and-analyze), the team pulled the traffic fatality data, weather conditions, and data from other related sources into the Microsoft Cortana Intelligence Suite, analyzed the data, and created visualizations in Microsoft Power BI to help explore the data and derive insights.

■ ■ Socrata

Website: https://socrata.com

Socrata provides a software-as-a-service (SaaS) data platform and cloud applications exclusively for city, county, state and federal government organizations, allowing government data to be discoverable, usable, and actionable for government knowledge workers and the citizens they serve. Government programs generate massive amounts of data, but the vast majority of it is locked away in hard-to-access data silos. Socrata allows for unprecedented data access to dramatically impact the effectiveness of government programs, whether aimed at improving quality of life for citizens, establishing sustainable impact on local economies, or achieving excellence in government operations.

■ Tableau

Website: https://www.tableau.com

Tableau is a 15-year-old Data Analytics and Visualization firm that is solely focused on helping people see and understand their data. With 45,000+ unique clients globally, and a footprint within a vast majority of Federal agencies, we are helping break down the barriers between the data that has been collected and using that to gain insights for better decision making.

We will be featuring demonstrations at our table focused on helping people to;

1. Apply techniques such as cross database joins and blends to Discover and harness the power of your data, however big, disparate, or siloed it may be.
2. Gain actionable insights by applying visualization best practices to quickly and easily identify anomalies and outliers in your data.
3. Perform Data analysis through free-form intuitive visual exploration of your data and act upon the insights your data provides you.

PANELIST BIOS

Justin Antonipillai | *Panelist | Delegated Duties of the Under Secretary for Economic Affairs, Department of Commerce*

Mr. Antonipillai serves as Counselor to Secretary Penny Pritzker, with the Delegated Duties of the Under Secretary for Economic Affairs. In this capacity, he leads the Economics and Statistics Administration, which includes the Office of the Chief Economist, the Census Bureau and the Bureau of Economic Analysis. Prior to joining the Commerce Department, Mr. Antonipillai was a partner with the international law firm of Arnold & Porter LLP. He received his BA from Cornell University in 1994 and a law degree from American University in 1997.

Tom Beach | *Panelist | Senior Advisor Data Strategy, US Patent and Trademark Office*

Mr. Beach is a Senior Advisor in office of the Under Secretary of Commerce for Intellectual Property. As a Senior Advisor, Mr. Beach supports the Director and Deputy Director of the USPTO to achieve mission critical goals and to manage operations of the agency. He also serves as the Data Strategist and Portfolio Manager of Digital Service & Big Data (DSBD) to deliver on both the Open Data and Big Data Programs and leads the USPTO Data Governance Board. The strategic vision of the DSBD portfolio is to unleash and unlock the value of our Open Data Initiative and to harness the power of "big data" enterprise-wide as a data-driven program to leverage data for actionable intelligence creating operational effectiveness through advanced analytics and disruptive technology. Mr. Beach graduated from the Georgia Institute of Technology in Engineering and received his Master's Degree from Georgetown University's McDonough School of Business.

Steve Escaravage | *Panelist | Vice President Strategic Innovation Group, Booz Allen Hamilton*

Mr. Escaravage is a Vice President in Booz Allen's Strategic Innovation Group with over 15 years of strategy and technology consulting experience. He is a leader in Booz Allen's Data Science Practice, serving Federal and Commercial Health clients including the Food and Drug Administration (FDA), the National Institutes of Health (NIH), and the pharmaceutical industry. Mr. Escaravage also leads Booz Allen's next-generation analytics partnerships in the areas of pharmacovigilance, EHR analytics, and quantified self. Prior to his current role, he lead technical delivery and business development activities for US Civil Health Agencies, Oil and Gas Production Companies, Pharmaceutical Manufacturers, Financial Services Institutions, and organizations within the US Department of Defense. His expertise is in applied mathematics, risk-based optimization, and data mining. He holds an M.S. Degree in Operations Research from George Mason University and a B.A. Degree in Mathematics from Rutgers University.

Dennis Tally | *Panelist | Director Data Strategy and Governance, Freddie Mac*

Mr. Tally is Director – Data Strategy and Governance, in the Single Family Division of Freddie Mac. Mr. Tally began his Freddie Mac career in 2004 and he has served in a variety of roles within the Information Technology, Finance, and Single Family Divisions. As Director – Data Strategy and Governance, Mr. Tally works across the Single Family business to leverage data, analytics and technology to further business strategy. He is responsible for the development and implementation of the Single Family data strategy and the enablement of business intelligence and analytics capabilities. His responsibilities include: business ownership of shared datamarts and analytic platforms, establishment of a 3rd party data asset management function, establishment of a strategic vendor management function, establishment of a Big Data Center of Excellence focused on the enablement of new data capabilities. Prior to his career at Freddie Mac, Mr. Tally was a Senior Principal at American Management Systems, Inc. where he led a team focus on the development and operations of enterprise data warehouse and reporting solutions. He earned his B.A. at the University of Rhode Island.

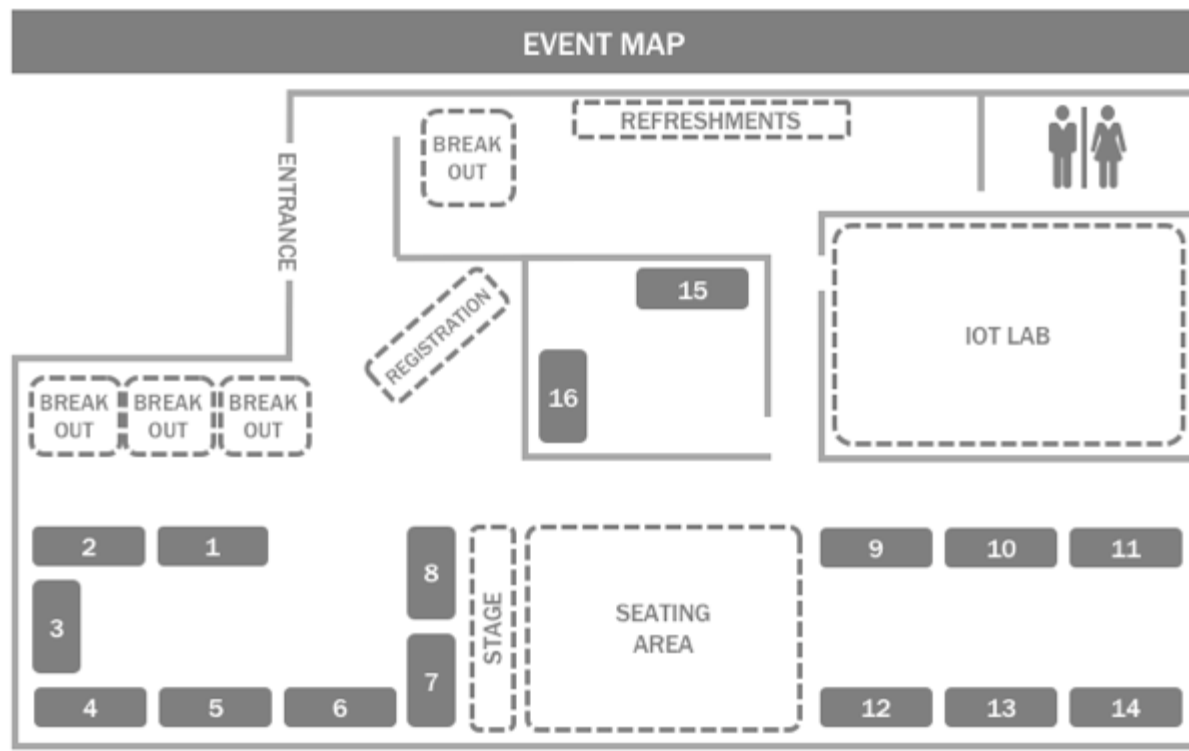**George Young** | *Panelist* | *Area Vice President – Public Sector, Elastic*

Mr. Young is the Vice President of Public Sector at Elastic. He has been around federal projects for over 20 years serving roles at startups and large companies like Cisco and IBM and has worked with every segment of the government market. The past few years he has been in the open source world helping users across government solve mission critical problems in cyber security, analytics, geospatial, and big data. Mr. Young is responsible for all public sector markets in the US at Elastic.

Ezmeralda Khalil | *Moderator* | *Principal, Strategic Innovation Group, Booz Allen Hamilton*

Ms. Khalil is a Principal within Booz Allen's Strategic Innovation Group and the Data Science and Advanced Analytics lead for our Finance, Energy and Economic Development (FED) business. She developed and leads the firm's Data Science Capability Building service offering helping leaders—such as Chief Data Officers, Chief Analytics Officers, Chief Data Scientists and Analytics Center of Excellence leaders—on their journeys to becoming data- and analytics-driven organizations. The offering integrates strategy, data, analytics, technology, talent and cultural change to support clients in their transformation. Ms. Khalil has over 15 years of experience leading enterprise-wide transformation, strategic planning, process improvement, and change management engagements in the public and private sectors. She holds a M.S. in Engineering Management from George Washington University and a B.S. in Mechanical Engineering from the University of Maryland.

SHOWCASE MAP

EVENT MAP

ENTRANCE

BREAK OUT

REFRESHMENTS

REGISTRATION

15

16

IOT LAB

2   1

3

8

STAGE

SEATING AREA

9   10   11

4   5   6

7

12   13   14

BREAK OUT   BREAK OUT   BREAK OUT

DEMOS

1. Wolftrap ▪ ▪
2. Microsoft Azure* ▪
3. Eradicating Hunger with Open Data ▪
4. Elastic* ▪
5. USPTO Cancer Network Miner ▪
6. Tableau* ▪
7. Docker* ▪ ▪
8. Fraud Kiosk ▪ ▪
9. Sailfish™ ▪ ▪
10. Socrata* ▪ ▪

11. Data Science Capability Building (DScVR, Data Science Talent Management Model (TMM), 13. ADAPT+C, Data & Analytics Catalyst (CDO Offering) ▪
12. Amazon Webservices* ▪
13. DAAS ▪ ▪
14. Financial Regulator Data Lake Demo ▪
15. CFO Analytics ▪
16. SmartWall ▪ ▪

Booz Allen Partner Demonstration

INNOVATION DAY THEMES

▪ HARNESSING THE POWER OF YOUR DATA

▪ ADVANCED COMPUTING

▪ BUILDING A DATA SCIENCE CAPABILITY

▪ RISK-BASED PRIORITIZATION AND ANOMALY DETECTION

▪ EVIDENCE-BASED DECISION MAKING

FOR MORE INFORMATION, CONTACT: InnovationDay@bah.com