Response to Request for Information 19FS1A18N5000
"Data Literacy, Analysis, & Visualizati1on Workshops"

RFI Responses/capability statements should include the following:

1. Contact information:
   a. Name of company: Quant-Fluent
   b. DUNS number   # 081153854
   c. Institutional or organization affiliation (if applicable): None
   d. Email address: Marc@quant-fluent.com
   e. Phone number: 651-335-2190

2. Summary of credentials/professional experience relative to similar requirements;

   Quant-Fluent was founded to provide assessment and training to improve the data literacy of your organization. With over a combined 40 years of academic and industry experience teaching statistical and data literacy, we are uniquely positioned to combine our industry experience, academic credentials and educational / training backgrounds to help improve the data literacy and data analysis skills of the Foreign Service Institute.

   Marc Isaacson, President and Co-Founder of Quant-Fluent, is a leader and advocate for Data Literacy. Combining his corporate experience in engineering and high tech manufacturing with his 20 years of experience teaching at the undergraduate and MBA level for Augsburg University and the University of St Thomas, he has a unique ability to help individuals assess and improve their data and statistical literacy skills. Currently, he is serving his second term as an elected officer of the National Numeracy Network, which is dedicated to improving the teaching of Quantitative Reasoning in higher education. In addition, he is also the founder of the Data Literacy Network, which was created to provide information and resources to Data Literacy Champions at organizations of all types and sizes.

   Dr. Milo Schield, Co-Founder and Statistical Literacy Expert: In addition to being a professor in the Department of Business Administration at Augsburg University, Milo is considered "the leading voice of the statistical literacy movement". Over the last twenty years, Milo has authored over 70 publications and given 200 talks on six continents. He is also the editor of www.StatLit.org, the #1 ranked website on Statistical Literacy. In addition, he has given presentations on statistical literacy at the Department of Justice, Census Bureau and the Centers for Disease Control. In 2006, he authored a textbook Statistical Literacy: Seeing the Story Behind the Statistics. Currently he is working with Wiley Publishing on a new textbook on statistical literacy for decision makers and serving as Vice-President of the National Numeracy Network.

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3. Recommendations to improve or clarify the Draft PWS;

    On page two under the heading of Consumers of Data Analysis, it is stated that data and statistical literacy materials might be aimed at executives and managerial-level staff for interpreting data analysis "to better inform their decision making processes". This result is not emphasized on page 3 in the bulleted list of performance outcomes. At Quant-Fluent, our definition of Data Literacy focuses on the ability of an individual (or organization) to extract information from data, communicate it effectively and utilize it to make business decisions. We would recommend adding this item to the bulleted list of requirements as an essential part of consumer data literacy.

4. What information can/should be added to the document?

    It would be helpful to understand the contents / curriculum of the existing training currently provided in "Data Analysis & Visualization" along with the level of Excel proficiency taught / demonstrated. This would be particularly useful in designing intermediate and advanced workshops for Data Producers to ensure the appropriate materials could be covered without too much overlap or gaps in content knowledge.

    In addition, information on the number of possible students and the depth of training desired would be useful in designing seminar / workshop curriculum. Based on our experience, the study of data analysis and data / statistical literacy does require a substantial investment of time. While the mechanics / mathematics of data analysis are procedural, the application of critical thinking in the consumption of data analysis is an intellectually challenging activity. Since it cannot be outsourced to computer software, it requires dedicated time to learn and apply these new skills. We recommend that workshops be 2 to 3 days in length (either sequential or taught across multiple weeks).

5. Do you have any existing commercially available training courses that can meet SAIT's needs as described in the Draft PWS?

    As instructors of statistical literacy and data analysis courses for over 20 years, Marc and Milo have a wealth of classroom-tested activities that have been used with over a thousand students at both the undergraduate and MBA level. Most recently in March 2018, we conducted an invited 4-hour pre-conference workshop on Data Literacy Assessment at the Gartner Data Analytics Summit in Dallas, TX (See www.Quant-Fluent.com). In addition, Marc has designed and taught online statistics and statistical literacy courses for Capella University. At Augsburg University, Milo developed and continues to teach a course called "Statistical Literacy for Managers", which has been taught both in the classroom and fully online. In the past, Milo has given presentations on statistical literacy for audiences at the Census Bureau, Bureau of Labor Statistics and the CDC.

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6. Given the scope of this RFI, what software tools do you recommend providing training on or familiarization with in support of the objectives?

   Consumers of Data Analysis: Our philosophy is that Data Literacy for consumers should not be dependent on any software familiarity. The knowledge and skills of consuming data should be independent of any particular software knowledge. The focus of our training in this area is on the communication (reading, writing), evaluation and decision making using summarized data in various forms.

   Data Analysis Producers: Many of the basics of administrative data summary and analysis can be accomplished via an intermediate level of knowledge with MS Excel. For those doing more sophisticated data visualizations, Tableau or Excel BI might be an appropriate choice

7. Please describe how your firm would structure classes that accomplished the described outcomes listed on the Draft PWS.

   We would structure expanded training opportunities along two different tracks. One series would focus on the needs of Data Analysis Consumers while the second would focus on Data Analysis Producers. While the two tracks would be independent, we recommended that those employees who are Data Producers also participate in the Consumer courses, as it is important for those producing data analysis to be competent Consumers of Data Analysis.

   In addition, a third type of workshop might also be included for those interested in Organizational Data Literacy from a management perspective. See details below.

   <u>**Consumers of Data Analysis:**</u>

   > <u>Introductory Seminars / Lectures</u>: Content of course might include overview of data / statistical literacy for decision makers, developing a data consumer mindset and introduction to the broad categories of influences to consider when evaluating data and making decisions.

   > <u>Intermediate Level Workshops:</u> Content of course might include a more in-depth coverage of the skills and challenges involved with the evaluation of summary data, charts and tables along with the communication of results. In addition, interactive activities and case studies would focus on the analysis and evaluation of data analysis results aimed at making business decisions.

   > <u>Advanced Level Workshops:</u> Designed for those who have completed the Introductory and Intermediate level Data Consumer Courses, this workshop would focus on being a consumer of more advanced statistical and data analytics. In addition, participants would spend time analyzing guided case studies focused on reading and evaluating summarized data. Depending on class size and length in hours, it is possible that this workshop could also be designed to allow participants to work with their own individual data products (reports, charts, tables, etc.).

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Producers of Data Analysis

Intermediate Level Workshops: Content of course might include a more in-depth coverage of tools in Excel to summarize, model and analyze data in Excel. Sessions would include some technical content along with a guided case study using data within a context.

Advanced Level Workshops: Designed for those who have completed the Intermediate level Data Producer Course, this workshop would focus on being a producer of more advanced statistical summaries. In addition, participants would spend time analyzing their own datasets to answer questions of interest relevant to their needs and create reports, summary statistics, and visualizations.

Organizational Data Literacy: Creating a Data-Driven Culture

Besides the skills based courses above for Consumers of Data Analysis and Data Analysis Producers, the creation of a data driven culture would be an appropriate workshop for those interested in becoming Data Literacy Champions and creating a culture of Data Literacy within their organization. Aimed at managers and other executives, topics would include methods of assessing the current level of Data Literacy for individuals as well as entire organizations. In addition, discussion of methods for building a data-driven culture along with case studies of other organizations who have undertaken their own data driven initiatives are covered.

8. What are the recommended class sizes (number of students per) for the various types of workshops and/or seminars that your firm suggests?

Consumers of Data Analysis:

Introductory Level: 20-25 students would be maximum. 15-20 might be ideal. This allows for increased some student participation / interactivity.

Intermediate / Advanced Levels: For more intensive workshops, an ideal number of students might be 10-15. Perhaps even fewer at the advanced level where individualized attention to student data products (reports, charts, tables, etc.) is included.

Producers of Data Analysis:

Intermediate / Advanced Levels: For more intensive workshops, an ideal number of students might be 10-15. Perhaps even fewer at the advanced level where individualized attention to student datasets and questions of interest are included.

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9. Given the objectives, what are your recommendations for class length? How many hours of instruction do you recommend for the various types of workshops (intermediate-level, advanced level) and/or seminars?

   Based on the objectives provided and our previous experience with similar educational settings, we would propose the following class lengths:

   Consumers of Data Analysis:

   > Introductory Seminars / Lectures: 2 hours to Half-day depending on amount of content desired and level of interactivity desired.

   > Intermediate Level Workshops: Half-day to 2 days depending on amount of content desired and level of interactivity desired.

   > Advanced Level Workshops: Full day to 2 days depending on amount of content desired, level of interactivity desired and whether individuals might investigate / discuss their own data products (reports/ tables/ charts).

   Data Analysis Producers

   > Intermediate Level Workshops: Half-day to 2 days depending on amount of content desired and level of interactivity desired.

   > Advanced Level Workshops: Full day to 2 days depending on amount of content desired, level of interactivity desired and whether individuals might investigate / analyze their own data to create reports, summary statistics, and visualizations.

10. Would you be able to manage/recommend students bring in their own data sets for various types or levels of workshops?

    Yes, the ability to utilize their own raw data sets could be handled in an Advanced Data Analysis Producer workshop. Ideally, this would be done after a pre-requisite Intermediate Level Producer Workshop giving students experience with a guided data analysis experience.

    In addition, the ability to use their own summary data products (reports, tables, graphs, etc.) could be handled in an Advanced Consumer of Data Analysis workshop. Again, this would be assuming that they had previously completed the earlier introductory and intermediate level training sessions.

11. What type of training environment do you recommend?

    For introductory Data Consumer lecture seminars, the setup could be quite flexible. An instructor projector and computer would be necessary. While data analysis software would not be utilized, some use of technology might occur for interactive activities / assessments via student laptops and a web browser.

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For workshop sessions, a projector and instructor computer would also be needed. The preferred training environment might be a room with tables for students with laptops. Settings with round tables or other flexible setups would allow participants to collaborate on interactive group activities.

12. Do you have a training environment that could host this training?

    No, not in the Washington D.C. area

13. Based on the information and recommendations that you provide for items 6-12, please state the estimated firm fixed price(s) for delivery of the workshops per your recommendations. Any theoretical price quote(s) that are provided are understood to be both notional and nonbinding.

    Total firm fixed prices would be highly dependent on the number of students to be trained and the length of time preferred for each type of session and level. Price range would typically range from $5,000 to $8,000 per day of training (1-3 sessions per day). Some consideration could be given for repeated offerings of the same course. Ultimately, much of this material might also be able to be offered at a lower cost via either fully online or other distance education methods.

14. Any additional information that may benefit the Government to refine the Requirements Document.

    None at this time.

15. Recommendations on the appropriate NAICS code for this requirement.

    None at this time.

Respectfully Submitted by:

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