

APPLICATIONS AND DATA



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BOT Business Affairs Presentation
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APPLICATIONS

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BANNER

- Higher education ERP system
- Adopted in 2002 by 14 of 16 UNC campuses
- Provides limited core functionality
- Strong student system and internal integration
- Very configurable
- Regular upgrades, esp. for Financial Aid
- New functionality introduced slowly
- Hosted by UNC System Office
 - > Data replication and service failover between MCNC and Western Data Center
 - > Shared DBA and System Administrators

Functionality in Use

- > Course Catalog
- > Student Records
- > Registration
- > Financial Aid
- > Budget
- > General Ledger
- > Accounts Receivable
- > Accounts Payable
- > Human Resources
- > Payroll

BANNER ISSUES

- Many components not used
 - > Limited capabilities and architecture
 - > Cumbersome user interface
- Much functionality missing
- Architecture limitations
- Ellucian also owns Colleague and PowerCampus
 - > Resells software from other vendors
 - > Significant revenue from consulting

Functionality Not Used/Missing

- > Alumni/Donor Database
- > Donations
- > Purchasing
- > Online Employee Recruitment
- > Online Payments
- > Degree Audit
- > Student Success
- > Document Management
- > Recruitment
- > Travel
- > Health Records
- > Parking
- > Research Administration

BANNER REQUISITIONS

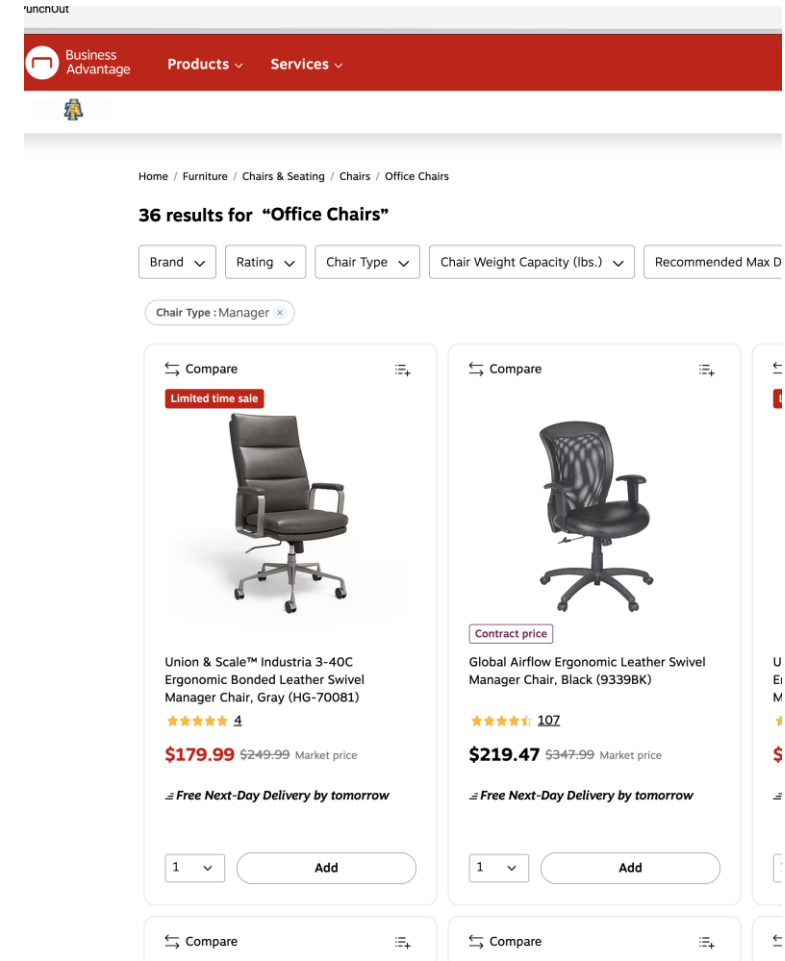
- Text-based data entry

Requestor/Delivery Information		Vendor Information		Commodity/Accounting		Balancing/Completion	
COMMODITY							
Item	Commodity	Description	U/M	Tax Group	Quantity	Unit	
	710700	Promotional T-shirts	EA		50.00		
Extended Amount		300.00		Tax		0.00	
Discount		0.00		Commodity Total		300.00	
Additional		0.00					

Navigation: 1 of 1 | 10 Per Page

JAGGAER REQUISITIONS

- Convenient, shopping cart user interface
- Integrates with online stores from vendors
 - > Approved vendors
 - > Approved product lists
- Integrates with Banner for PO numbers and budget encumbrance.
- Unusual items still require manual data entry.



ADDITIONAL APPLICATIONS

- Additional or improved functionality
- Widely used across campus
- Most Software as a Service (SaaS) or vendor hosted

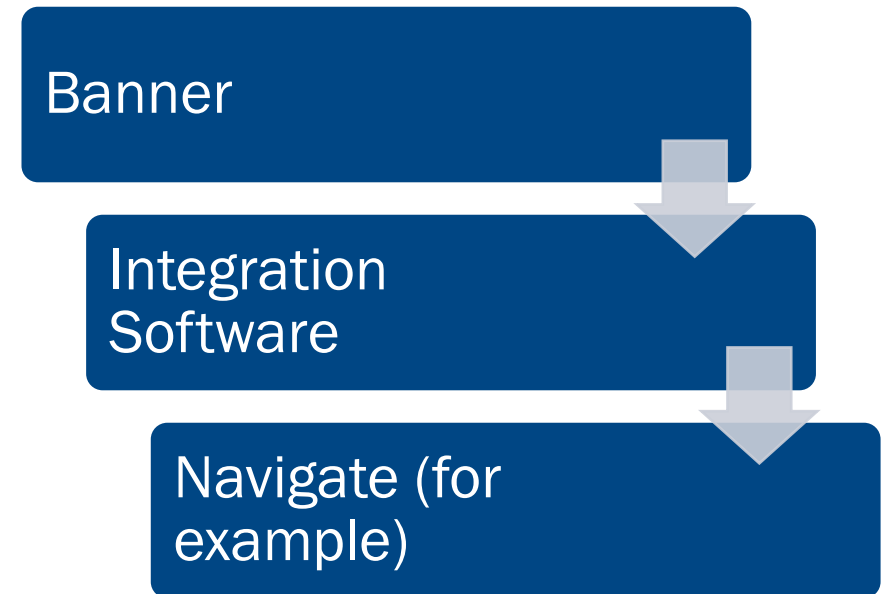
- > Navigate
- > ChromeRiver
- > DegreeWorks
- > Xtender
- > Anaplan
- > Aculog
- > Curriculog
- > WebFOCUS
- > Tableau
- > ALEKS
- > Residential Management
- > TouchNet Cashiering
- > TouchNet Payment Center
- > T2 Parking
- > CS Gold
- > InfoEd
- > PeopleAdmin

Sample Applications

- > Qwickly Attendance
- > Blackboard
- > 25Live
- > Maxient
- > Raiser's Edge
- > Qualtrics
- > JAGGAER
- > Dynamic Forms
- > Data Cookbook
- > Medicat
- > Slate
- > HandShake
- > EvalKit

INTEGRATION

- Integration is required to move data between Banner and other applications
 - > Provided by Enterprise Applications
- Banner
 - > No APIs
 - > No integration tools
- Each integration is a custom development
- Many are small - name and email address
- Some are complex or move data into Banner



IMPROVEMENTS

- Enterprise Applications staff specialize and work as a team
 - > Formerly, each staff member worked in isolation
 - > Each member had to be analyst, developer, and consultant
- Banner upgrades and patches installed timely
 - > Formerly, updates were delayed
- Banner upgrades planned around client department schedule
- Application projects planned and completed
 - > Formerly, plans were minimal and not prioritized
 - > Many projects only partially completed
- Integrations are better and tested
- Many additional applications implemented



CURRENT AND PLANNED PROJECTS

- Slate
- Axiom
- Robotic Process Automation (RPA)
- Online Forms
- Banner 9 Student Self Service
- WebFOCUS v. 9
- Curriculog
- Anaplan
- Interfolio
- AwardSpring
- Stepping Blocks
- TeamWorks
- EdVision
- Inceptia Financial Aid
- InfoEd
- Terra Dotta
- EdSights

BANNER ALTERNATIVES

- Board of Governors commissioned a FY23 study of alternatives
- Proposed solution:
 - > Migrate HR and business functions to cloud ERP
 - > Leave student functions in Banner
 - > Single cloud instance for all UNC campuses
 - > Requires replacing the internal Banner integrations
 - > Requires reconstructing many of the custom integrations
- Estimated \$164 million cost
 - > Twelve-year break-even period
- No action from BOG

DATA

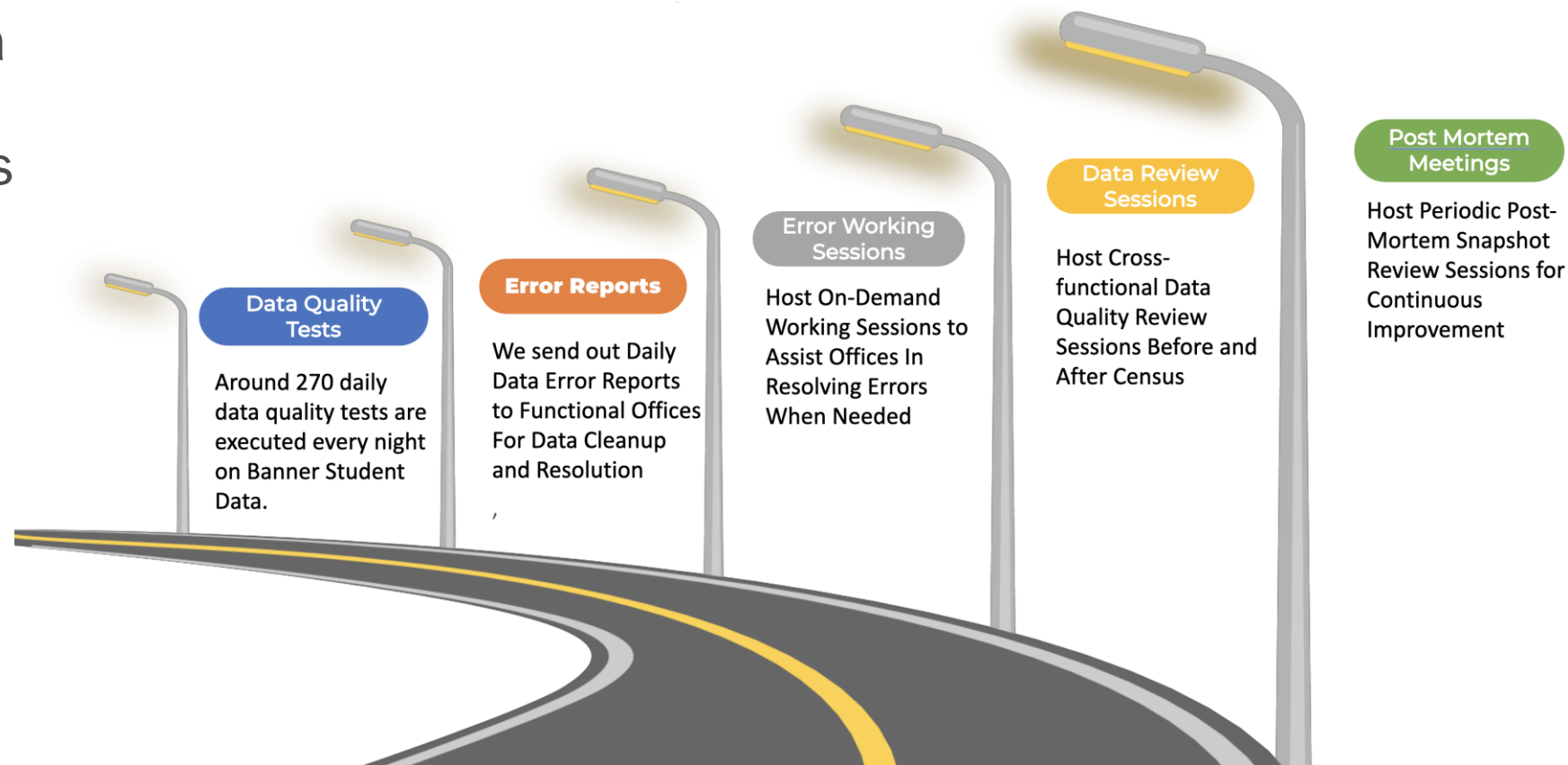
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BANNER DATA QUALITY ISSUES

- Original implementation funded by each campus
 - > Many treated implementation as a cost
 - > Minimal viable implementation
- Data not always migrated correctly
- Business processes not always well tested
- Ellucian (then Sungard Higher Education) business practices were a contributing factor
 - > Banner very configurable
 - > Lack of best practices
 - > Business model driven by consulting
- Many data issues developed over time

PROACTIVE DATA QUALITY FRAMEWORK

- Created Data Governance and Business Intelligence unit in 2019



AGGIE ANALYTICS DATA TEAM

- Cross-functional
- Collaboratively develop campus reports and document metadata
- Create a data/report certification process with multiple data steward sign-off
- Implement automated data quality
- Create institutional data dictionary

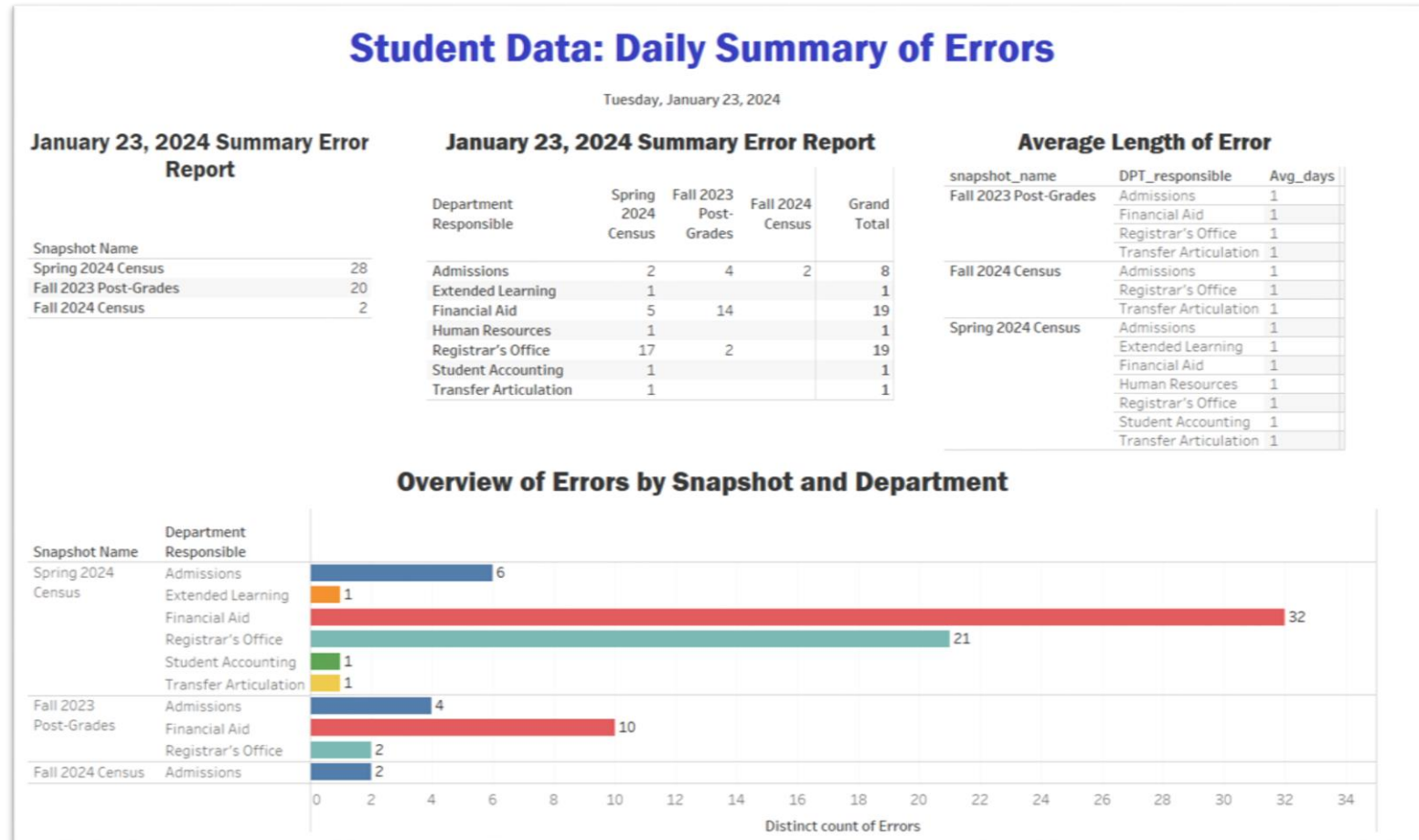
Members

- > Registrar's Office
- > Undergraduate Admissions
- > Graduate College
- > Financial Aid
- > Student Affairs
- > Human Resources
- > Finance
- > Student Success
- > Enrollment Management
- > Data Governance & Business Intelligence
- > Strategic Planning & Institutional Effectiveness
- > Center for Academic Excellence

BANNER DATA QUALITY IMPROVEMENTS

- Up to 270 automated data quality checks ran nightly
 - > Originally, there were no automated checks
- Data quality is managed at the university level with assigned responsibilities
 - > Originally, data quality fell to OSPIE due to external reporting
- Data quality framework established with proactive and reactive procedures
 - > Originally, data quality was reactive only
- Data issues are corrected in the system of record
 - > Originally, OSPIE corrected errors in data extracted from Banner
- Data for official reporting available next day
 - > Originally, there was a significant delay after census day for official data
- More accurate data available for decision making

BANNER DATA QUALITY DASHBOARD



ANALYTICS

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SYSTEM OFFICE DATA MARTS

- Student, HR, and Finance data marts
 - > Used for system level analysis and reporting
 - > Snapshots extracted (closed) from Banner periodically
- Student data mart closed on time 69 of 70 times in the past five years
 - > Originally, student data mart always closed late
- HR data mart closed on time 10 of 12 times in FY23 and 8 of 9 times in FY24 (to date)
- Finance data mart closed on time twice
 - > Launched two years ago

REPORTING

- Operational
 - > Used by business units for internal operations
 - > WebFOCUS 9
 - Upgrade to a supported version
 - Reduce the number of reports by half
- Business Intelligence
 - > More strategic in nature
 - > Identify opportunities and threats
 - > Improve procedures or introduce operational efficiencies
- Leverage the work of the Aggie Analytics Team to improve reporting

BUSINESS INTELLIGENCE REPORTING

— OOS Full Scholarship Students Analysis (OOS FS)

Problem: OOS FS students needed to be identified and captured in the SDM Census snapshot to ensure the institution receives the benefit on paying in-state tuition rates.

Collaborators: Enrollment Management, VPUE, Athletics, Office of the Registrar, Financial Aid

Outcome of Analysis:

01 Improved Business Process for Reporting All OOS Full Scholarship Students

Collaboratively designed a process that identifies the responsibilities and due dates for each office involved in this process.

02 Data Standards Established for Identifying the Population

Established institutional data standard for identifying OOS Full Athletic and Merit scholarship students.

03 Analysis Completed on OOS Enrollment Cap

Analysis of the Non-Resident Undergraduate Enrollment Policy indicated a possible exemption of this population from the OOS enrolment cap. UNC-SO Data and Analytics team confirmed this was an allowable exception in their calculations.

04 Improved Business Process for Enrolling OOS First-time Full-Time Freshmen

Collaboratively designed a process that identifies the responsibilities and time line for identifying OOS FS First-time Full-time Freshmen to ensure we fully leverage our OOS

\$17,400	x	60	=	\$1,044,000 *
OOS Tuition		AVG # of OOS FS Freshman		Potential Additional Tuition

BUSINESS INTELLIGENCE REPORTING

Collaborators:
Enrollment
Management,
HelioCampus



NCAT Filters

- Reporting Year
(All)
- New Student Type
(All)
- Military Flag
(All)
- Class Level
Admitted, Did Not Enroll
- NCAT Student Type
(All)
- Pell Recipient Flag
(All)
- Residency
(All)
- Rural Flag
Undetermined
- Race/Ethnicity
(All)
- Full-Time/Part-Time Status
N/A
- Gender
(All)
- NCAT Graduation Status
Did Not Enroll
- Degree Type
Bachelor's

Subsequent Enrollment/Declined Admissions Trends

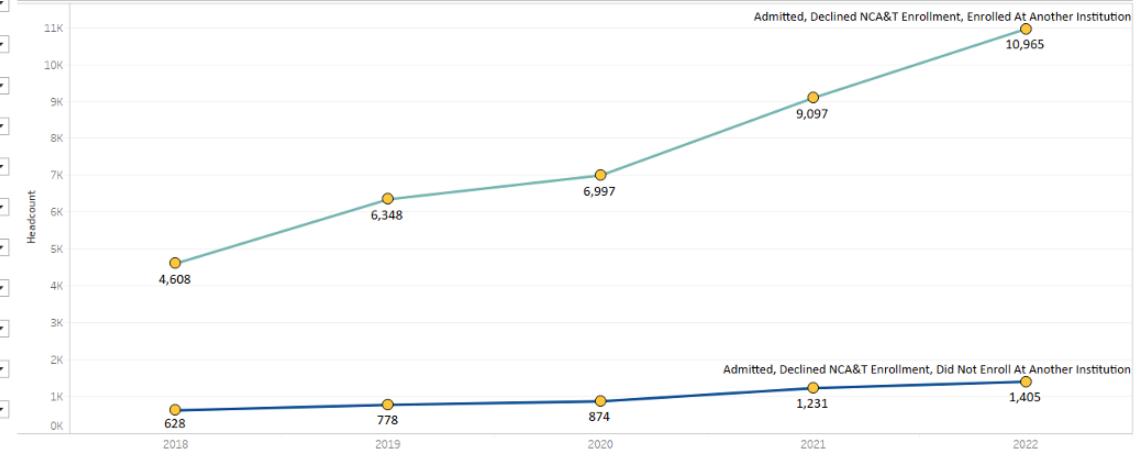
[Student Clearinghouse Filters](#)

Competitor School: (All) | Competitor School Type: (All) | Competitor School Sector: (All) | Competitor School Level: (All)

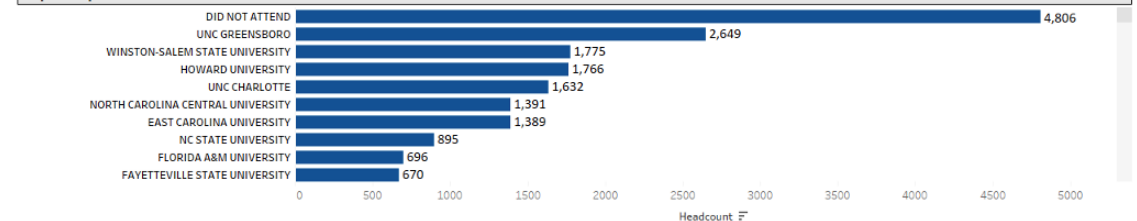
Select a data point on a student type line to see more declined admissions and financial aid details in the 4th tab. Unselect data point to clear values and reset view in 4th tab.

- Admitted, Declined NCAT Enrollment, Enrolled At Another Institution
- Admitted, Declined NCAT Enrollment, Did Not Enroll At Another Institution

Subsequent Enrollment/Declined Admissions Counts by Reporting Year



Top Competitor Schools



BUSINESS INTELLIGENCE REPORTING

— Improving Student Retention

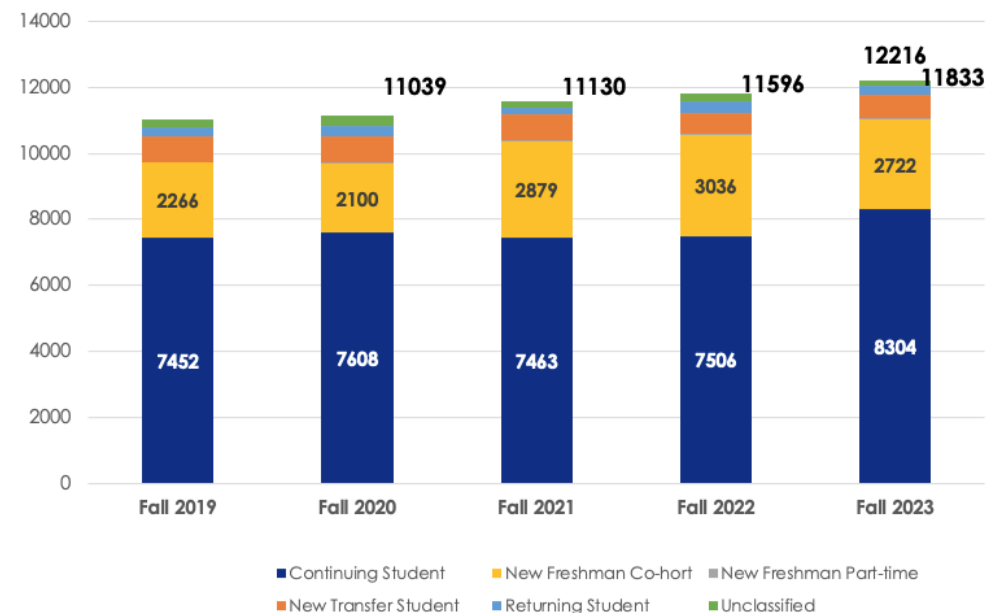
Collaborators: Student Success, Center for Academic Excellence, Associate Deans

01 IMPLEMENTED THE RECRUIT BACK CAMPAIGN

Collaboratively designed a process that identifies the responsibilities and due dates for each office involved in this process.

02 ROLL-OUT PREDICTIVE ANALYTICS TOOL TO ADVISORS


Collaboratively designed a process that identifies the responsibilities and due dates for each office involved in this process.



BUSINESS INTELLIGENCE REPORTING

Seat Projections Logic for Seat Projections

SEAT PROJECTIONS FALL 2023 | AT A GLANCE



Detailed Projections By Seat Capacity & Average Section Size

Subject Course Number	Instructional Format	Section Title	Total Seat Capacity	Number of Sections	Avg. Section Size	Projected Seats Needed	Add. Seats Needed	Add. Sections Needed	Actual Enrollment	Rem. Avail Seat
ABM 130	LECTURE	Intro to Agribusi and Food Ind	30	1	30	23	-7	0	19	11
ABM 235	LECTURE	The Eco of World Food and Re	25	1	25	7	-18	0	5	20
ABM 240	LECTURE	Information Tech in Agribusi	35	1	35	19	0	0	35	0
ABM 250	LECTURE	Dollar Enterprise	60	1	60	4	55	1	5	55
ABM 300	LECTURE	Rural Commu and Economic Devel	30	1	30	23	-7	0	22	8
ABM 406	LECTURE	Quantitative Anal in Agribusi	20	1	20	3	11	1	9	11
ABM 430	LECTURE	Agribusiness Sales and Adverti	25	1	25	1	-24	0	0	25
ABM 432	LECTURE	Accounting for Agribusiness	25	1	25	6	13	1	12	13
ABM 434	LECTURE	Food and Agribusi Marketing	25	1	25	20	-5	0	19	6
ABM 436	LECTURE	Agricul Prices and Forecasting	20	1	20	12	-8	0	8	12

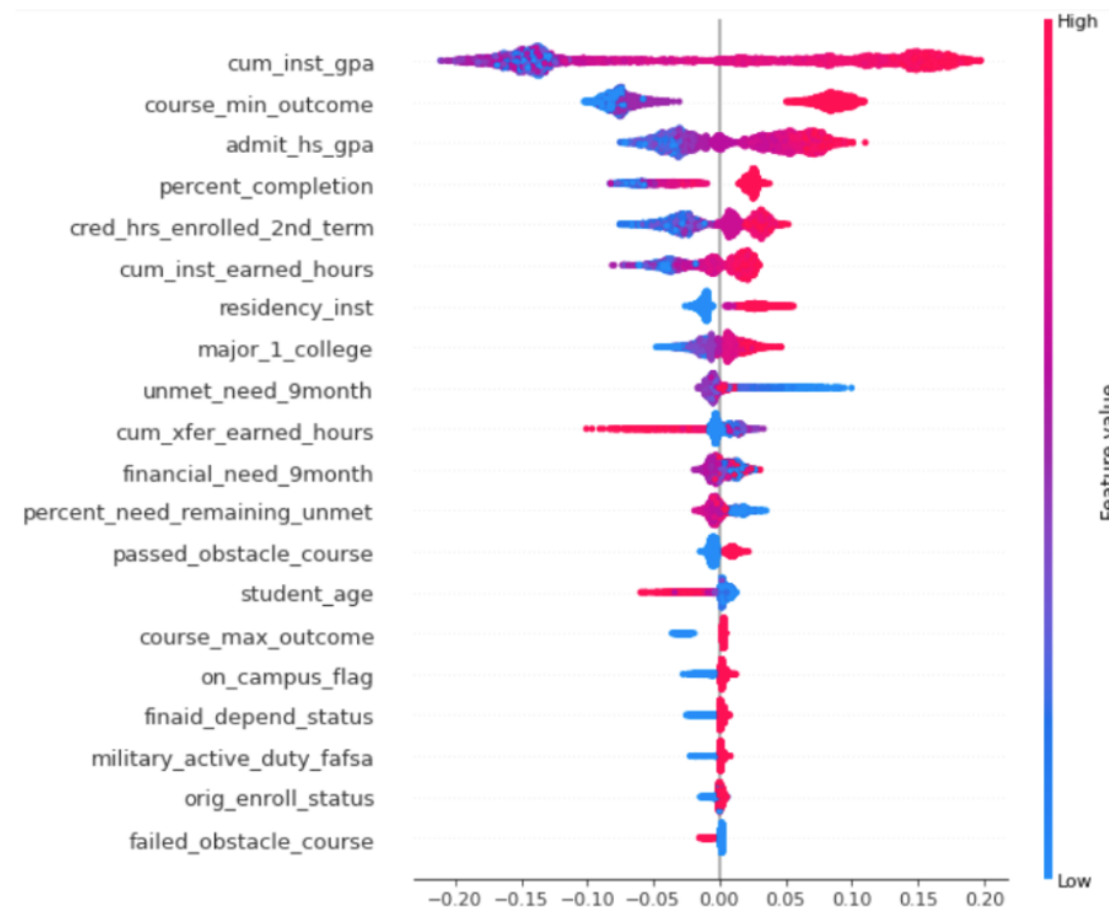
PREDICTIVE MODELS

- Student Persistence and Four-Year Graduation Rate
- Implemented in FY21
- Added data to improve the models over the years
- Identified obstacle course and led to curricula improvements
- Incorporated into advising process
- Also dependent on the work of the Aggie Analytics Team

PREDICTIVE MODELS

TOP PREDICTORS

- Cumulative Institutional GPA
- Minimum grade from a 1st term Course
- HS GPA
- Percent of Credits Completed
- Credits Enrolled in 2nd Term
- Cumulative Institutional Credits Earned
- Residency (Institutional)
- College
- Unmet Financial Need Amount
- Transfer Credits Earned
- Initial Financial Need Amount
- Percent Need Remaining Unmet
- Outcome of Obstacle Course
- Age
- On-Campus Flag
- Financial Aid Dependency Status
- Active-Duty Military Status
- Original Enrollment Type



PREDICTIVE MODELS

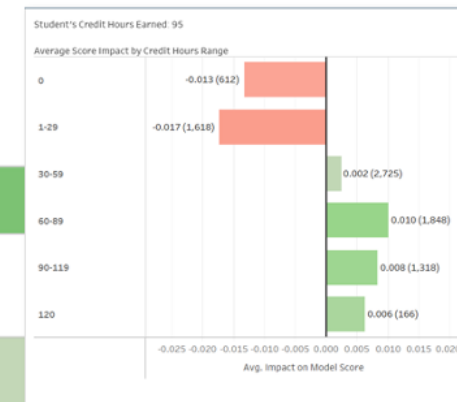
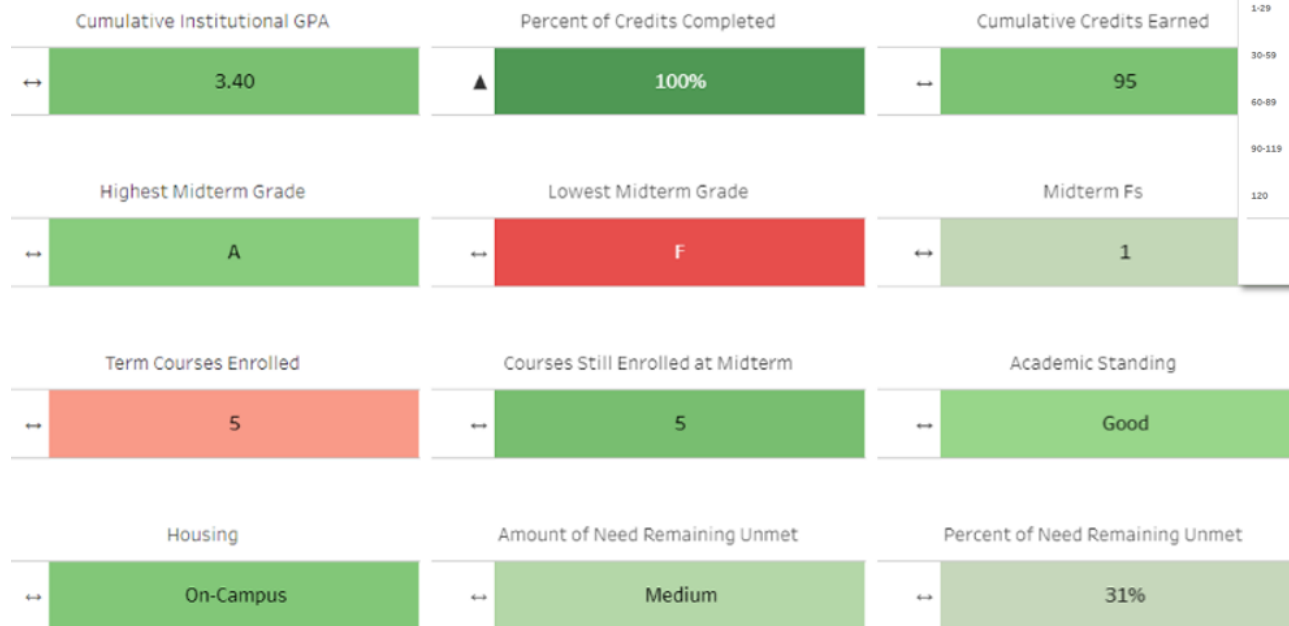
Continuing Senior Mechanical Engineering Major
Previously Enrolled in 6 Fall/Spring Terms

Fall 2022 Next Term Persistence Prediction:

2 - High Persistence Likelihood

Jump to Student ID (exact)

950



Questions?