# STUDENT SUCCESS AND GRADUATION BY THE NUMBERS

SLS Conference March 3, 2017

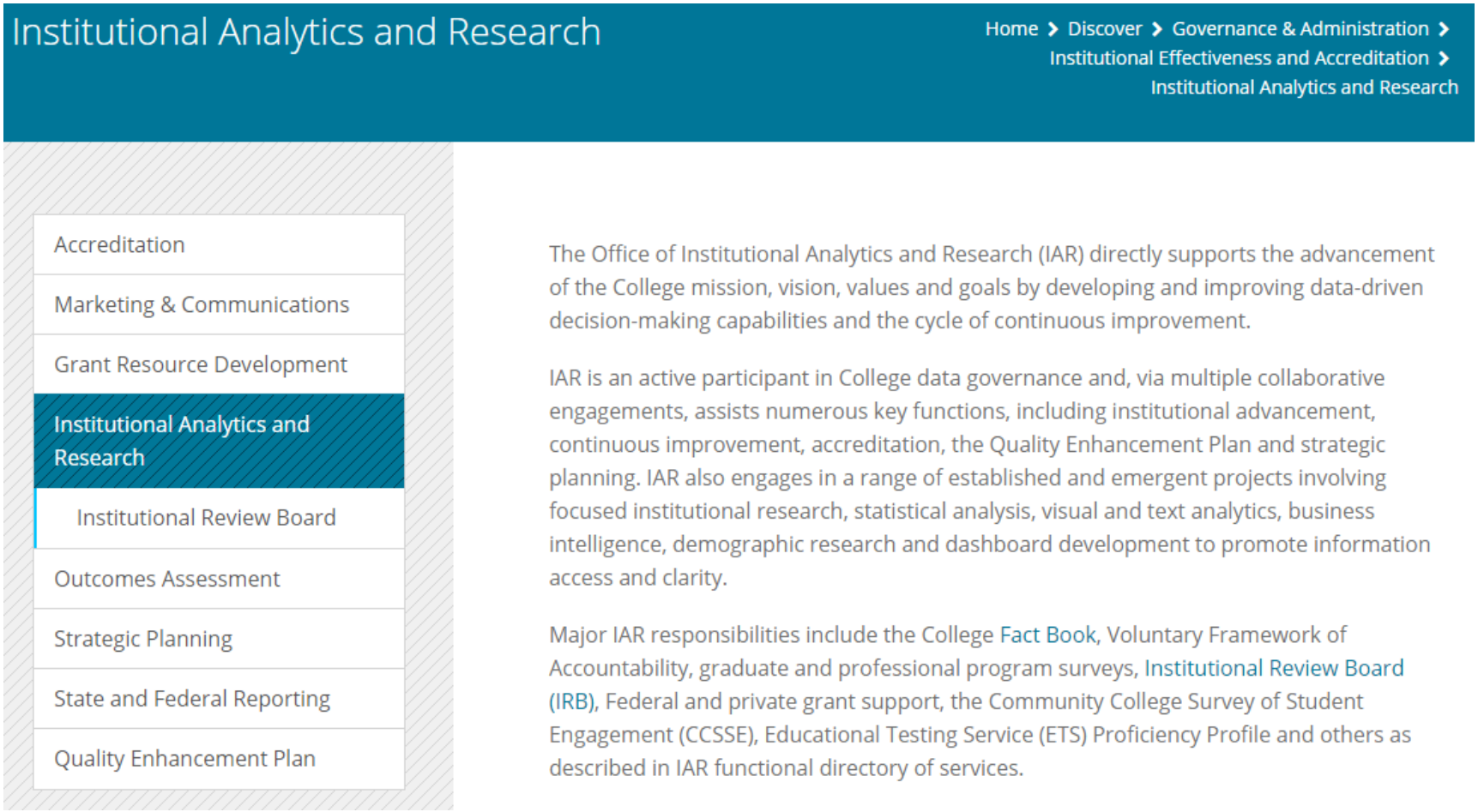
Dr. Greg V. Michalski, Ph.D., PMP ®
Director, Institutional Analytics and Research

FLORIDA STATE COLLEGE AT JACKSONVILLE™

# Agenda

- Institutional Analytics and Research (IAR)
- Student success
  - Various definitions
- Graduation Rates (Federal)
  - Institute of Education Sciences (IES)
    - **Integrated Postsecondary Education Data System (IPEDS)**
    - National Center for Education Research (NCER)
    - National Center for Education Statistics (NCES)
    - National Center for Education Evaluation and Regional Assistance (NCEE)
    - National Center for Special Education Research (NCSER)

# Institutional Analytics & Research (IAR)




Web Address: https://www.fscj.edu/discover/governance-administration/oiea/iaar
E-mail Address: StudentrRsearchLM@fscj.edu

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# Institutional Analytics & Research (IAR)

Greg Michalski, Ph.D., PMP® Director
Sue Klemer, Senior Research Analyst
Steve Kruszewski, Assistant Research Analyst

- College Fact Book
- Institutional Research
- Standardized Surveys (e.g., CCSSE, CCSFE, SENSE)
- Statistical Data Analysis
- Strategic Plan progress measures
- Institutional Review Board (IRB)
- Voluntary Framework of Accountability (VFA)
- Predictive and Text Analytics
- Qualitative Research
- Concept Mapping
- Aspen Award Support
- Service Area Economic and Demographic Research/Analysis
- Student Learning Assessments (e.g., ETS Proficiency Profile)
- Grant pursuit, data, and analysis
- Title III grant data analysis
- Regional Accreditation/QEP support
- Evaluation Services
- High Quality Professional Survey Development and Advanced Analysis
- Achieving the Dream Data Analytics

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# Text Analytics Research

AIR Association for Institutional Research
Data and Decisions for Higher Education

## *Mining Text Data: Making Sense of What Students Tell Us*

Co-written with John Zilvinskis of the Indiana University Center for Postsecondary Research
*AIR Professional File, Fall 2016.* ISSN 2155-7535

BlueWave **News**

Staff Spotlight

### Dr. Greg Michalski Wins Charles F. Elton Best Paper Award

The Association for Institutional Research (AIR) recently announced Director of Institutional Analytics and Research (IAR) Dr. Greg V. Michalski as a recipient of the Charles F. Elton Best Paper Award. This prized award celebrates the scholarly papers presented at the Annual AIR Forum. It specifically seeks out those papers that best exemplify the standards of excellence established by the award's namesake and that make significant contributions to the field of Institutional Research (IR).

Co-written with John Zilvinskis of the Indiana University Center for Postsecondary Research, their paper, titled "Mining text data: Making sense of what students tell us," is being published in the AIR Professional File, which features journal-length publications grounded in relevant literature that synthesize current issues, present new processes or models or share practical applications related to IR.

Established in 1966, AIR is the world's largest professional association for institutional researchers. Designed to help education professionals in various institutional research-related fields, AIR offers educational resources, best practices and professional development opportunities to utilize institutional research effectively.

"It's a true honor to be selected for this award," said Dr. Michalski. "As institutional researchers, we are always focused on developing, sharing and using research to assist decision-making and continuously improve our institutions to benefit our students, community and society at large. The field of text analytics is a promising area with the potential to assist in developing new practices to even more completely serve our students and the College."

https://www.fscj.edu/bluewave-news/bluewave-news-february-2017

Achieve@FSCJ

February 2017

# STUDENT SUCCESS AT FSCJ

**FSCJ is dedicated to the idea that anyone can thrive in a supportive environment that promotes lifelong learning.**

## Components of Student Success

At FSCJ, we believe student success includes:

- Mastering skills and gaining knowledge.
- Developing intellectually and emotionally.
- Engaging academically, socially and civically.
- Setting and achieving goals (achievable and aspirational).
- Seeking help and accessing resources.
- Demonstrating responsibility, resiliency and adaptability.
- Appreciating diverse people and perspectives.
- Developing a sense of identity and purpose.

**Readily Measurable Success Components**

- Mastering skills [competency based assessment]
- Engaging academically [SENSE]*
- Setting/achieving goals [FTIC cohort survey]
- Seeking help and accessing resources [Accudemia]

*Survey of Entering Student Engagement

Student Success is likely at FSCJ when we:

- Support students in all aspects of their development and education.
- Provide safe, effective and respectful student-focused environments and interactions.
- Facilitate identification of clear goals, learning pathways and opportunities for engagement.
- Promote and support excellence in teaching and learning.
- Recognize and respect the needs of diverse students.
- Make teaching and learning accessible to all.

FSCJ strives to instill an eagerness for education and preparedness for present and future endeavors. We know we are successful when students:

- Make progress toward and achieve goals.
- Take advantage of learning opportunities and College resources.
- Chart a unique course and plan for the future.
- Assume responsibility for behaviors and academic outcomes.

To reflect the breadth of academic experiences offered at FSCJ, the diverse student population we serve and the important but varying perspectives held by those in our College Community, the final product is more of a statement than a one-sentence definition.

The data we gathered made it clear that faculty and staff at FSCJ believe it is important to communicate to students how their actions contribute to their success. We look forward to

http://fscjmarcom.azurewebsites.net/atd/index.html#main

# Quantitative Definition of Course Success

- Student success in courses
  - *Course Success* = Σ A, B, C / Σ A, B, C, D, F, FN, W (also known as "enrollee success")
    - Percentage of grades “C or above” (compared to all grades A, B, C, D, F, FN, W)
  - Example: 1,000 students received a grade in ENC1101 in the summer 2015 term. Of these,
    - 500 grades were “A”
    - 100 grades were “B”
    - 100 grades were “C”
    - All other grades were less than “C”
  - What is the calculated success rate for the course?

**70 % success rate**

# Achieving the Dream (ATD) Baselines

**Success Rates in Top 20 Highest Enrolled Courses: Fall 2015**

| Success* Rates: All Students (A+B+C grades/A+B+C+D+F+W grades) | | | | | Success* Rates by Ethnicity (A+B+C grades/A+B+C+D+F+W grades) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Enrollment Rank | Success Rank | Course Number | Course Title | Success Rate | Asian | Black | Hispanic | Native American | Unknown | White |
| 1 | 11 | ENC1101 | ENGLISH COMP. 1 | 75% | 80% | 70% | 75% | 69% | 78% | 78% |
| 2 | 18 | MAC1105 | COLLEGE ALGEBRA | 67% | 77% | 61% | 63% | 70% | 72% | 69% |
| 3 | 20 | MAT1033 | INTERMED. ALGEGRA | 61% | 70% | 54% | 64% | 83% | 67% | 64% |
| 4 | 10 | PSY1012 | GEN. PSYCOHLOGY | 79% | 83% | 71% | 78% | 100% | 86% | 82% |
| 5 | 14 | ENC1102 | WRITING ABOUT TEXTS | 75% | 63% | 71% | 74% | 50% | 77% | 77% |
| 6 | 8 | STA2023 | ELEM. STATISTICS | 79% | 82% | 77% | 82% | 83% | 82% | 79% |
| 7 | 12 | BSC2085C | HUM. ANAT. PHYS. 1 | 75% | 78% | 69% | 75% | 25% | 77% | 77% |
| 8 | 9 | HUM2020 | TOPICS HUMANITIES | 79% | 85% | 74% | 85% | 100% | 85% | 79% |
| 9 | 5 | ECO2013 | PRINCP. ECON. 1 | 80% | 88% | 72% | 84% | 100% | 87% | 81% |
| 10 | 19 | MAT0028 | ELEM. ALGEGRA | 65% | 82% | 59% | 70% | 67% | 60% | 69% |
| 11 | 1 | DEP2004 | HUM. GROWTH-DVLPT. | 85% | 78% | 84% | 82% | 50% | 86% | 86% |
| 12 | 15 | BSC1005 | LIFE BIO. ENVIRON. | 73% | 88% | 62% | 78% | 50% | 71% | 77% |
| 13 | 13 | CGS1100 | MICROCOMP. APPS. | 75% | 88% | 65% | 75% | 67% | 72% | 81% |
| 14 | 4 | SLS1103 | STRAT. SUCCESS COLL., CAREER, LIFE | 81% | 90% | 76% | 79% | 100% | 92% | 82% |
| 15 | 2 | SPC2608 | PUBLIC SPEAKING | 84% | 87% | 77% | 75% | 80% | 90% | 87% |
| 16 | 16 | BSC2010C | PRINCP. BIO. 1 | 70% | 62% | 56% | 69% | 60% | 79% | 75% |
| 17 | 17 | MGF1106 | TOPICS COLL. MATH | 67% | 69% | 56% | 64% | 100% | 68% | 74% |
| 18 | 7 | ESC1000 | EARTH-SPACE SCI. | 80% | 100% | 76% | 86% | 50% | 77% | 80% |
| 19 | 6 | SPC2017 | INTRO. SPEECH COMM. | 80% | 96% | 75% | 90% | 50% | 87% | 79% |
| 20 | 3 | POS2041 | AMERICAN GOVMT. | 81% | 93% | 74% | 79% | 100% | 87% | 84% |
| College-wide Total** | | | | 80% | 84% | 75% | 79% | 80% | 83% | 82% |

** Course success is defined as the earning of a grade C or higher*

*** College-wide total for credit courses, excluding internships, independent studies, and individual instruction*

# ATD Significance Comparisons

## SPSS v24 Pairwise Comparisons

| Course | Asian | Black | Hispanic | Native American | unknown | White | Total |
|---|---|---|---|---|---|---|---|
| | (A) | (B) | (C) | (D) | (E) | (F) | |
| BSC1005 | 0.875 | 0.622 | 0.775 | 0.500 | 0.710 | .773B | 0.730 |
| BSC2010C | 0.622 | 0.559 | 0.688 | 0.600 | .789B | .753B | 0.700 |
| BSC2085C | 0.780 | 0.694 | 0.748 | 0.250 | 0.771 | 0.777 | 0.754 |
| CGS1100 | 0.879 | 0.655 | 0.746 | 0.667 | 0.724 | .806B | 0.751 |
| DEP2004 | 0.783 | 0.838 | 0.822 | 0.500 | 0.863 | 0.862 | 0.848 |
| ECO2013 | 0.875 | 0.722 | 0.841 | 1.000 | .871B | 0.810 | 0.802 |
| ENC1101 | 0.800 | 0.698 | 0.754 | 0.692 | 0.780 | .780B | 0.755 |
| ENC1102 | 0.788 | 0.713 | 0.743 | 0.500 | 0.773 | 0.767 | 0.752 |
| ESC1000 | 1.000 | 0.757 | 0.864 | 0.500 | 0.769 | 0.803 | 0.796 |
| HUM2020 | 0.854 | 0.744 | 0.851 | 1.000 | 0.848 | 0.793 | 0.794 |
| MAC1105 | .772B | 0.614 | 0.629 | 0.700 | 0.716 | .687B | 0.672 |
| MAT0028 | 0.821 | 0.586 | 0.700 | 0.667 | 0.597 | .694B | 0.657 |
| MAT1033 | 0.704 | 0.541 | 0.645 | 0.833 | .667B | .639B | 0.614 |
| MGF1106 | 0.688 | 0.565 | 0.644 | 1.000 | 0.684 | .741B | 0.672 |
| POS2041 | 0.926 | 0.738 | 0.788 | 1.000 | 0.871 | 0.835 | 0.816 |
| PSY1012 | 0.826 | 0.709 | 0.777 | 1.000 | .859B | .824B | 0.794 |
| SLS1103 | 0.900 | 0.759 | 0.794 | 1.000 | .919B | 0.819 | 0.814 |
| SPC2017 | 0.957 | 0.751 | 0.900 | 0.500 | 0.872 | 0.791 | 0.802 |
| SPC2608 | 0.871 | 0.771 | 0.747 | 0.800 | .905B | .866B | 0.840 |
| STA2023 | 0.820 | 0.769 | 0.821 | 0.833 | 0.824 | 0.794 | 0.796 |

75.5% success

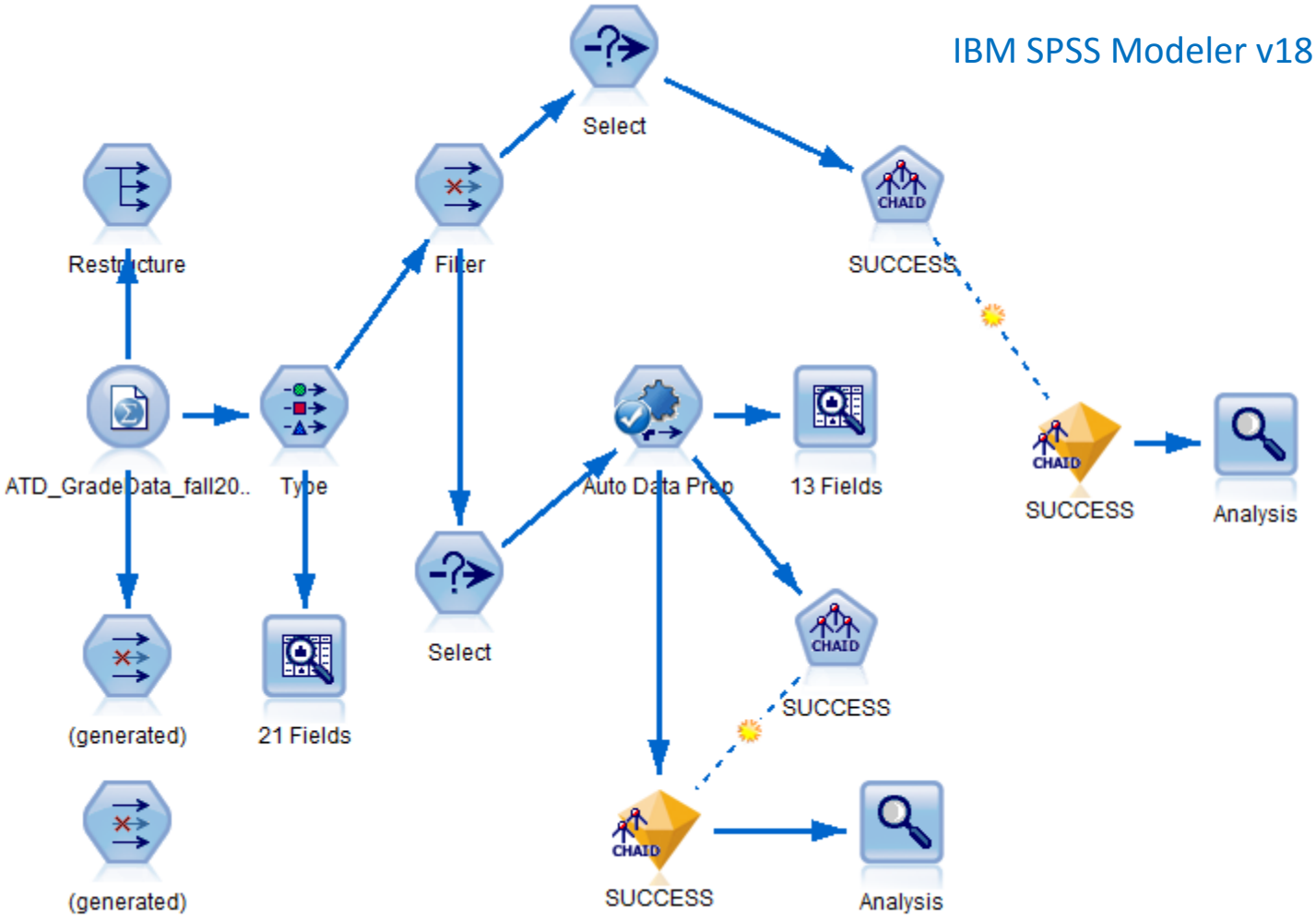
Closer Look

Results are based on two-sided tests assuming equal variances. For each significant pair, the key of the smaller category appears in the category with the larger mean.

Significance level for upper case letters (A, B, C): .05. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

# ENC1101 Closer Look

IBM SPSS Modeler v18



# ENC1101 Closer Look

**Model Summary**

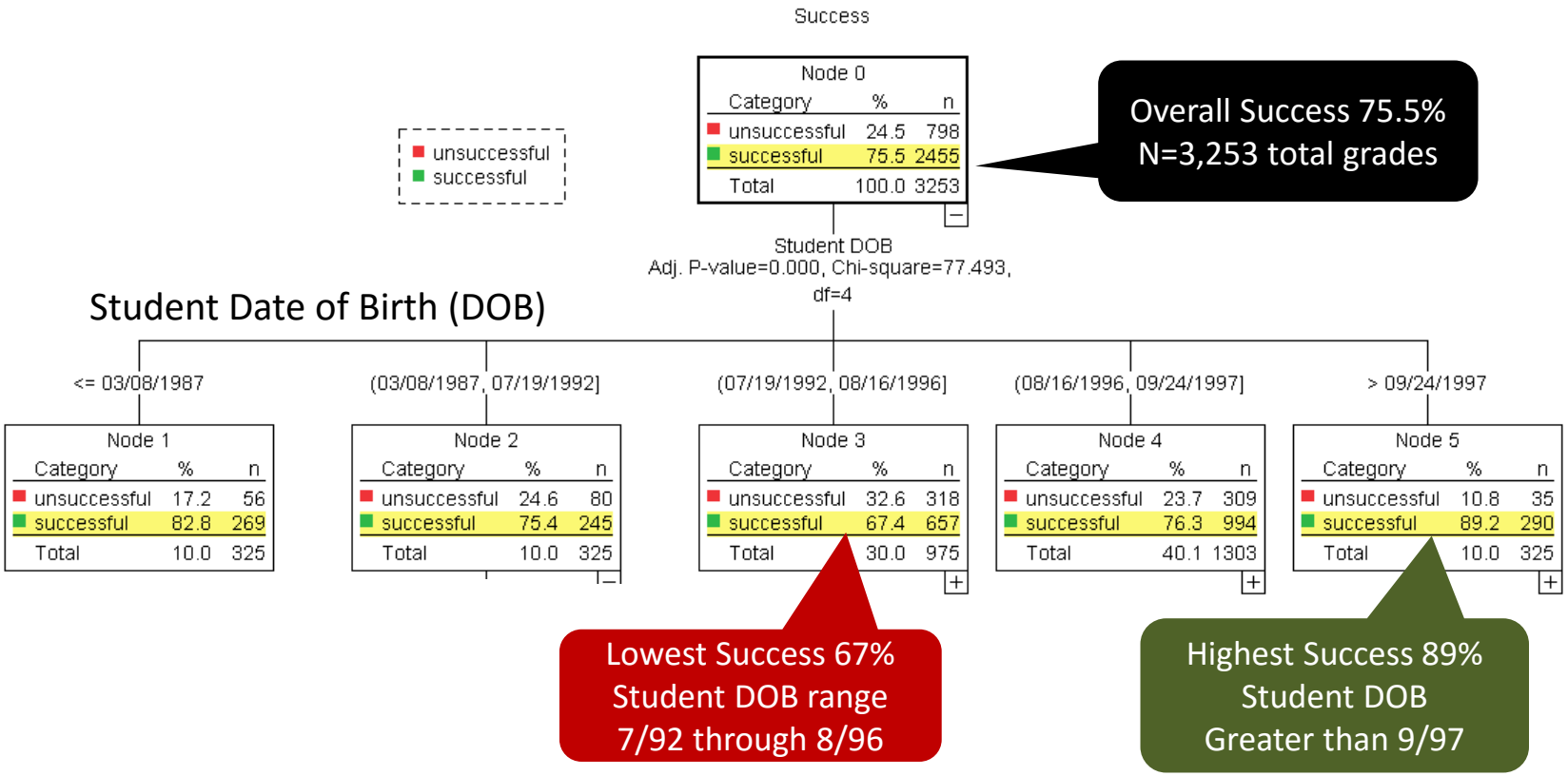
| | | |
|---|---|---|
| Specifications | Growing Method | EXHAUSTIVE CHAID |
| | Dependent Variable | Success |
| | Independent Variables | Session Type, Campus-Center, Course Delivery Method, HS Institution ID, Student Race-Ethnicity, Student Gender, Student DOB, Student Zip Code |
| | Validation | None |
| | Maximum Tree Depth | 3 |
| | Minimum Cases in Parent Node | 100 |
| | Minimum Cases in Child Node | 50 |
| Results | Independent Variables Included | Student DOB, Student Race-Ethnicity, HS Institution ID, Student Zip Code, Student Gender, Campus-Center |
| | Number of Nodes | 43 |
| | Number of Terminal Nodes | 30 |
| | Depth | 3 |

Chi-square Automatic Interaction Detector (**CHAID**)

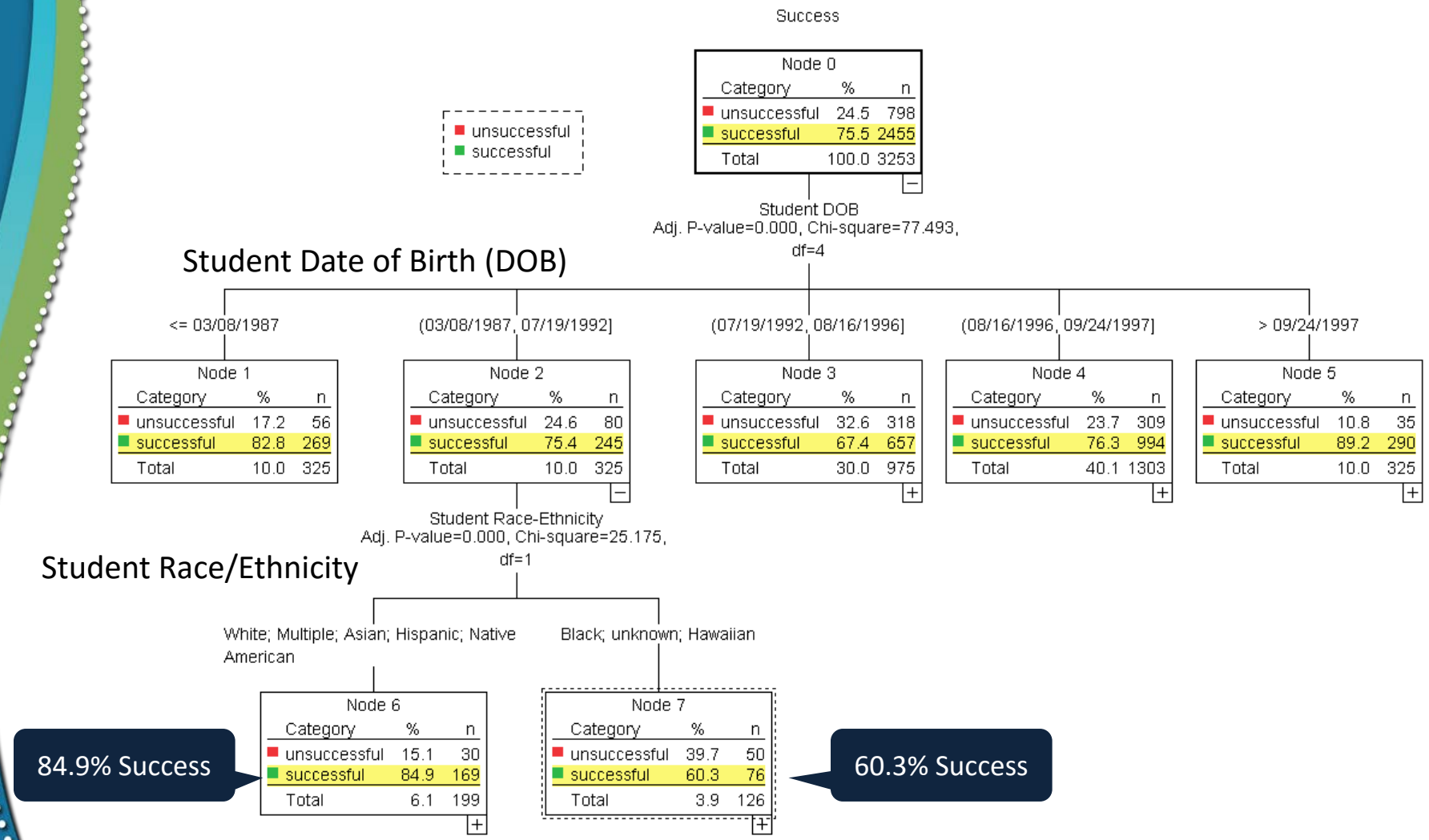
8 Predictor Variables

6 Variables Retained in Model

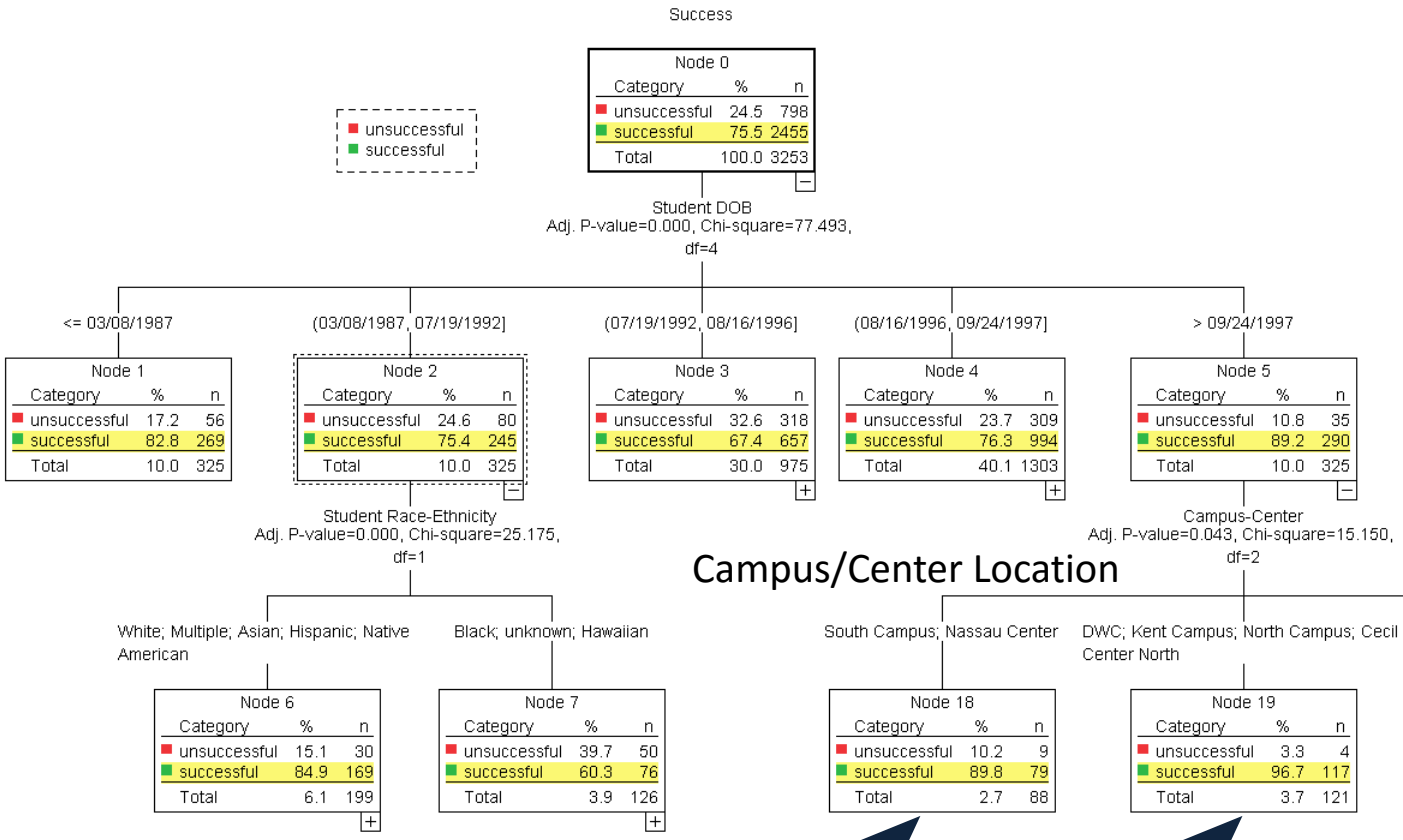
# ENC1101 Closer Look



# ENC1101 Closer Look



# ENC1101 Closer Look



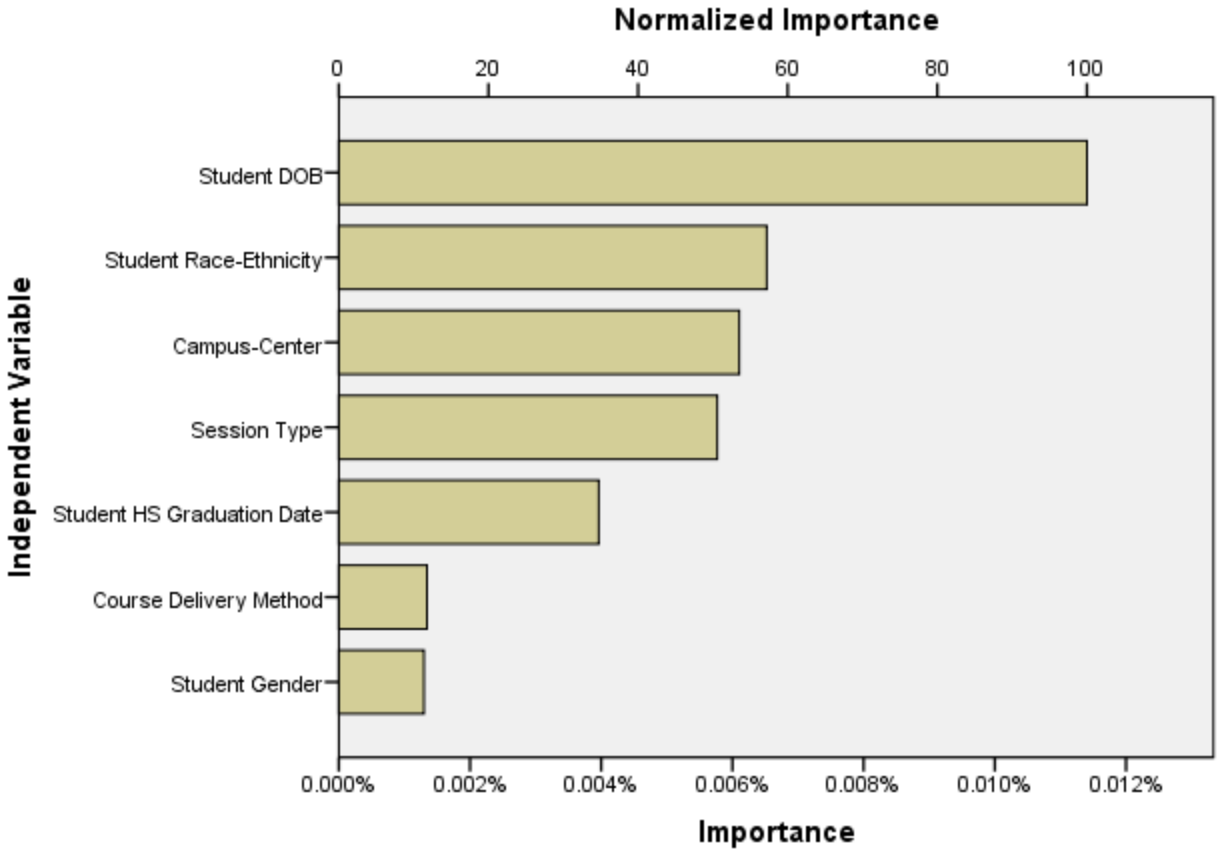

Campus/Center Location

89.8% Success

96.7% Success

81.0% Success

# ENC1101 Closer Look



# Graduation Rates

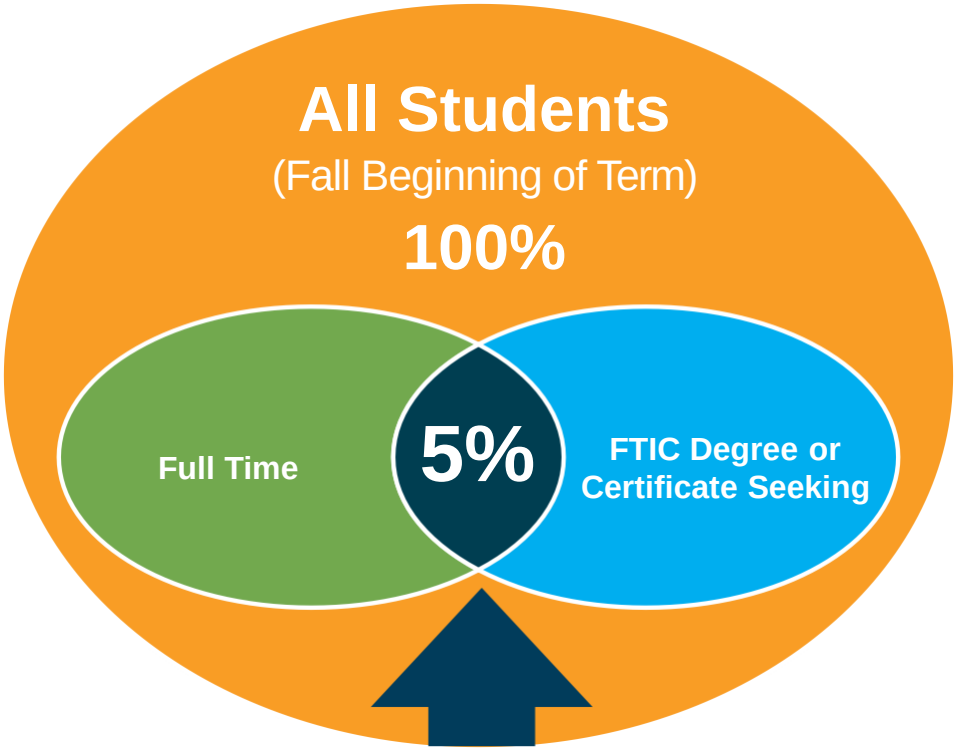
# IPEDS Graduation Rate Facts

The IPEDS Graduation Rate is also known as the "Student Right to Know" graduation rate*

- For each Fall Academic Term
  - Tracks a cohort of full-time, first-time, degree-or-certificate seeking students to monitor degree/certificate completion within 150% of "normal time“ (for the program of enrollment)
  - Each Fall term cohort is “adjusted” to exclude students who are deceased, or who have left school to join the military or the Peace Corp, or to travel as a church missionary. The residual student set is known as the Adjusted Cohort.
- In 2007-08, FSCJ IPEDS 150% graduation rate began tracking over a six-year period
  - Prior to 2007-08 FSCJ was tracked as a 2-year institution

Note: not all students at the institution are tracked for this Graduation Rate. Students who have already attended another postsecondary institution, who began their studies on a part-time basis, or who are not pursuing a degree- or certificate-seeking program are not tracked in this rate

# Which Students Are Counted?



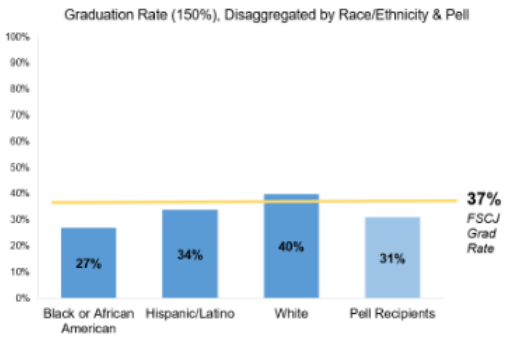

**IPEDS GRS Cohort Students**

Fall IPEDS Graduation Rate Survey (GRS)

# Achieve@FSCJ

February 2017

## DATA BYTE




## Graduation Rates

Regularly examining data and targeting improvements are imperative as we organize our work and track measurable results with a relentless focus on student achievement. Each quarter, our Data Byte will highlight a key indicator of student success — this edition: graduation rates.

While we know that students face barriers to getting in the front door, we should also know how many successfully complete their chosen programs. Graduation rate is the percentage of students who complete a credential within a specific time period (e.g., 150 percent of the "normal" time for completion means that students in a two-year program graduate within three years).

FSCJ's overall IPEDS graduation rate is 37 percent.* Disaggregating the rate allows us to see if there are any achievement gaps. In this case, there is a 10 percentage point gap for Black/African-American students, a 3 percentage point gap for Hispanic students and a 6 percentage point gap for Pell recipients.

Now that we know what student groups are at risk, it is our responsibility to understand why. Part of the Collegewide focus will be on moving the needle in overall graduation rate. Moreover, the Equity Subcommittee will be leading our efforts to identify the best strategies to close the gaps.

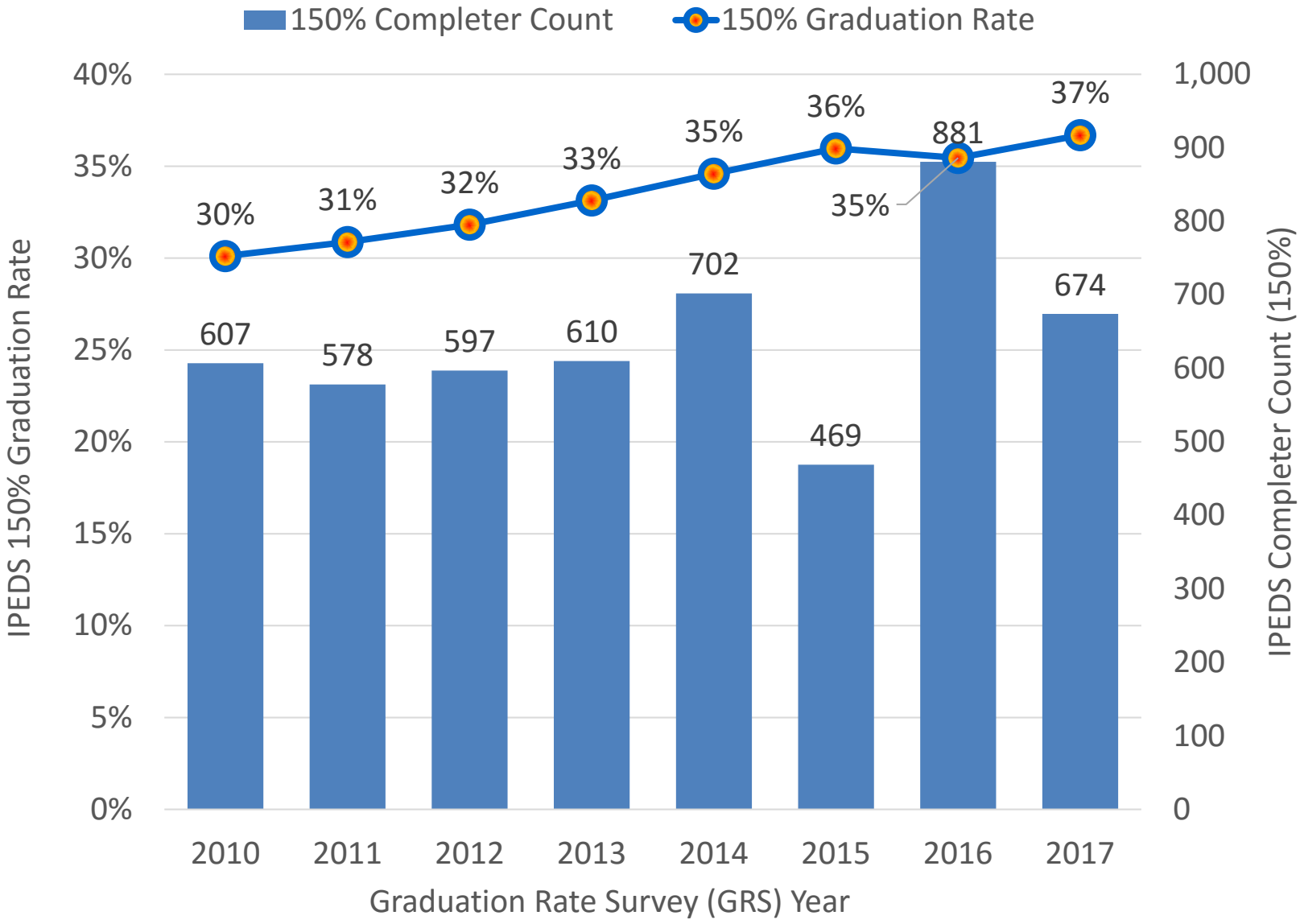
**Graduation rates are based on Student Right to Know definitions, as reported on 2016 IPEDS files. This includes the percent of the fall 2010 first-time, full-time student cohort who completed a degree, certificate or transfer preparatory program within 150 percent of normal program time.*

$$\text{IPEDS Graduation Rate \%} = \frac{\text{Completer Count}}{\text{Adjusted Cohort Count}}$$

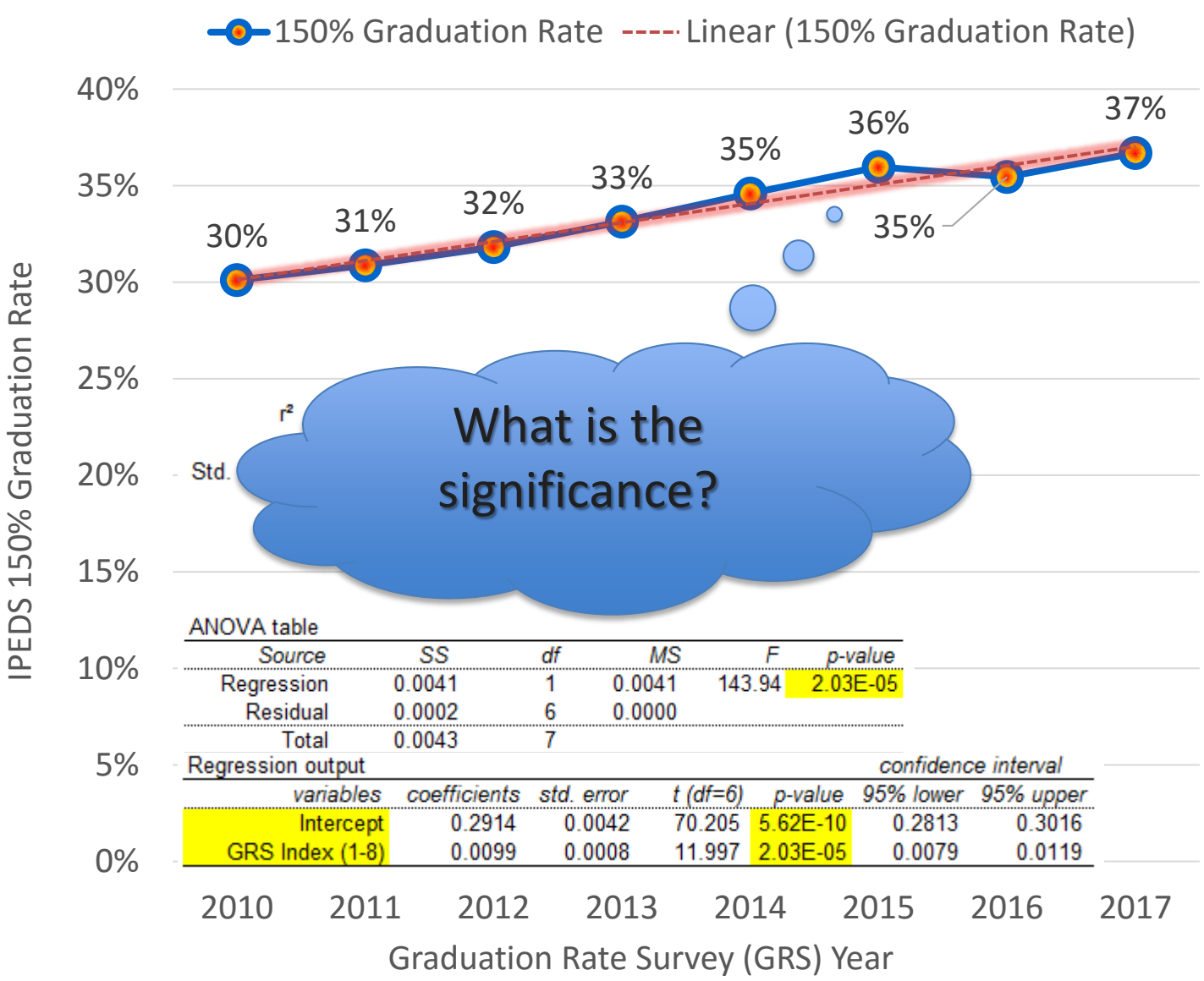
| IPEDS Reporting Year | Cohort Year | GRS Year | Adjusted Cohort Count | 150% Completer Count | 150% Graduation Rate |
|---|---|---|---|---|---|
| 2009-10 | 2003-04 | 2010 | 2,016 | 607 | 30.11% |
| 2010-11 | 2004-05 | 2011 | 1,872 | 578 | 30.88% |
| 2011-12 | 2005-06 | 2012 | 1,876 | 597 | 31.82% |
| 2012-13 | 2006-07 | 2013 | 1,841 | 610 | 33.13% |
| 2013-14 | 2007-08 | 2014 | 2,029 | 702 | 34.60% |
| 2014-15 | 2008-09 | 2015 | 1,304 | 469 | 35.97% |
| 2015-16 | 2009-10 | 2016 | 2,485 | 881 | 35.45% |
| 2016-17 | 2010-11 | 2017 | 1,837 | 674 | 36.69% |

http://fscjmarcom.azurewebsites.net/atd/index.html#main

# FSCJ IPEDS GRADUATION 150% RATE



# FSCJ IPEDS GRADUATION 150% RATE



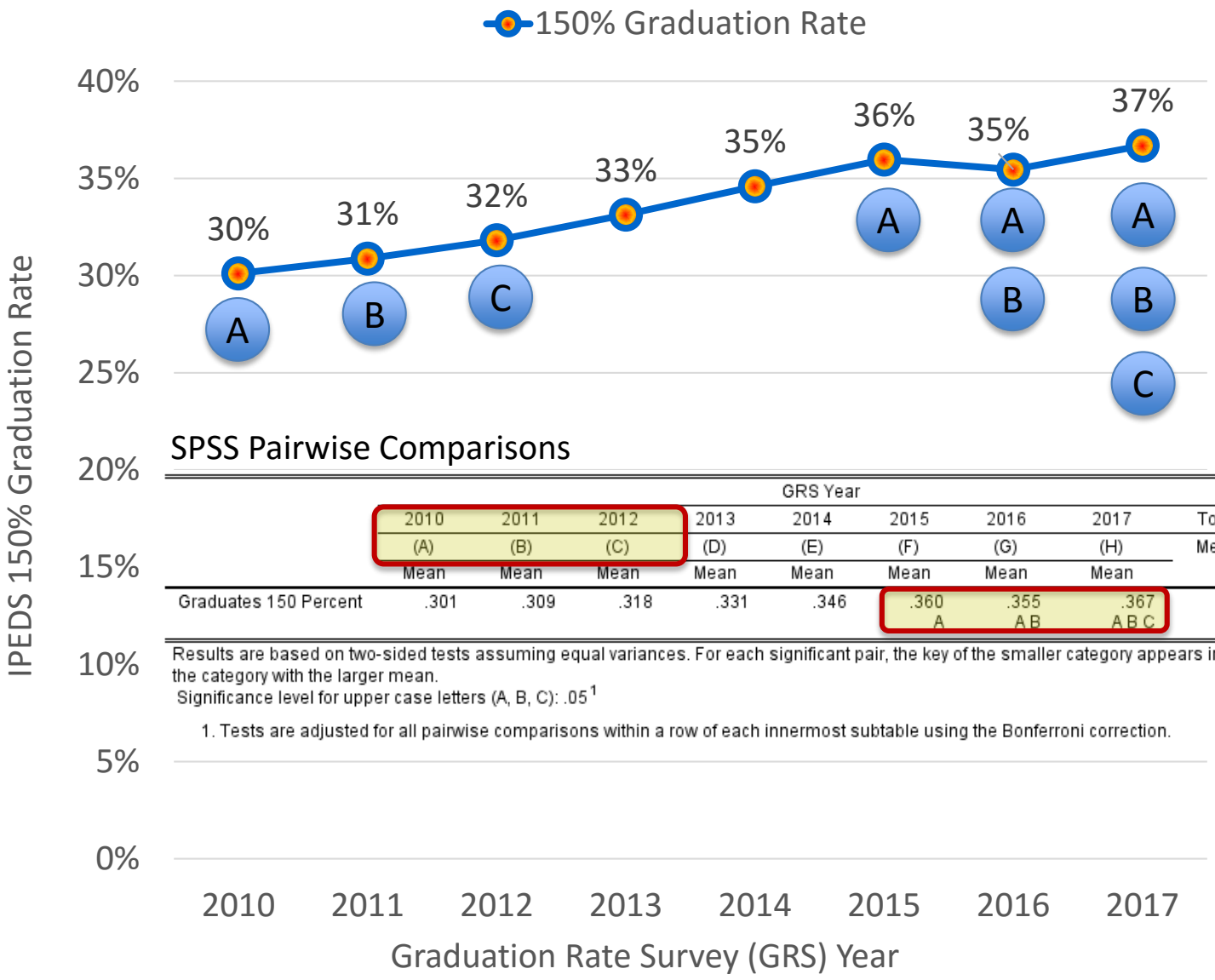

ANOVA table

| Source | SS | df | MS | F | p-value |
|---|---|---|---|---|---|
| Regression | 0.0041 | 1 | 0.0041 | 143.94 | 2.03E-05 |
| Residual | 0.0002 | 6 | 0.0000 | | |
| Total | 0.0043 | 7 | | | |

Regression output

| | | | | | confidence interval | |
|---|---|---|---|---|---|---|
| variables | coefficients | std. error | t (df=6) | p-value | 95% lower | 95% upper |
| Intercept | 0.2914 | 0.0042 | 70.205 | 5.62E-10 | 0.2813 | 0.3016 |
| GRS Index (1-8) | 0.0099 | 0.0008 | 11.997 | 2.03E-05 | 0.0079 | 0.0119 |

# FSCJ IPEDS GRADUATION 150% RATE




## SPSS Pairwise Comparisons

| | GRS Year | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2010 (A) | 2011 (B) | 2012 (C) | 2013 (D) | 2014 (E) | 2015 (F) | 2016 (G) | 2017 (H) | Total Mean |
| | Mean | Mean | Mean | Mean | Mean | Mean | Mean | Mean | |
| Graduates 150 Percent | .301 | .309 | .318 | .331 | .346 | .360 A | .355 A B | .367 A B C | .335 |

Results are based on two-sided tests assuming equal variances. For each significant pair, the key of the smaller category appears in the category with the larger mean.
Significance level for upper case letters (A, B, C): .05[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

# Closing

- Thanks to Rawlslyn for her hard work and for inviting us to present.
- Thank you or your participation!
- Please feel free to contact IAR for
  - *Questions about this presentation*
  - *Services we provide*
  - *Research, evaluation, analysis ideas*
  - *A friendly chat about data and analytics*