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Helping Student Success and Student Retention



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Abstract

This presentation shares how to aggregate multiple information sources to create a holistic picture of first-year retention and student success. We illustrate four stages of this process which include: Aggregation, Inquiry, Results, and Action. Two tools for generating actionable information are shared. The Dashboard of Student Retention includes interactive calculations of retention rates and attrition rates for the last six years. The Dashboard of Identified At-risk Students is a tool that provides faculty/staff a searchable list of students who might need some help based on students' demographic information and scores from multiple projects that aimed to improve first-year experiences.

The Problem

While the idea of predicting student successes and student retention is not new, our approach is slightly different. Retention efforts are often hampered by the multitude of studies, analysis and information provided to our colleagues working with students. As a result, they become overwhelmed and are not sure what the best use of their scarce resources is. Improving the first-year experience has been a focus of retention efforts at our university and there are multiple projects to accomplish this goal.

- In 2014, we launched the Student Strength Inventory (SSI) for first-year students before they came to campus to generate an index of retention probability and measured six non-cognitive factors. Those factors helped us organize conversations based on student behaviors that are not measured by cognitive measurement.
- In 2015, we started an Early Alert System which encouraged faculty to rank students with three different colors (green, yellow, and red) according to students' performance in courses.
- In 2016, we implemented Student Success Study, cooperating with the Deloitte Consulting Company, to predict our first-year students' success.
- In 2016, we examined the impact of first-year students' connection with their peers on first-years' success.
- In 2018, we designed a brief first-year transition survey to collect first-year transition information.

When faced with numerous sources of rich and complicated first-year data from multiple projects, we sometimes felt that it was really challenging to combine all initiatives in a meaningful way. Aggregating data from multiple sources and projects to track the same cohorts of students has become very important in supporting student success.

Our Solution

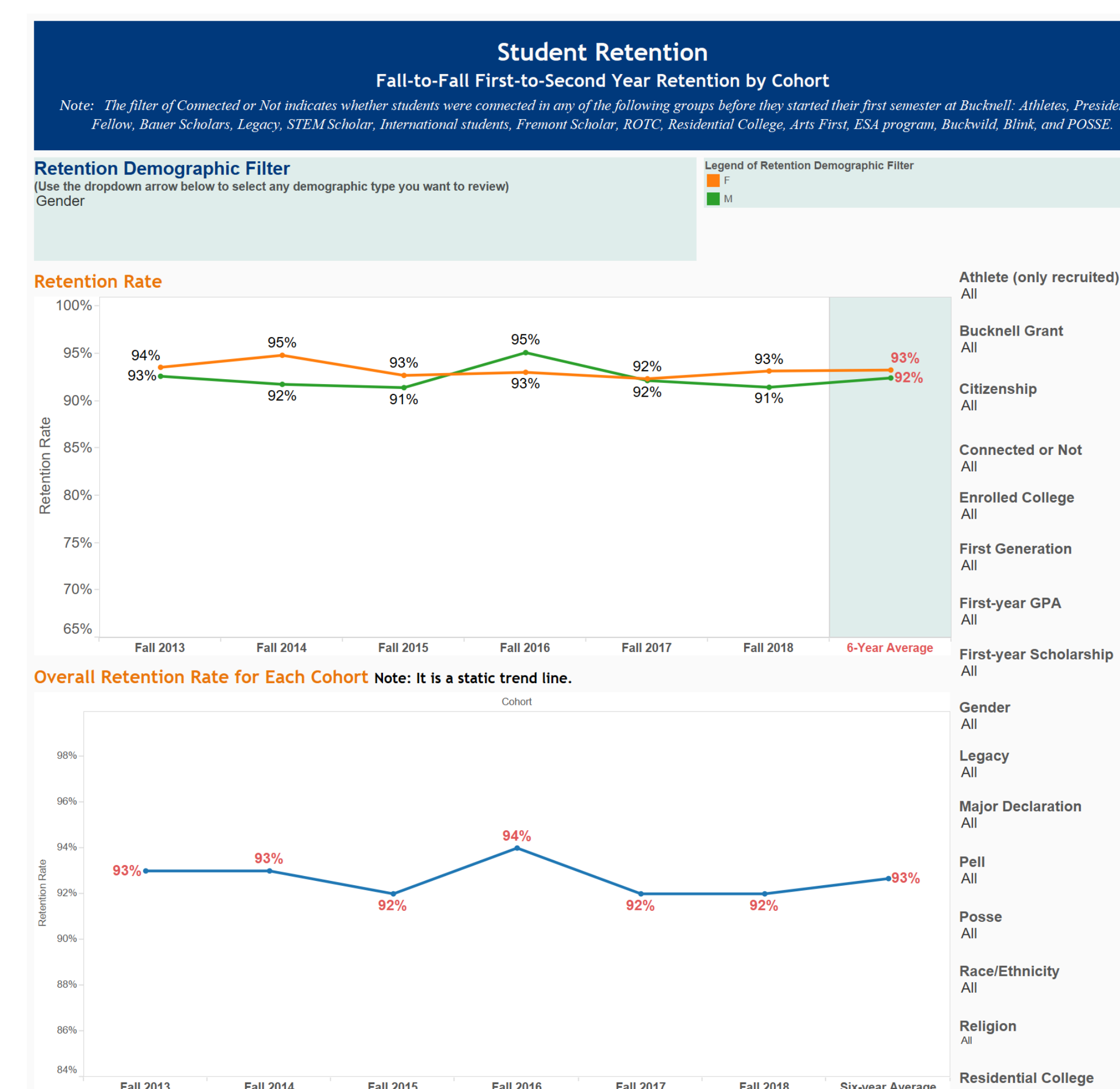
To solve the challenge of having too much information that confuses our colleagues who are in charge of improving student retention and success, we have combined sources mentioned above into two applications: Student Retention Dashboard and Identified At-risk Students Dashboard.

The **Student Retention** tool includes interactive calculation of retention rates and attrition rates for the last six years, which could be further filtered by a variety of student characteristics, such as gender, race/ethnicity, financial aid, college, major, legacy, first-generation, Pell grant recipients, and learning community. Colleagues without advanced or any knowledge of Excel, SPSS or and ERP systems, can quickly analyze and compare different student populations. The tool also enables our colleagues to find the reasons of student attritions and where our transferred students attend other institutions.

The **At-Risk Students** dashboard was developed based on four predictive success models after combining all initiatives mentioned above, enables colleagues to identify "At-risk" students and generates specific lists by colleges or academic divisions. It helps identify not only students who are experiencing academic or social difficulties, but also high achieving students who look for additional opportunities to get engaged.

All three colleges, Student Affairs, and various offices are currently using the lists generated by the tool to design or increase the awareness of differences that would support student success.

Retention Dashboard



First-Year Attrition

Note: The filter of Connected or Not indicates whether students were connected in any of the following groups before they started their first semester at Bucknell: Athletes, Presidential Fellow, Bauer Scholars, Legacy, STEM Scholar, International students, Fremont Scholar, ROTC, Residential College, Arts First, ESA program, Buckwald, Bink, and POSSE.

Demographic Selection and Other Filters: Gender

Gender	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Overall	Demographic Selection and Other Filters
F	31	25	35	33	38	35	197	F 49%
M	33	37	39	23	37	39	208	M 51%
Overall	64	62	74	56	75	74	405	Overall 100%

Gender	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Overall	Demographic Selection and Other Filters
F	484	487	482	476	499	515	2,943	F 52%
M	449	451	456	474	474	458	2,762	M 48%

At-risk Students Dashboard

Identified At-Risk Students-Cohort 2019

The dashboard is a tool that provides faculty/staff a searchable list of students who might need some help based on students' demographic information, the SSI social comfort scores, the Deloitte predicted success scores, and the connectedness status...

SpringSemesterRetention_group: (All)

SpringSemesterSuccessModel_group: (All)

Connected or Not: (All)

Number of Students Match Your Criteria: 964

Build	Gender	Enrolled College	JustEnrolledRetention_group	SpringSemesterSuccess	Legacy	Gender	Race/Ethnicity	Athlete	Pell	Posse	Citizenship	Bucknell Grant	First-year Scholar..
	M	College of Arts & Sciences	90%-94.99%	1									
	F	College of Arts & Sciences	95%-100%	10									
	M	College of Management	90%-94.99%	10									
	F	College of Arts & Sciences	90%-94.99%	7									
	F	College of Engineering	95%-100%	7									
	M	College of Arts & Sciences	95%-100%	10									
	F	College of Management	85%-89.99%	5									
	M	College of Management	80%-84.99%	1									
	M	College of Management	90%-94.99%	2									
	M	College of Arts & Sciences	90%-94.99%	3									
	M	College of Engineering	90%-94.99%	6									
	M	College of Management	90%-94.99%	6									
	M	College of Engineering	95%-100%	10									
	M	College of Arts & Sciences	85%-89.99%	6									
	M	College of Arts & Sciences	80%-84.99%	10									
	M	College of Engineering	85%-89.99%	10									
	M	College of Management	90%-94.99%	10									
	F	College of Arts & Sciences	90%-94.99%	10									
	F	College of Management	90%-94.99%	9									
	F	College of Engineering	95%-100%	10									
	F	College of Arts & Sciences	90%-94.99%	10									
	F	College of Arts & Sciences	85%-89.99%	10									
	F	College of Arts & Sciences	90%-94.99%	1									
	M	College of Arts & Sciences	80%-84.99%	10									
	F	College of Arts & Sciences	90%-94.99%	4									

Conclusion

Since we introduced these tools, colleagues supporting student success have been able to create various intervention programs and initiatives. Our student retention, persistence and success efforts are ever evolving. In fall 2020, we are introducing a centralized student success system. The challenge ahead of us would be to integrate the tools we have developed with this new system.

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