



PARSS

PREDICTIVE ANALYTICS AND RESEARCH FOR STUDENT SUCCESS

Modified January 2023





What is PARSS?

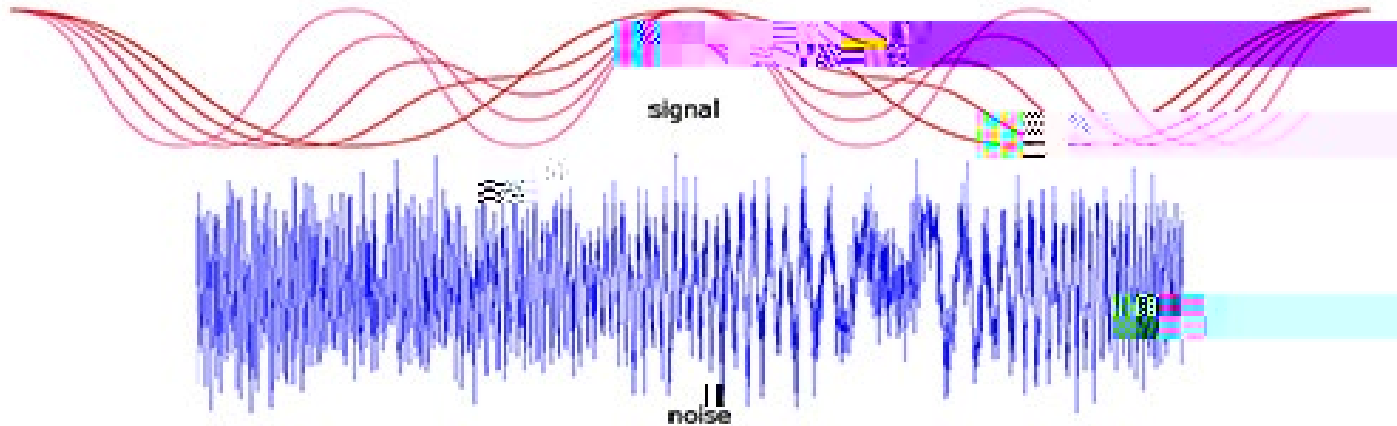
- PARSS is a group of researchers at the University of South Florida that supports Student Success professionals by developing analytical models that identify students with potential need for additional support.

Why is PARSS at USF?

- PARSS is here to provide student success professionals with additional tools to help identify students who may benefit from support.
- PARSS was developed to aid in achieving Florida State Performance Based Funding (PBF) metrics.
- Towards that end, PARSS attributes directly align with PBF metrics.
- The Performance Based Funding Model was approved at the January 2014 Board of Governors Meeting. The development of the model included university presidents, provosts, boards of trustees, and other stakeholders starting in the fall of 2012. The model includes 10 metrics that evaluate Florida institutions on a range of issues. These metrics were chosen after reviewing over 40 metrics identified in the University Work Plans.

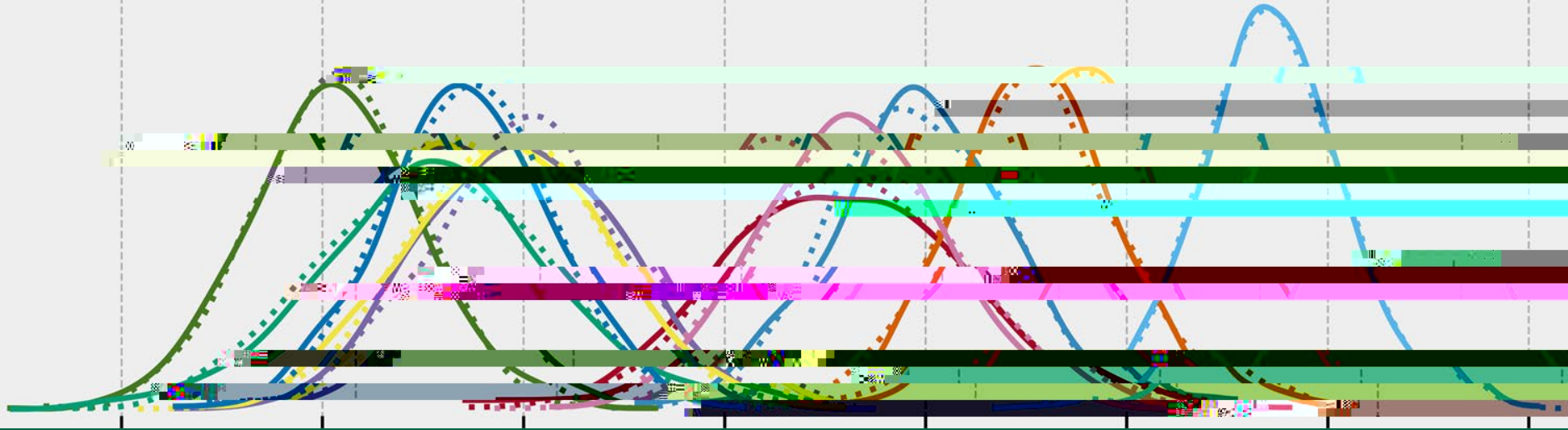
How does PARSS work?

- PARSS gathers large amounts of student data and uses machine learning and statistical modeling techniques to identify students with potential need for additional interventions.



Statistical Modeling

Statistical Modeling uses known distribution properties to quantify data. A statistical model is a mathematical model that embodies a set of statistical assumptions concerning the generation of sample data and similar data from a larger population.

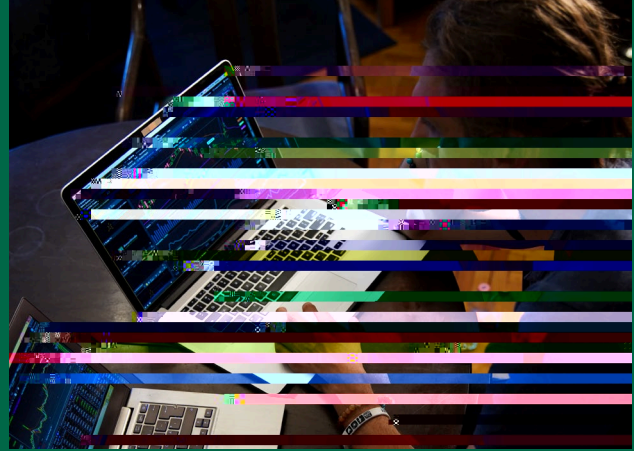


PARSS: Data

PARSS collects academic and demographic data from platforms like Banner as well as student behavior and attitudes from assessments.

Demographic	Academic	Behaviors	Attitudes towards
Major	GPA	Campus Engagement	Perseverance
College	Earned Credit Hours	Collaboration	Diversity
Campus	#DWF	Faculty Engagement	Difficulty
Education History	Degree Progress	Engagement with Diversity	Challenge
Age	Honors		Preparedness
	GPA Stability		

PARSS Students & Attributes



STUDENTS

PARSS has developed attributes for two undergraduate student populations:

1. First Time in College (FTIC)
2. Transfer students

CONCERNS

PARSS focuses on the following:

1. First year retention
2. Graduating on time
3. Maintaining a stable GPA

FTIC Students

There are four FTIC attributes:

1. First Year Retention (FYR)
2. First Semester GPA Differential (DIF)
3. Finish in Four (SF4)
4. Finish in Six (SF6)



First Year Retention (FYR)

ATTRIBUTE

- The FYR attribute will indicate that a student has a low probability of returning for their sophomore year.
- The FYR model is run at the start of the first year and leverages pre-matriculation data such as high school GPA and data from New

First Semester GPA Differential (GPA DIF)

ATTRIBUTE

- GPA DIF indicates that a student's first semester in college GPA is significantly lower than their cumulative high school GPA.
- GPA DIF is run at the end of a student's first Fall semester.
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Finish in Four (SF4)

ATTRIBUTE

- SF4 will indicate that the student is not on pace to graduate in their fourth Fall semester or fifth Summer based on their progress at the start of the second and third Spring semester.
- To ensure timely student graduation in alignment with the Finish-in-Four metric, this attribute gives Care Team members early insights into which students are on the fringe of that achievement. Additional support could aid the student in graduating earlier than otherwise.

PBF METRIC

- **Metric 4** - Four Year Graduation Rates (full-time FTIC)

Finish in Six (SF6)

ATTRIBUTE

- SF6 will indicate that a student has a low probability of graduating by their sixth Summer.
- This attribute is run in a student's fourth Summer.

PBF METRIC

- **Metric 9b** - Six-Year Graduation Rate for students who are awarded a Pell Grant in their first year

Transfer Attributes

There are four transfer student attributes:

- Transfer First Year Persistence (TRP)
- First Semester GPA Differential (GPA DIF)
- Finish in Two (FIT2)
- Finish in Three (FIT3)



Transfer First Year Persistence (TRP)

- The TRP model predicts whether or not a student will persist into their second fall semester.
- This TRP attribute indicates that a transfer student with an AA degree from a Florida community college will need some support or a “lift” in order to persist to the end of the next fall semester. In effect, it is the FYR attribute for transfer students.



Finish in Two (FIT2)

ATTRIBUTE

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Models Summary

FTIC

- FYR - This attribute indicates that the student has a low probability of returning in their second year.
- GPA DIF - This attribute indicates that the student's GPA is far lower than expected.
- SF4 - This attribute indicates that the student has a low probability of graduating within four years.
- SF6 - This attribute indicates that the student has a low probability of graduating within six years.

TRANSFER

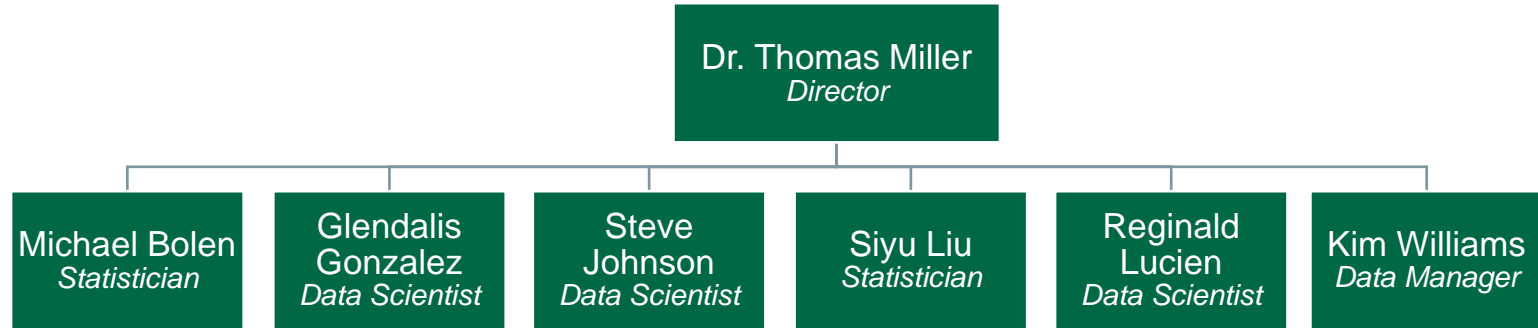
- TRP - This attribute indicates that the student has a low probability of returning in their second year.
- GPA DIF - This attribute indicates that the student's GPA is far lower than expected.
- FIT2 - This attribute indicates that the student has a low probability of graduating within two years.
- FIT3 - This attribute indicates that a student has a low probability of graduating within 3 years.

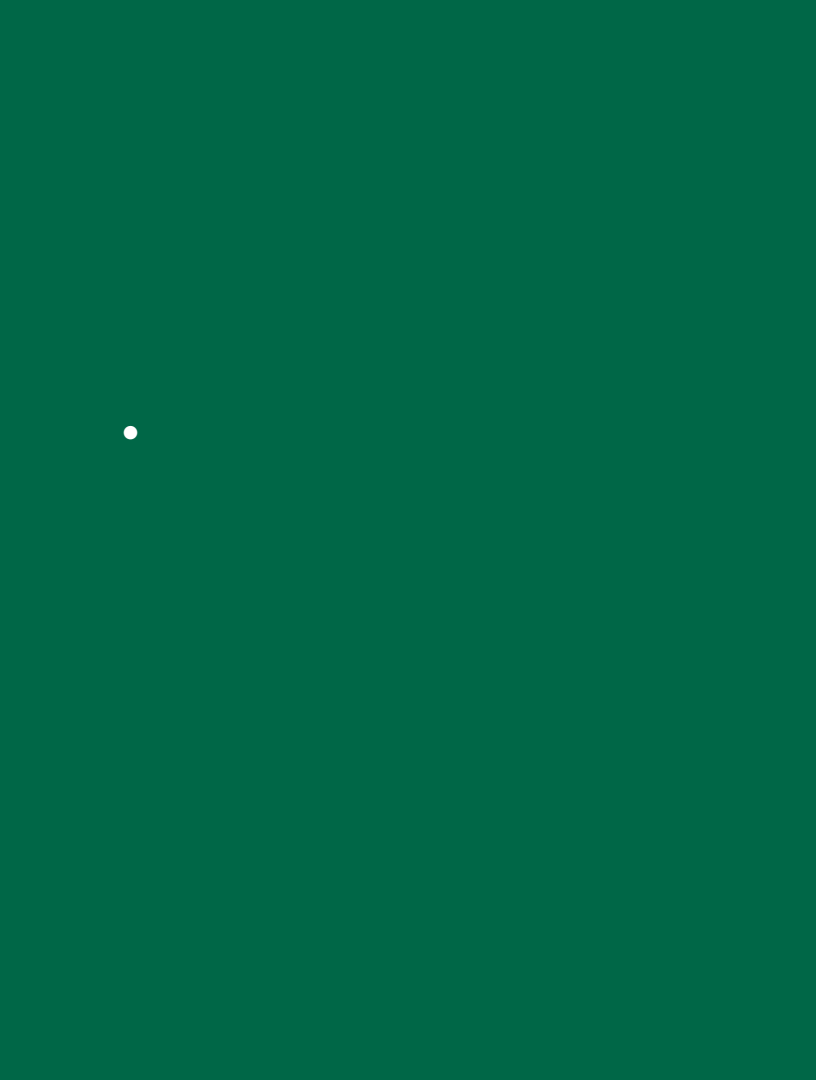
Value Added

- PARSS supports Student Success professionals through the creation of student attributes which are intended to help identify why a student may need additional support.
- We process large amounts of raw data and aggregate it into principled data which is far more interpretable.
- Achieving or not achieving PBF Metrics may get down to helping 150 more students to graduate on time.

Who is on the PARSS team?

- Data scientists are big data wranglers, gathering and analyzing large sets of structured and unstructured data. They analyze, process, and model data then interpret the results to create student attributes.
- Statisticians practice the science of using data to make decisions. They decide what data they need and how to collect it, design experiments, collect data, analyze and interpret data, and report conclusions.





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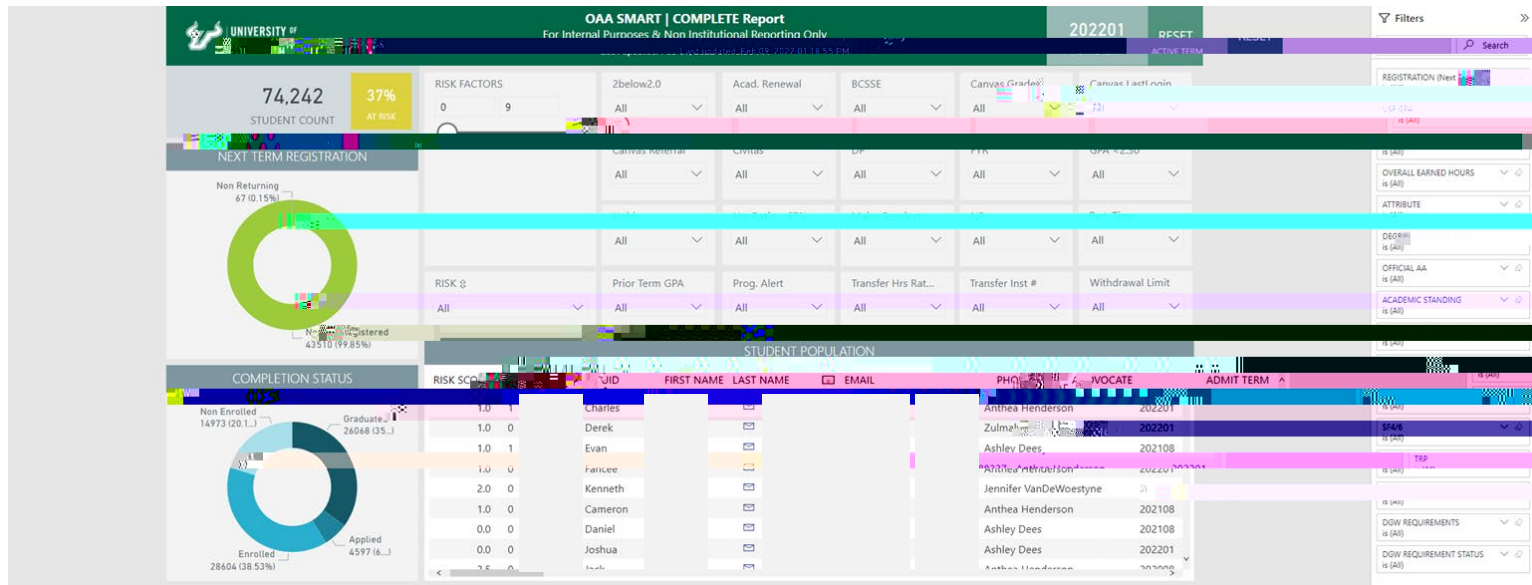
PARSS and Student Success Professionals



- PARSS uses many common variables like GPA and earned credit hours in our models.
- However, USF Care Team members have years of experience working closely with students and have a far more discerning understanding of factors that affect success.
- Working in collaboration with the Care Team and PARSS can determine new variables to include in the models thus improving their accuracy and utility.

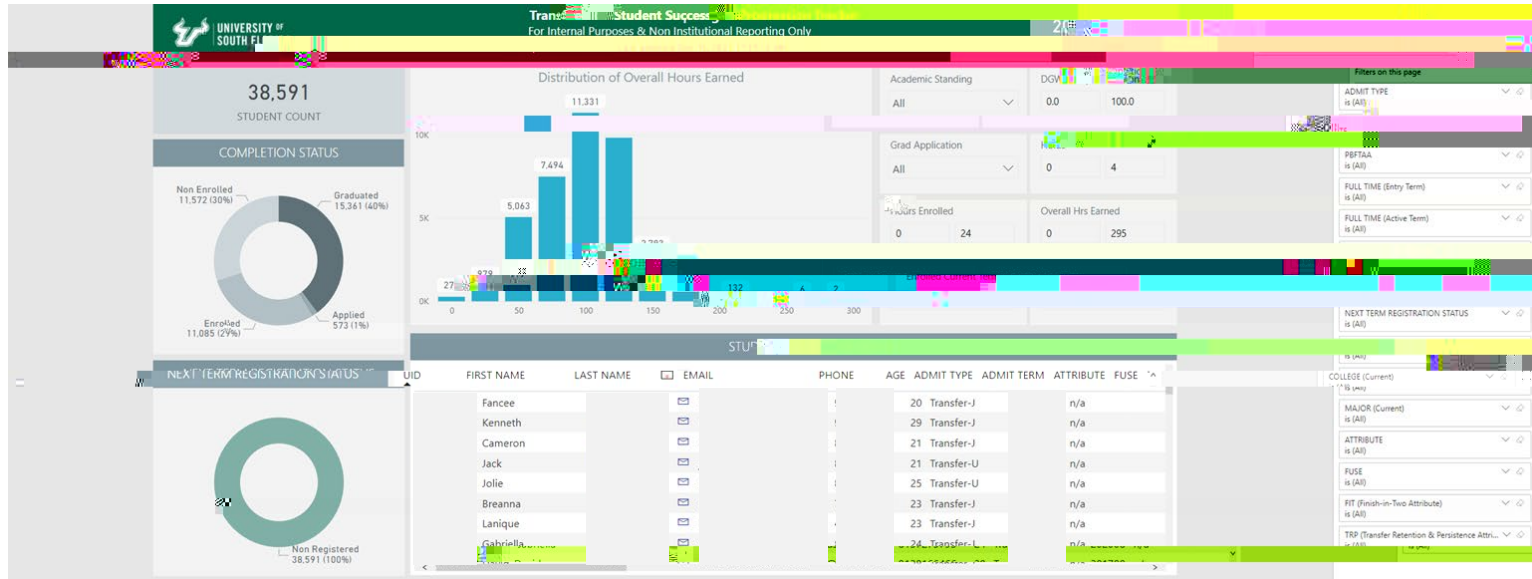
OAA SMART

- The Office of Academic Advocacy SMART dashboard incorporates the student success attributes.
- You may need to request access.



Transfer Student Success Dashboard

- PARSS student success attributes are also located in the Transfer Student Success Dashboard.
- You may need to request access.





Thank you!

- PARSS appreciates your support and collaboration.
- Please distribute this widely.