

Client Summary

Bowie State University (<https://www.bowiestate.edu/>) is the oldest HBCU in Maryland and part of the University System of Maryland. With an enrollment of over 6,300 students and offering 28 undergraduate, 20 Master's, and 3 doctoral programs, Bowie State generates and collects a wide variety of student data, from enrollment to retention to graduation and beyond. The responsibility for managing and reporting on that data falls to Bowie State's Office of Planning, Analysis and Accountability (OPAA). When OPAA found that their analytics needs had outpaced their current technologies, they looked to Oracle for a high-powered solution combining Oracle Analytics Cloud (OAC) and Oracle Autonomous Data Warehouse (ADW).



The Project

On a recommendation from Oracle, Bowie State turned to Vlamis Software Solutions in March 2022 to architect a higher education student analytics system. The project would require using Oracle Analytics Cloud (OAC) for reporting and visualizations and Oracle Cloud Autonomous Data Warehouse (ADW) for collecting and organizing Bowie State data from PeopleSoft Campus Solutions, syndicated data services, and other data sources. Bowie State and Vlamis decided to lay the foundation for the overall design with enrollment data because of its central position in the function of the university.

While the enrollment analytics project was being designed, Bowie State asked Vlamis to analyze data related to its undergraduate alumni who go on to pursue post-graduate education. This proved to be a perfect opportunity to build organizational support by delivering a quick win through showcasing the capabilities of Oracle Analytics Cloud. The engagement evolved into two projects:

- Design and implement Enrollment Analytics
- Demonstrate quick results with Postgrad Analytics

Post-Grad Analytics Deliver Quick Win

For the post-grad analytics project, Vlamis is analyzing data that combines Bowie State's bachelor degree recipient data with that from the National Student Clearinghouse (NSC, <https://www.studentclearinghouse.org/>). NSC is a syndicated data service that collects and distributes postsecondary enrollment and graduation data from nearly 3,600 colleges and universities. Bowie State wants to know, for instance, whether their nursing students are pursuing graduate studies, what schools they are attending (whether for nursing or another subject), and how many years after graduating from Bowie State. Knowing the answers to these and similar questions helps Bowie State demonstrate the effectiveness of their academic programs to its internal and external customers, including potential students.

This solution was demonstrated in an Analytics and Data Oracle User Community (AnDOUC, <https://andouc.org/>) TechCast in September, 2022 titled [Assessing Post Grad Outcomes Using Oracle Analytics Cloud & ADW](#) and at Oracle CloudWorld 2022. Bowie State's analytics system was also featured at the [Association for Institutional Research's 2023 AIR Forum](#).

Enrollment Analytics Set the Foundation for BSU's Analytic Warehouse

The core activities of any university revolve around the enrollment of students in different class sessions for different terms. By starting with a defined set of tables from the PeopleSoft source system and building a dimensional star-schema model, Vlamis was able to set the pattern for future expansion and development of the warehouse. This also enables BSU's executives to visually understand their data in a "slice and dice" exploratory manner without the need to have someone else write extensive custom SQL queries against the transactional system tables. The set of

dashboards and design of the data visualization canvases also establish a modern and intuitive interface for reporting student success data consistently across the organization.

Benefits

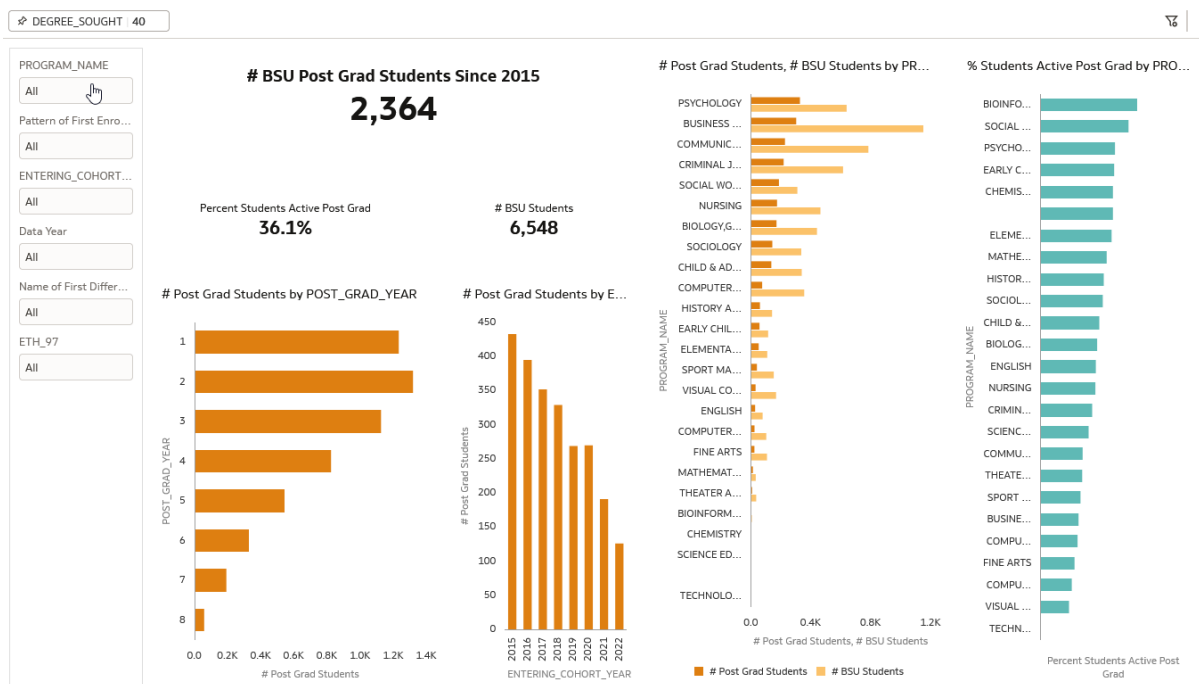
With the completion of this project, Vlamis has provided the following benefits to Bowie State:

- Created a solid foundation for enrollment and student success analyses.
- Developed a data infrastructure that allows for future integration across multiple campus data sources.
- Enhanced institutional effectiveness and academic and student success analytics system that is accessible and transparent.
- Produced real-time data visualizations that support institutional and academic decision-making by leveraging current and year-over-year comparisons.

Collaborating with Vlamis Software Solutions was critical to the success of Bowie State’s strategic objective to build a “Bulldog Datahouse”. The Vlamis team provided the ADW and OAC expertise on all facets of the project from database design to dimensional modeling and schema design to visualizations and training. Throughout the project, Vlamis has been a valued partner who listened, guided, and accomplished each phase successfully. — Gayle Fink, Assistant Vice President for Institutional Effectiveness, Bowie State University

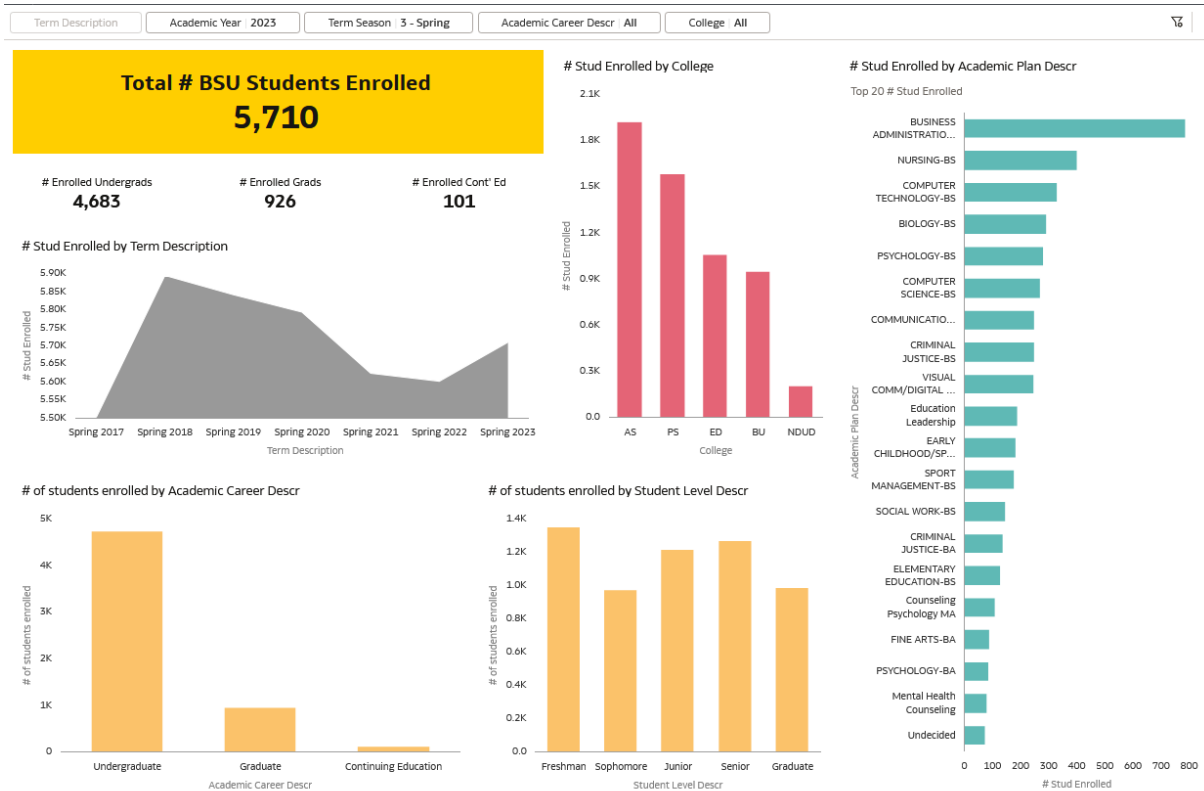
Dashboard Examples

In this screenshot, we can see how many students go on to post-graduate studies and what percentage of students pursue post-graduate work by program.



In this screenshot we can see how student enrollment varies across academic years, by college, by academic plan, and student level. Enrollment dipped during COVID years.

Case Study: Bowie State University



Technologies Used

For this project, Vlamis and Bowie State worked with the following Oracle technologies:

- Oracle Analytics Cloud (OAC)
- Oracle Autonomous Data Warehouse (ADW)
- Oracle Data Integrator (ODI)
- Oracle Cloud Infrastructure (OCI)

Next Steps

Vlamis and Bowie State are now looking at extending enrollment analytics to incorporate outcome data, including student success measurements such as grades and degrees earned. Additional student attributes such as ethnicity, first time to college, financial aid data, and athletics participation data, combined with outcome data will enable investigation of correlations and potentially causes, of various outcomes: positive, negative, and neutral. For example:

- What environments and courses best support student success?
- Which courses are central to various degrees?
- What courses outcomes are most predictive of students leaving Bowie State?

Eventually, we hope to incorporate machine learning algorithms to look for anomalies and improve Bowie State's offerings.

For more case studies about Vlamis clients, see our [Case Studies](#) page.

Contact Us

✉ info@vlamis.com

📞 +1 816-781-2880

www.vlamis.com