Arlington Public Schools

THE BIG DATA CHALLENGE

Schools across the country are now starting to understand the potential that **BIG DATA** has to drive achievement for all students to higher levels. But, we are challenged by issues related to data: the relevance of the data we traditionally collect and the need to establish better ways to collect, crunch and provide real value to our instructional programs. To explore these issues, Arlington Public Schools formed a roundtable group of APS staff and industry leaders to explore the use of **BIG DATA** to inform our work here, and, equally important, to provide information that can serve as a focus for discussion and debate with our colleagues across the Commonwealth and the nation. A brief summary of our project and some key findings are summarized here. More information is available at www.apsva.us/bigdata

WHAT: PROJECT SUMMARY

What is the research question?	What and how was data made available?	How we worked with Data teams?
What predictive data analysis can help identify trends, patterns and key attributes and their weight that will help with early identification of students who are at risk of dropping out, who are deviating from a path that will get them to advanced diplomas or finishing Career and Technical sequences.	APS presents to the state a comprehensive student data set multiple times a year. APS took the data submitted to the state as the primary data source for the purposes of this exercise. Additional APS data was also coupled with this data to help with effective analysis. Individual identities were masked to protect student information and the data was presented over a secured platform.	Twenty-three data teams applied for the competition. Teams included enterprises, Universities and Individual groups. Teams with access or potential access to student data that could derive student identities had to be excluded. All teams had to sign an agreement with APS for accountability and confidentiality to be given a secured access to data set with data markers.

SO WHAT: KEY FINDINGS

- **Existing school data collection systems (local, State and Federal)** must evolve to better inform school district practices and educational policy decisions.

- **State presented data coupled with District data can give us greater insight** as we have the opportunity to analyze different sets.

- **Raising the level of consistency in the way data are interpreted and captured in the systems** will bring much greater value to the analysis.

- **Analysis of student data in this study for APS** revealed that attendance, behavior and course performance together with socio-economic status, are the most predictive indicators of those students who drop out and those who receive an advanced diploma.

NOW WHAT: NEXT STEPS

- Through all the lessons learned in successfully running this exercise as a proof of concept, **APS has developed a model to execute these types of data exercises** that APS or any other school district could use effectively.

- Systemic recommendations on **how APS captures and interprets** some of the student performance attributes to allow for more accurate predictive models.

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September 2014