Building a Data Institute

Leveraging Research Resources Within the Institution

Introduction

Christopher Reid
Sr Manager, Institutional Research

Lone Star College
Analytics and Institutional Research

Presentation Outline

- About Lone Star College
- About Analytics and Institutional Research
- Data Institute Beginnings and Purpose
- What is the Data Institute?
- Planning, Goals and Application Process
- Syllabus and Resources
- 2018 Cohort Assessment
- 2019 Cohort and on-
  Continuous Improvement
- Questions

DATA INSTITUTE

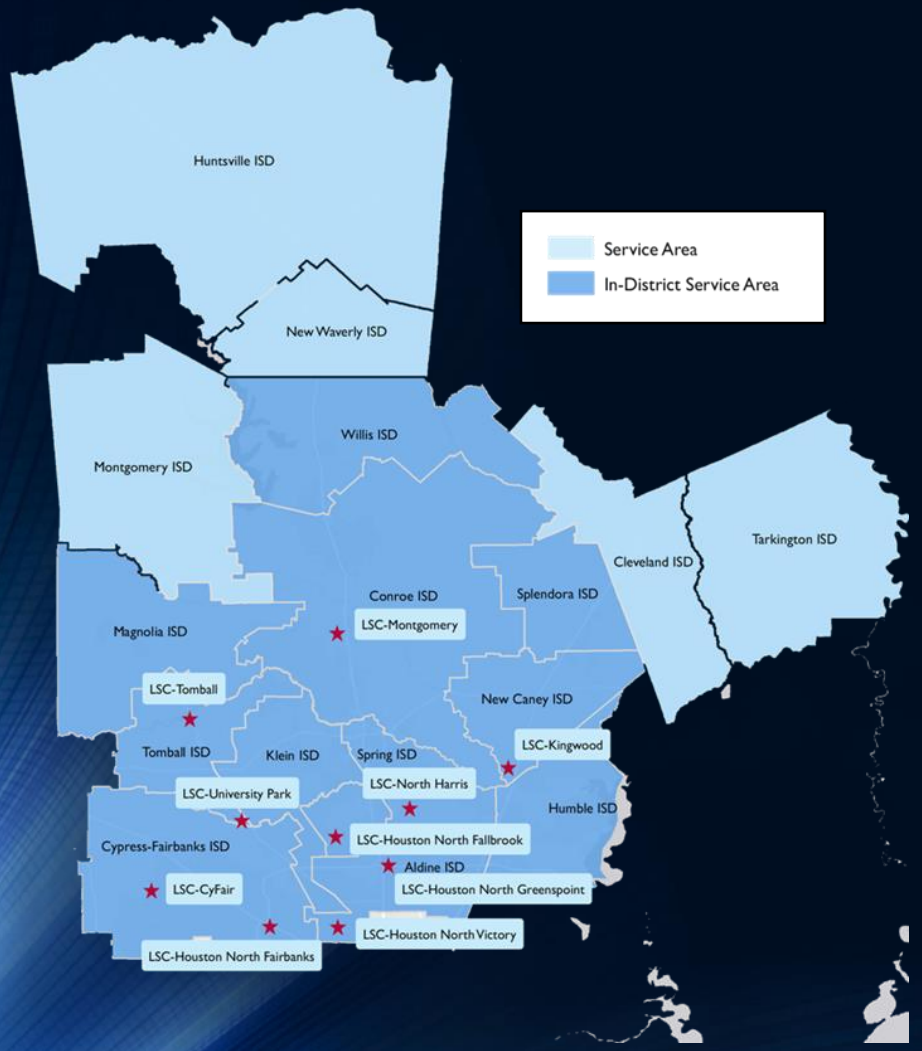
Presentation Objectives

- To understand the basic components of developing a Data Institute training program
- To understand the potential advantages and obstacles of planning an intensive training program for employees outside of the IR department
- Apply the basic concepts to create a similar product at your institution to enhance research, analytics, and data culture.

About Lone Star College

- Over 80,000 students enrolled each semester
- One of the top 3 largest colleges in the nation
- One of the fastest-growing college systems in U.S.
- Added 7,287 students fall 2012 to fall 2022, a 9.4% increase
- 11 school districts, 2,700 square miles, population of 2.4 million

About Lone Star College



11 In-District ISD's

80,000+ students

2.4 M population

2,700 square miles

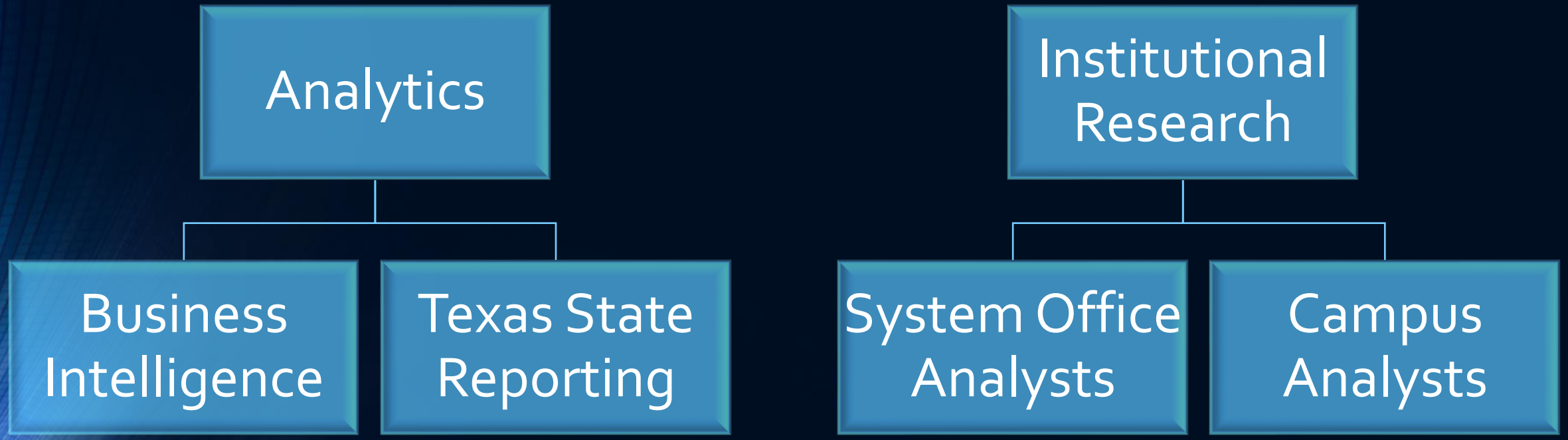
$426 M budget

AAA credit rating

6,900+ employees

10,500+ sections each fall!

Analytics and Institutional Research



Data Institute is Born

2016 Produced draft program plan for faculty and staff research training

2017 Proposed institute to leadership

- October- Institute approved
- November/December- Applications open and curriculum development begins
- December- First cohort selected

2018 LSC-AIR introduces strategic initiative to increase user adoption of tools and services

2018 Inaugural Data Institute begins

2019 2nd Cohort - 1 participant joined IR as Analyst II, currently Senior Manager

- 2 participants later promoted to Director
- 1 fellow earned 3 hours of course credit for Doctoral program
- Several fellows have taking on leadership roles at LSC

2020 3rd cohort - Interrupted by COVID but 3 of 4 teams completed graduation in Spring 2022

2022 4th Cohort - begins Fall 2022 includes a Vice President, Associate Vice Chancellor, directors, managers, and all levels of staff and faculty

Purpose of the Data Institute

- To develop institutional data literacy within Lone Star College, with emphasis on Lone Star's vision
- Encourage individuals interested in data research by creating "data teams" that comprise cross-functional staff and faculty from throughout the system
- Demystify working with institution data and relevant external data sources
- Empower individuals and groups outside of IR to dig into the data and see what comes out

What exactly is a “Data Institute?”

Two semester-long professional development for full-time faculty and staff

Competitive admission program

Series of workshops on

- Research design
- Data Sources
- Reporting Tools

Completion of a group research/critical thinking project on a topic of institutional interest

Planning Process

- Develop learning objectives and goals of institute
- Develop application process and selection criteria
- Develop syllabus and create access to tools
- Determine topics of interest to Institution

Goals and Learning Objectives

- Enhance participant's research and analytics knowledge and skills
- Enhance familiarity with IR's services, data sources, and tools
- Build a cohort of trained researchers to lead projects and assist decision-makers
- Increase the quality and quantity of research at Lone Star College
- Have participants complete a simple, insightful research study from problem definition through communicating results.

Application Process

- Created online application using JotForm
- Multiple choice and short answer questions
  - Skills with various tools, Excel, database software, local databases
  - Self-rating on learning and analytical skills
  - Short answers on critical thinking
- Created selection criteria and cut scores
  - Two fellows from each LSC location
  - Full-time faculty or staff
  - No technical experience needed
  - Supervisor approval required

Application Process – Sample Questions

Describe a time when you learned a new skill. Be specific.

Describe a time when you used data or information to solve a problem or answer a complex question. What was the outcome?

Give an example of the last time you had to “think outside the box" or be innovative.

What kinds of data or information do you use to make or guide decisions in your current role?

The culminating task for the Data Institute cohort is a group project. Are you able to work effectively and collaboratively with others?

2022 Syllabus

Session 1:	Introduction to Data Institute
	Introduction to Data Sources
Session 2:	Research Design
	Research Ethics
	Compliance
Session 3:	Research Design
	State Reporting
Session 4:	Data Analysis
	Presentation Skills and Storytelling
Session 5:	Data Visualization
	Power BI (Introduction and Intermediate training)

2022 Syllabus

Session 6:	Presidents Q&A Panel
	Chief Strategists Q&A Panel
Session 7:	Day in the Life/Real World of a Data Analyst
	TAIR Takeaways
Session 8:	Alumni Day
Session 9:	Final Project Review
Session 10:	Research Project Presentations
	Graduation

Every session 3 through 9 included time for group project work

2022 Session Agenda Sample

Session #1: Welcome to the Data Institute

09:00am - 09:40am	**Welcome**
09:40am – 10:15am	**Data Institute Overview**
10:15am - 10:30am	**Break**
10:30am - 11:00am	**Pre-Assessment**
11:00am - 11:30am	**Idea Clustering Activity**
11:30am - 01:00pm	**Lunch**
01:00pm – 01:40pm	**Access Review and Data Resources**
01:40pm – 02:00pm	**Break**
02:00pm – 3:00pm	**Goal-setting Experiment**
03:15pm-03:45pm	**Wrap Up and Q&A**

Homework: Data Fact

2022 Session Agenda Sample

Session #3: Research Design, Project Groups

09:00am – 9:15am	**Ice Breaker and Session Overview**
09:15am – 10:45am	**Research Design – Part II**
10:45am – 11:00am	**Break**
11:00am – 11:45 am	**Project Management Basics**
11:45am - 01:00pm	**Lunch**
01:00pm – 01:45pm	**Texas State Reporting**
01:45pm – 02:45pm	**Homework discussion, Research Topics and Groups Formed**
02:45pm – 03:00pm	**Break**
03:00pm – 04:00pm	**Groups Breakout and Discussion**
04:00pm - 04:15pm	**Wrap Up and Q&A**

Homework: Research Questions

Research Project Examples

Transient Students at Lone Star College
Lone Star has a hidden market we have yet to target and tap into… the Transient Student! University students who reside in our community during the summer months can take summer classes at Lone Star!

STEM Course Success and Persistence of LSC Students
Exploratory research using PowerBI that examines the persistence success of students in STEM courses across the LSC system, with focus on factors such as age, gender, ethnicity, matriculation status, mode and time of course delivery in academic courses.

Engagement in Online Courses
What contributes to a successful student outcome in online classes? Is the difference found in the content, the assignments, instructor engagement, or something else? An exploratory project to compare and contrast teaching strategies employed in high-achieving and low-achieving online classes in Biology, Government, and English courses over the past three years.

Stories of the LSC Corequisite Model
Unveiling the first semester of the LSC corequisite model. Focused on Fall 2018 First Time in College (FTIC) students for the corequisite pairings of ENGL 1301 (with 0119 or 0219) and MATH 1314 (with 0314). Our data-enforced analysis and first-hand testimonials illuminate the influencing factors, risks, and strategies.

Tools and Software

- All tools were locally available without additional cost to the department
  - Excel
  - Microsoft Power BI
  - Cloud Reporting
  - On-Demand Reports and Dashboards
  - IR Ad-Hoc Data Requests
- Participants supplied their own (LSC) computer
- Freeware version of SPSS, when needed
- Survey tools
- Sourced texts from AIR, LSC Library, Dept Training Material

Data Sources

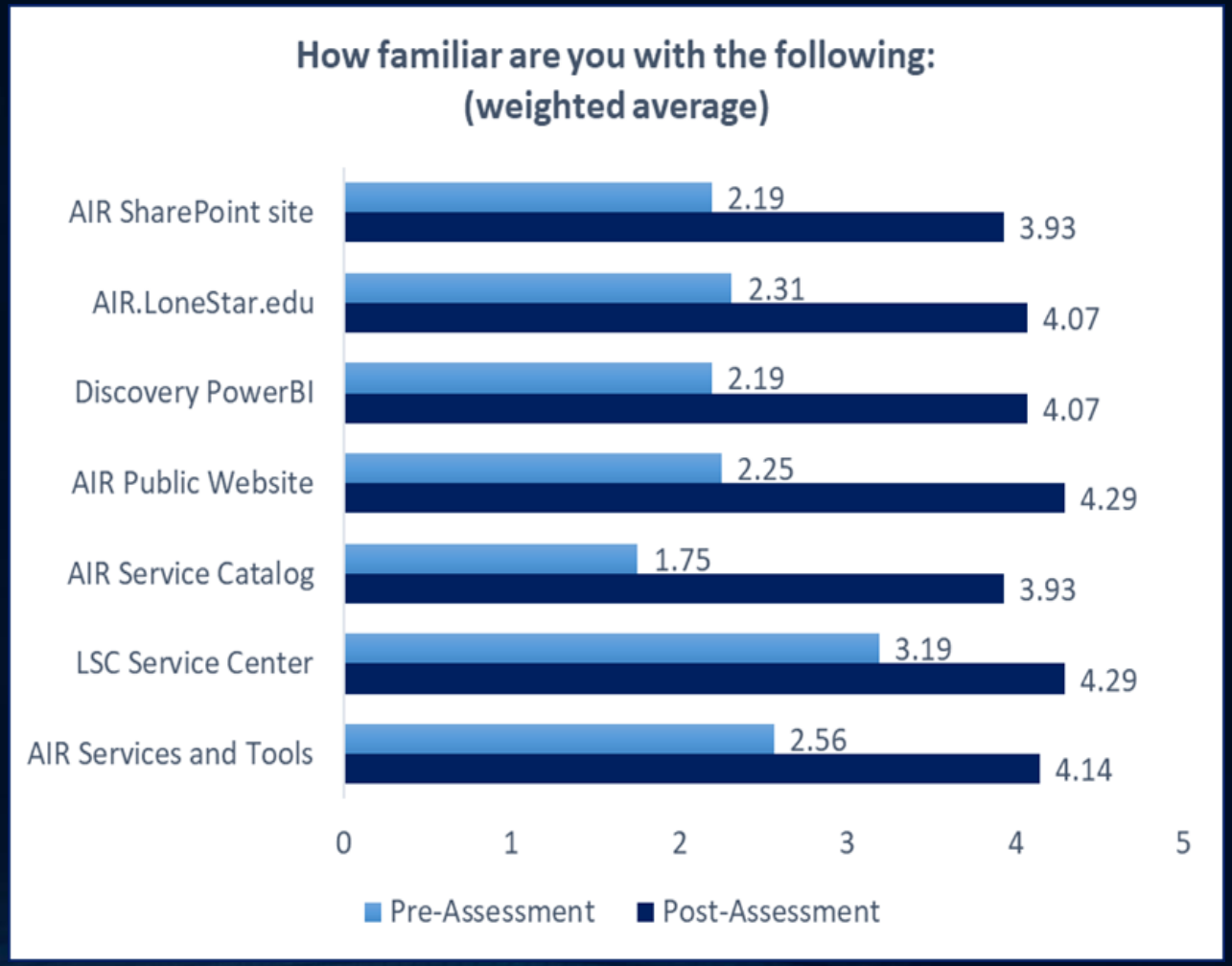
- Data Sources
  - Internal Sources (e.g. Campus Solutions [LSC ERP])
  - External Sources
    - THECB
    - TEA
    - IPEDS
    - National Student Clearinghouse
    - Census Bureau

Other Resources

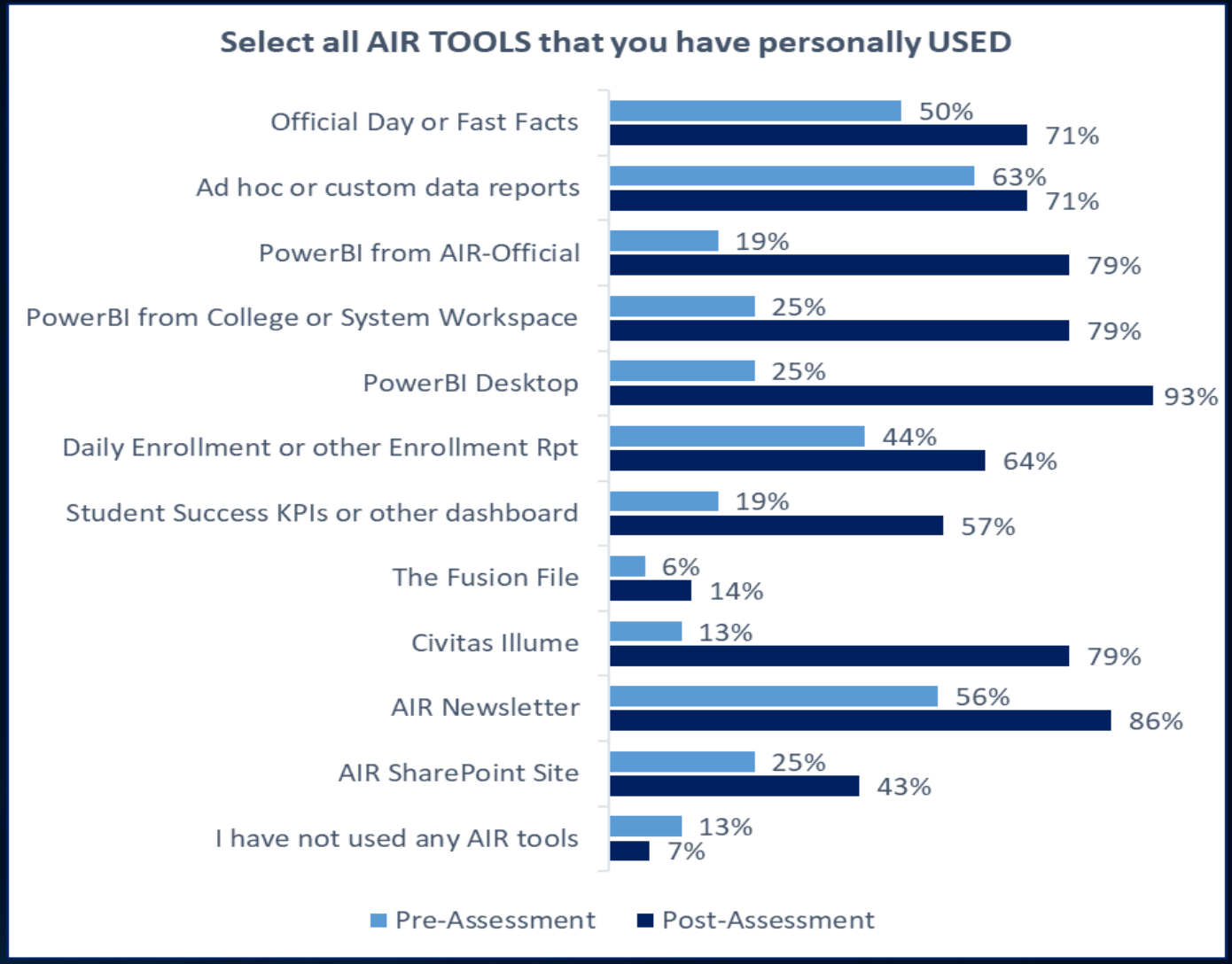
- All training done by LSC faculty and staff
- Training provided at central location, LSC System-Office
- Costs to Department- Data Institute is low-cost
  - Staff time for development, prep, and teaching
  - Awards given at graduation
  - Luncheon provided at graduation

2018 First Cohort Assessment

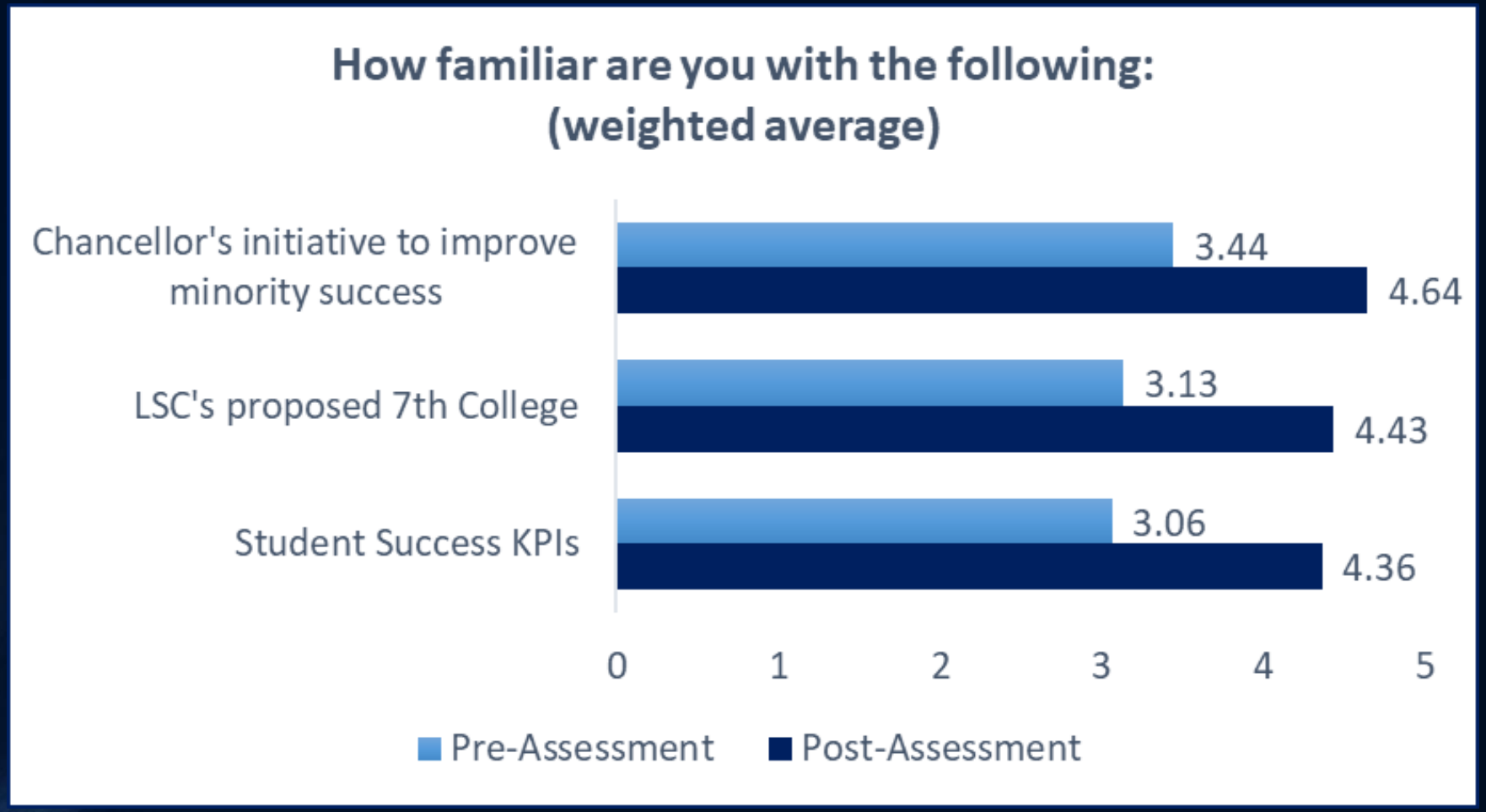
- 16 Fellows selected from 115 applicants



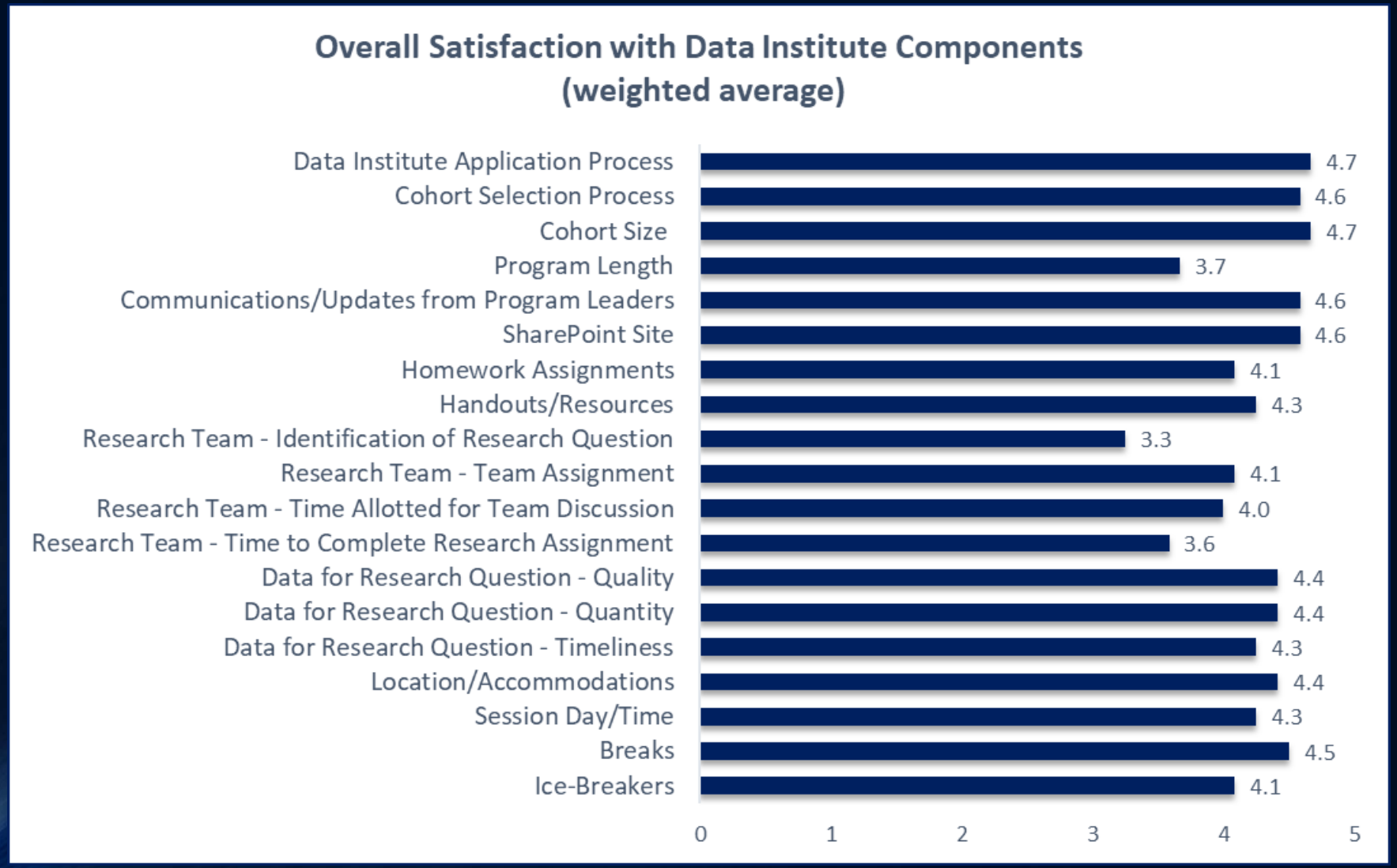
2018 First Cohort Assessment



2018 First Cohort Assessment



2018 First Cohort Assessment



2018 First Cohort Assessment

- 100% of the cohort completed the semester.
- Information generated in final research projects was used in the SACS accreditation proposal for LSC-Houston North, Lone Star's newest college.
- Four research groups asked to present at LSC-Montgomery's Data Camp
- Participants:
  - 1- Submitted proposal to Minority Serving Institution Convening at Richland College
  - 2- Applied for open IR analyst position. 1 was hired as a college IR analyst
  - 1- Started a Doctoral program and credited participation with feeling more confident about working with data
  - 2- Asked to join college data teams

2019 Second Cohort

Based on first cohort feedback

- Revised selection criteria
- Added sessions
- Reduced topics covered
- New selection process for research groups
- Broader research topics
  - 1 data model used by leadership at a national conference
  - 1 fellow hired by IR as an analyst II
  - Several fellows rose within the college and actively promote data-based decision making

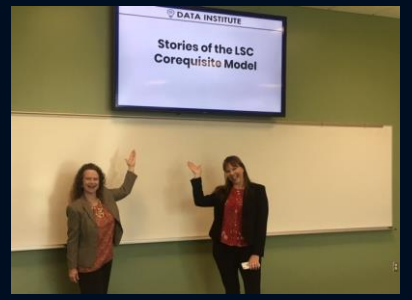
2020 Third Cohort

- Create Steering Committee
- Continue curriculum development
- Require beginning training in AIR tools and data
- Use data generated in long-term/in-depth studies
- Interrupted for 1 year then completed with abbreviated sessions and graduation

2022 Fourth Cohort

- Expanded to 20 Fellows from 8 campuses and 2 system offices
- Continue curriculum development
- Enhanced panels and invited alumni to present to cohort
- Implemented dedicated data coach from within IR to each research team
- 58 applicants from all levels of leadership, staff, and faculty

Data Institute Fellows



Questions?

Analytics and Institutional Research

DATA INSTITUTE

CHRISTOPHER J. REID
Sr Manager, Institutional Research
Lone Star College
Christopher.j.reid@LoneStar.edu