

# Leveraging Survey Data and Predictive Analytics to Support First-Year Students

**38<sup>th</sup> Annual Conference on The First-Year Experience**

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# Agenda

- Student Expectations
- Predictive Analytics
- Student Persistence
- BCSSE
- USF
- BCSSE and USF
- Future Ideas

# Outcomes

By attending this presentation, attendees will:

- Understand the utility of assessing first-year student expectations prior to matriculation
- Identify how they can use survey data in predictive analytics to identify and support at-risk first-year students
- Recognize how they can use individual data points to identify specific student needs to provide individualized assistance.

# Student Expectations Matter!

- “Expectations affect students’ motivation, engagement, and investment of effort in learning” (Konings et al., 2008, p. 536).
- Prior research (e.g., Helland et al, 2002) and student development theories (e.g., Tinto, 1993) all point to the importance of collecting expectations data to better understand student departure.

# Predictive Analytics

- Early identification of at-risk students
- Allows for early intervention and support

# Why don't students persist?

- Unclear or unreasonable goals
- Social isolation
- Insufficient academic preparation
- Stress
- Academic disengagement or boredom
- Financial concerns
- Challenges of new freedom
- Distraction of conflicting commitments
- Unmet expectations or transition shock

# BCSSE Instrument

- Student pre-college academic and co-curricular experiences, as well as their academic expectations
- Administered to beginning first-year students during student orientation, Welcome Week, or early in the fall term (w/optional winter administration)
- Advising and institutional reports, along with a complete data file

**Beginning College Survey of Student Engagement**

We are interested in your high school experiences and how often you expect to participate in certain activities during your first year of college. The information that you provide will help your institution improve teaching, learning and the quality of the student experience. Thanks for your help. Write or mark your answers in the boxes. Examples:  or .

Please print your student ID number in the box below. Do not print your Social Security number.

Please write in the 5-digit ZIP code of your home during your last year of high school.

**HIGH SCHOOL EXPERIENCES**

**1** Please write in the year you graduated from high school (for example, 2018):

**2** From which type of high school did you graduate? (Select only one.)

**3** What were most of your high school grades? (Select only one.)

**4** To date, in which of the following math classes have you earned a grade of "C" or better? (Select all that apply.)

**5** If you completed the SAT and/or ACT, enter your scores below (as best you remember):

Are these SAT scores from March 2016 or later?

**6** During high school, how many of the following types of classes did you complete?

**7** During your last year of high school, about how many papers, reports, or other writing tasks of the following lengths did you complete?

**8** During your last year of high school, about how many hours did you spend in a typical 7-day week doing the following?

**9** During your last year of high school, of the time you spent preparing for class in a typical 7-day week, about how much was on assigned reading?

# About USF - Tampa

- Preeminent State Research University (FL)
- Carnegie Classification – Doctoral University: “Highest Research Activity” & “Community Engaged”
- 31,389 Fall 2018 Undergraduate Headcount
  - New Student Headcount (Summer and Fall 2018)
    - ~4,400 new first-year students
    - ~4,100 new transfer students



# Florida Board of Governors Accountability on Student Success

## Performance Based Funding:

2 of 10 metrics focused on retention & graduation

## Preeminence:

2 of 12 metrics focused on retention & graduation

FINAL-USF SYSTEM BOT APPROVED

### PERFORMANCE BASED FUNDING METRICS

#### 1. Percent of Bachelor's Graduates Enrolled or Employed (\$25,000+)

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
ACTUAL	.	65.3	67.2	69.6	70.0	.	.	.	.
APPROVED GOALS	.	.	.	66.8	70.5	73.0	75.0	76.0	.
PROPOSED GOALS	.	.	.	.	70.5	71.5	72.5	73.0	.

#### 2. Median Wages of Bachelor's Graduates Employed Full-time

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
ACTUAL	.	35,200	36,700	38,000	37,300	.	.	.	.
APPROVED GOALS	.	.	.	36,300	38,600	39,100	39,600	40,400	.
PROPOSED GOALS	.	.	.	.	39,100	39,600	40,100	40,700	.

#### 3. Average Cost to the Student [Net Tuition & Fees per 120 Credit Hours for Resident Undergraduates]

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
ACTUAL	.	14,490	13,540	13,280	12,960	.	.	.	.
APPROVED GOALS	.	.	.	.	13,000	12,900	12,800	12,700	.
PROPOSED GOALS	.	.	.	.	12,900	12,800	12,700	12,700	.

#### 4. FTIC Four-Year Graduation Rate

	2009-13	2010-14	2011-15	2012-16	2013-17	2014-18	2015-19	2016-20	2017-21
ACTUAL Graduated Within USF System	41.9	43.2	48.8	52.0	57.3	.	.	.	.
APPROVED GOALS	.	.	.	50.4	53.0	57.0	59.0	63.0	.
PROPOSED GOALS	.	.	.	.	57.6	59.2	61.8	64.1	.

#### 5. Academic Progress Rate [Second Year Retention Rate with At Least a 2.0 GPA]

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
ACTUAL Retained Within USF System	84.5	85.3	85.1	86.1	85.9	.	.	.	.
APPROVED GOALS	.	.	.	85.6	87.5	89.0	89.5	90.0	.
PROPOSED GOALS	.	.	.	.	87.4	89.0	89.6	90.5	.

FINAL-USF SYSTEM BOT APPROVED

### PREEMINENT RESEARCH UNIVERSITY FUNDING METRICS (for Tampa Only)

#### 1a. Average GPA

	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
ACTUAL	4.0	4.0	4.1	4.1	4.1	.	.	.	.
APPROVED GOALS	.	.	.	4.0	4.1	4.1	4.1	4.1	.
PROPOSED GOALS	.	.	.	.	4.1	4.1	4.1	4.1	.

#### 1b. Average SAT Score

	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
ACTUAL	1200	1197	1223	1226	1280	.	.	.	.
APPROVED GOALS	.	.	.	1220	1280	1282	1285	1290	.
PROPOSED GOALS	.	.	.	.	1282	1285	1290	1290	.

Note\*: SAT scores reflect rescaling to new SAT standards (approved goals were based upon old standard).

#### 2. Public University National Ranking [Top50 rankings based on BOC's official list of publications]

	2014	2015	2016	2017	2018	2019	2020	2021	2022
ACTUAL	1	3	4	4	4	.	.	.	.
APPROVED GOALS	.	.	.	3	5	5	5	5	.
PROPOSED GOALS	.	.	.	.	5	5	5	5	.

#### 3. Freshman Retention Rate [Full-time students as reported to IPEDS]

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
ACTUAL	89	89	88	90	90	.	.	.	.
APPROVED GOALS	.	.	.	90	91	92	93	93	.
PROPOSED GOALS	.	.	.	.	91	91	91	92	92

#### 4. Six-year Graduation Rate [Full-time students as reported to IPEDS]

	2007-13	2008-14	2009-15	2010-16	2011-17	2012-18	2013-19	2014-20	2015-21
ACTUAL	63	67	68	67	71	.	.	.	.
APPROVED GOALS	.	.	.	66	71	73	75	77	.
PROPOSED GOALS	.	.	.	.	73	75	77	78	.



# Office of Academic Advocacy

- Formed in 2013
- Located in Undergraduate Studies
- Promotes undergraduate student persistence, progression, and completion in support of key strategic university goals and measures by removing barriers to academic success and supporting a timely progression to graduation
  - Maintain or improve 90% first year retention rate
  - Achieve 4-year 60% and 6-year 70% graduation rates

# BCSSE and USF

- USF started administering the survey in 2014
- Paper version administered at first-year orientations
- Optional for students to participate – 97.63% return rate

# FYR Model

Started as a Research and Intervention Project by a faculty member and Student Affairs (Miller & Herreid, 2008)

- Pre-matriculation model to predict first-year retention before the beginning of the fall term.
- Identified ~10% of new FTIC at risk for drop-out by the second fall term of attendance.
- Given FYR attribute in BANNER (SIS)
- BCSSE incorporated into model in 2016
- Early intervention through
  - Academic Foundations course (first-year seminar)
  - Residence Halls for on-campus students
  - Academic Advising (mandatory for first-year students)
  - Adding NSC for peer coaching (commuters/non-Academic Foundations)

# Significant Predictors - SIS

- HS GPA
- Race/Ethnic Group
- Age at start of term
- Scholarship recipient
- Honors
- On-campus Residency
- First-Year Seminar Enrollment
- Athletes
- Time since Orientation

# Significant Predictors - BCSSE

## High School Experiences

- Involvement in performing or visual arts
- Hours working

## College Expectations

- Prepared to think critically and analytically
- Intention to graduate
- Work
- Close Friends attending
- Expected Discussions with Diverse Others
- Expected Academic Difficulty
- Expected Engagement in Collaborative Learning

# Campus Partner Initiatives

## New Student Connections

- Question 18e – During the coming school year, how difficult do you expect the following to be? Making new friends:
  - Answers: 5 or 6 – Very Difficult
- AND
- Question 27 – How many of your close friends will attend this institution during the coming year?
  - Answer: None (n=269)
- Question 24 – Do you expect to graduate from this institution? (n=289)
  - Answers: No (n=29) or Uncertain (n=260)
- Question 13b – During the coming school year, about how many hours do you expect to spend in a typical 7-day week doing the following? Working for pay on- or off-campus: (n=740)
  - Answers: 21-25 (n=392), 26-30 (n=178), or More than 30 (n=170)

# Campus Partner Initiatives

## Bull2Bull Financial Education

- Question 18c – During the coming school year, how difficult do you expect the following to be? Paying college or university expenses: 5 and 6 – Very Difficult (n=1376)
  - Include Question 22 information for these students – Which of the following sources are you using to pay for your education expenses?
  - Include Question 13b for these students - During the coming school year, about how many hours do you expect to spend in a typical 7-day week doing the following?  
Working for pay on- or off-campus



# Campus Partner Initiatives

## Success and Wellness Coaching

- Question 17e – During the coming school year, how certain are you that you will do the following? Finish something you have started when you encounter challenges: 1 – Not at all Certain or 2 (n=70)
- Question 18b – During the coming school year, how difficult do you expect the following to be? Managing your Time: 6 – Very Difficult (n=628)

# Campus Partner Initiatives

## Academic Advising

- Customized BCSSE Advising Tool
- Based on feedback from the CAA Student Advisory Subcommittee
- Individualized report for each student to assist advisors in understanding student expectations and how it may affect their first year experience
- Areas of focus on the advising report:
  - Academic Success Skills
  - Communication and Collaboration
  - Academic Challenge and Support
  - Situational and Financial

<i>Academic Success Skills</i>	<i>Communication and Collaboration</i>	<i>Academic Challenge and Support</i>	<i>Situational and Financial</i>
Students receive different educational experiences and are prepared at different levels for higher education. Some skills required to succeed at the university may need to be introduced for a student to improve academically.	Degree to which student expresses difficulties with communicating/collaborating with others and preparedness to do so.	Student may have overwhelming or underwhelming expectations of the university experience. Students can feel overly stressed or unsatisfied depending on expectations and the challenge/support they are experiencing.	Student may express difficulties in how to pay for college or have outside factors influencing their success. Student may have trouble planning a direction, prioritizing, or seeing a "big picture" to graduation.
<b>Resources/Referrals:</b> Academic Success Center, Writing Studio, SMART lab, Library, Veteran's Services, Student Disability Services	<b>Resources/Referrals:</b> New Student Connections, Career Services (Interviewing), Writing Studio, Counseling Center, CLCE, Multicultural Affairs, CSI	<b>Resources/Referrals:</b> Academic Success Center, SMART lab, Writing Studio, Library, Student Disability Services, Counseling Center	<b>Resources/Referrals:</b> University Scholarships and Financial Aid Services, OAA, Career Center, Ombuds, Counseling Center, SOS
<b>Quantitative Reasoning Scale</b> (Reached conclusion based on numerical information; Used numerical information to examine real-world problem, etc.) (0=Very Low to 60=Very High) <span style="float:right">0</span>	<b>Student-Faculty Interaction Scale</b> (Discuss career plans and academic performance, etc.) (0=Very Low to 60=Very High) <span style="float:right">15</span>	<i>How difficult do you expect the following to be?</i> (1=Not difficult to 6=Difficult) Learning course material <span style="float:right">2</span> Getting help with school work <span style="float:right">2</span>	<i>During your last year of high school, how many hours did you spend in a typical 7-day week doing each of the following?</i> Working for pay <span style="float:right">More than 30</span>
<b>Learning Strategies Scale</b> (Identified key information from readings; Reviewed notes after class, etc.) (0=Very Low to 60=Very High) <span style="float:right">40</span>	<b>Peer Collaboration Scale</b> (Work with other students on course projects; Prepare for exams by discussing material with other students, etc.) (0=Very Low to 60=Very High) <span style="float:right">30</span>	<i>During the coming school year, how certain are you that you will do the following?</i> (1=Not at all certain to 6=Very certain) Study when there are other interesting things to do <span style="float:right">2</span> Finish something you have started <span style="float:right">4</span> Stay positive, even when you do poorly on a test <span style="float:right">3</span> During your last year of high school, to what extent did your courses challenge you to do your best work? (1=Not at all to 7=Very much) <span style="float:right">4</span> During your last year of high school, of the time you spent preparing for class in a typical 7-day week, about how much was on assigned reading? <span style="float:right">Some</span> During the coming school year, of the time you expect to spend preparing for class in a typical 7-day week, how many hours will be on assigned reading? <span style="float:right">Some</span>	<i>During the coming school year, how many hours you will spend in a typical 7-day week doing each of the following?</i> Working for pay on- and off-campus <span style="float:right">0</span> <i>How difficult do you expect the following to be?</i> (1=Not difficult to 6=Difficult) Paying college expenses <span style="float:right">Not at all difficult 1</span> <i>How important is it to you that your institution provides each of the following?</i> (1=Not important to 6=Very important) Help managing your non-academic responsibilities <span style="float:right">4</span> This institution was your: <span style="float:right">Third choice or lower</span> Do you expect to graduate from this institution? <span style="float:right">Uncertain</span>
<i>During your last year of high school, how many hours did you spend in a typical 7-day week doing each of the following?</i> Preparing for class <span style="float:right">6-10</span>	<i>How difficult do you expect the following to be?</i> (1=Not difficult to 6=Difficult) Making new friends <span style="float:right">3</span> Interacting with faculty <span style="float:right">3</span> <i>During the coming school year, how certain are you that you will do the following?</i> (1=Not at all certain to 6=Very certain) Ask instructors for help when you struggle <span style="float:right">4</span> <i>How prepared are you to do the following in your academic work at this institution?</i> (1=Not prepared to 6=Very prepared) Write clearly and effectively <span style="float:right">Very prepared 6</span> Speak clearly and effectively <span style="float:right">Very prepared 6</span> Work effectively with others <span style="float:right">5</span>	<i>During your last year of high school, about how often do you expect to seek help with coursework from the following sources?</i> (1=Never; 2=Sometimes; 3=Often; 4=Very Often) Faculty Members <span style="float:right">Sometimes</span> Academic advisors <span style="float:right">Often</span> Learning Support Services (tutoring, writing center, success coaching, etc.) <span style="float:right">Often</span> Friends or other students <span style="float:right">Often</span> Family members <span style="float:right">Sometimes</span> Other persons or offices <span style="float:right">Sometimes</span>	
<i>How difficult do you expect the following to be?</i> (1=Not difficult to 6=Difficult) Managing your time <span style="float:right">2</span>	<i>During the coming school year, how certain are you that you will do the following?</i> (1=Not at all certain to 6=Very certain) Find additional information for course assignments when you don't understand the material <span style="float:right">4</span> <i>How prepared are you to do the following in your academic work at this institution?</i> (1=Not prepared to 6=Very prepared) Think critically and analytically <span style="float:right">Very prepared 6</span> Analyze numerical and statistical information <span style="float:right">Very prepared 6</span> Use computing and information technology <span style="float:right">Very prepared 6</span> Learn effectively on your own <span style="float:right">Very prepared 6</span> <i>How important is it to you that your institution provides each of the following?</i> (1=Not important to 6=Very important) Learning support services <span style="float:right">Very important 6</span>		
	<i>During your last year of high school, how many hours did you spend in a typical 7-day week doing each of the following?</i> Participating in co-curricular activities <span style="float:right">6-10</span>		
	<i>During the coming school year, how many hours you will spend in a typical 7-day week doing each of the following?</i> Participating in co-curricular activities <span style="float:right">11-15</span> Relaxing or socializing <span style="float:right">6-10</span>		

# Campus Partner Initiatives

## Housing and Residential Education

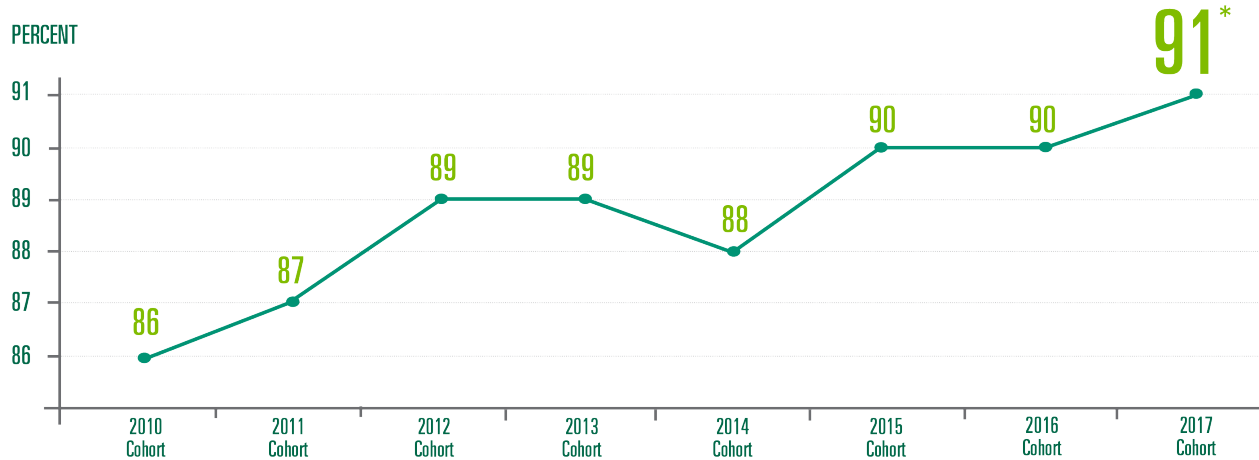
- Customized report based on their interests
- Intentional conversations
- Residential Curriculum

High School Experiences	Expected First Year Experiences
<i>What were most of your high school grades?</i> A	<i>During the coming school year, about how often do you expect to have discussions with people from the following groups?</i>
<i>During your last year of high school, how many hours did you spend in a typical 7-day week doing each of the following?</i>	People of a race of ethnicity other than your own Very often
Preparing for class Sometimes	People from an economic background other than your own Often
<i>During your last year of high school, about how often did you do the following?</i>	People with religious beliefs other than your own Very often
Included diverse perspectives in course discussions or assignments Often	People with political views other than your own Sometimes
Examined the strengths and weaknesses of your own views on a topic or issue Sometimes	<i>How difficult do you expect the following to be? (1=Not difficult to 6=Difficult)</i>
Tried to better understand someone else's views by imagining how an issue looks from their perspective Often	Learning course material 3
<i>During your high school years, how involved were you in the following activities at your school of elsewhere?</i>	Managing your time 5
Performing or visual arts programs Not at all	Paying college expenses 4
Athletic teams Not at all	Getting help with school work 5
Student government Not at all	Making new friends Very difficult 6
Publications Not at all	Interacting with faculty 3
Academic clubs or honor societies Some	<i>During the coming school year, about how often do you expect to seek help with coursework from the following sources?(1=Never; 2=Sometimes; 3=Often; 4=Very Often)</i>
Vocational clubs Not at all	Faculty Members Sometimes
Religious youth groups Not at all	Learning Support Services (tutoring, writing center, coaching) Never
Community services or volunteer work Quite a bit	<i>How important is it to you that your institution provides each of the following?(1=Not important to 6=Very important)</i>
<b>Expected First Year Experiences</b>	Support to help students succeed academically 5
<i>During the coming school year, how many hours will you spend in a typical 7-day week doing each of the following?</i>	Opportunities to interact with students from different background Very important 6
Preparing for class 16-20	Help managing your non-academic responsibilities 5
<i>During the coming school year, about how often do you expect to do the following?</i>	Opportunities to be involved socially 5
Work with other students on course projects or assignments Often	Opportunities to attend campus activities and events 3
Talk about career plans with a faculty member Sometimes	Learning support services 3
Work with a faculty member on activities other than coursework Sometimes	<i>Which of the following sources are you using to pay for your education expenses?</i>
Discuss your academic performance with a faculty member Sometimes	Support from parents or relatives Using
	Loans Not sure
	Grants or scholarships Using
	Employment on- or off-campus Not sure
	Personal savings or other sources Using

The Beginning College Survey of Student Engagement Student Advising Report is an individualized report for students and is designed to help higher education personnel understand how student expectations about college activities and learning might affect their actual first-year experiences.

# First-Year Persistence at USF

## FIRST-YEAR RETENTION RATE



Source IPEDS

\* Data reported follows IPEDS methodology but are based on internal preliminary data



# Future Ideas

- Partnering with other campus entities
- Inclusion in a dashboard with other data points to streamline advocacy work
- Transfer version of the BCSSE
- Assessment of Initiatives

# Questions?

Contact emails:

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Websites:

<http://usf.edu/oaa> &  
<http://bcsse.indiana.edu/>



Please remember to submit your  
evaluation on Guidebook!

<https://guidebook.com/g/fye19/>

