

LSAMP Data Science Internship



Isaias Velasquez & Benjamin Broadley

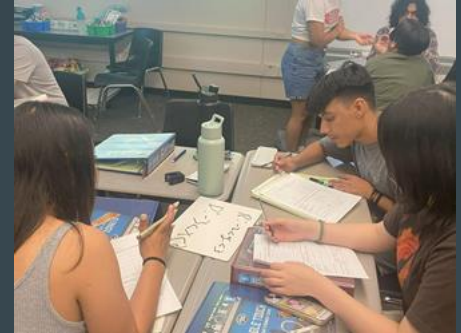
Outline

1. What is LSAMP?
2. Data Issues for LSAMP
3. Collecting Data for LSAMP's
 - a. Understand what is needed for reporting
 - b. Creating digital surveys/applications
 - c. Data Entry
 - d. Needing and requesting more data
4. Current Status



Louis Stokes Alliance for Minority Participation (LSAMP)

- LSAMP is a support program to increase the number of underrepresented students who receive bachelors degrees in STEM.
- The Summer Calculus Boot Camp (SCBC) is a program for incoming CSU, Chico freshmen, transfer students, and continuing students designed to improve their problem-solving abilities in a collaborative learning environment conducive to success in STEM.
- The data collected by/for the program is being used for required WebAmp reporting purposes.
- Funding comes from the National Science Foundation (NSF) and the Chancellor's Office of the CSU.



Program's Data Issues



Major Issues:

- Previous leadership didn't implement a systematic approach to collecting and reporting data.
- No digital data was previously available

Our Role:

- Assisting the new director develop & streamline data collection process
- Creating digital copies of all previous hard copies of data

Step 1: Understand What is Needed for Reporting

- Reporting for LSAMP is done through WebAMP
- Not needing to do multiple years of reporting.
 - Previously, students did not keep track of when they joined the program, switched majors, etc.
- The IR request is to help us with determining the demographic information
 - Who are still in the program? students' degree progress? etc.
- The ALEKS data, our funding has been cut back over the past 5 years.
 - ALEKS data and math course data can help us make a case for more funding and support.
- A goal of the program would be to make a comparison of the LSAMP students with a similar population to gain an idea of the effectiveness of the program



Steps 2: Establishing Digital Surveys & Data Entry

- We took the paper copies of the LSAMP Application and SCBC Application, and made digital forms.
 - Streamlines data collection
 - Assists with future data analysis and needs
- Manually transferred hardcopy LSAMP application data to digital forms



California State University Louis Stokes Alliance for Minority Participation Program (CSU-LSAMP) APPLICATION

Established in 1993-1994, CSU-LSAMP is an alliance of the 23 campuses of the California State University (CSU) system which supports a coordinated and comprehensive system-wide approach to broadening participation in science, technology, engineering and mathematics (STEM) disciplines. Each of the CSU campuses has a CSU-LSAMP program that offers an array of activities and services designed to improve retention and graduation of undergraduate students in STEM. In addition, CSU-LSAMP seeks to increase the number of CSU-LSAMP students who enter STEM graduate programs.

To be eligible to participate in CSU-LSAMP, students must:

- Be a U.S. Citizen or Permanent Resident.
- Be involved in a participating campus in an undergraduate major in a STEM discipline or have expressed an interest in pursuing a STEM baccalaureate degree.
- Be an individual who has based or bases social, educational, or economic barriers to careers in STEM.
- Each CSU-LSAMP campus program may have additional eligibility requirements. Please see the Campus Coordinator.

I. General Information

Gender:
 Male
 Female

Name: Last First Middle

Address: Street City Zip Code

Telephone: Home Email:

Date of Birth: Place of Birth: City, State, & County

Social Security #: Student ID #:

Citizenship: U.S. Citizen Permanent Resident
 If applicable, Permanent Resident Registration #:

Please mark one of the boxes provided for both "Ethnicity" and "Race."

Ethnicity (for statistical purposes only): Hispanic or Latin American (Spanish, Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish descent or origin, regardless of race) Decline to State

Race (for statistical purposes only): Black or African American - a person having origins in any of the black race groups in Africa American Indian - a person having origins in any of the original peoples of North, Central, or South America, including Alaska or Hawaii Native Hawaiian or Other Pacific Islander - a person having origins in any of the original peoples of Hawaii, including the Hawaiian Islands American Indian - a person having origins in any of the original peoples of North, Central, or South America, including Alaska or Hawaii

Printed for the CSU-LSAMP Program is provided by the National Science Foundation, 4803-283830 and the California State University's Office of the Chancellor.



NSF CALIFORNIA STATE UNIVERSITY LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION PROGRAM (CSU-LSAMP)

CSU-LSAMP Application

Established in 1993-1994, CSU-LSAMP is an alliance of the 23 campuses of the California State University (CSU) system which supports a coordinated and comprehensive system-wide approach to broadening participation in science, technology, engineering and mathematics (STEM) disciplines. Each of the CSU campuses has a CSU-LSAMP program that offers an array of activities and services designed to improve retention and graduation of undergraduate students in STEM. In addition, CSU-LSAMP seeks to increase the number of CSU-LSAMP students who enter STEM graduate programs.

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Step 3: Needing More Data

- The hard copies of data that were available to us was not enough for reporting purposes
- For this reason we had to reach out to other on-campus resources:
 - Institutional Research and Strategic Analytics (IRSA)
 - The Developmental Math Coordinator from the Department of Mathematics & Statistics

Step 3.1: Requesting Data from IR

Sending in a Ticket to IR:

- Developed a description of our data needs
- Create an excel sheet for IR to input data into

Set backs:

- The first ticket had issues
 - Some of the data requested was not available
 - aspects of the excel sheet needed improvement or clarification

The screenshot shows a web interface for a ticket request system. At the top, there is a navigation bar with the California State University Chico logo and a search bar. Below the navigation bar, there are tabs for 'Project Requests', 'Ticket Requests', 'My Favorites', 'My Recent', 'My Approvals', and 'Services A-Z'. The main content area is titled 'LSAMP Data Request for Reporting Purposes' and includes a 'Details' section with 'Account/Requirement' (Louis Stokes Alliance for Minority Participation) and 'Service' (Institutional Data Reports, Research, Analytics, and Surveys / IRSA: New Data Report or Dashboard). There are buttons for 'Withdraw Request', 'Add Attachment', and 'Add Alert'. A 'Description' section follows, containing detailed text about the request for data from the LSAMP program. At the bottom, there is a 'Requester' section with the name 'Benjamin Brodsky' and an 'Attachments' section with one file named 'LSAMP_IR_Request.xlsx'. A 'Read By' table shows the ticket's history.

LSAMP Data Request for Reporting Purposes New

Service Request ID: [redacted]

[Withdraw Request](#) [Add Attachment](#) [Add Alert](#)

Details

Account/Requirement
Louis Stokes Alliance for Minority Participation

Service
Institutional Data Reports, Research, Analytics, and Surveys / IRSA: New Data Report or Dashboard

Source
Website (Service Catalog)

Created
Tue 11/17/23 4:08 PM by Benjamin Brodsky

Last Modified
Tue 11/17/23 4:08 PM by Benjamin Brodsky

Description

This request is for a grant-funded internship program sponsored by Chico State's Center for Identity Communities. I am an intern for the Louis Stokes Alliance for Minority Participation (LSAMP) NSF-funded and Chancellor Office funded program, under the Program Director, Dr. Christine Herms. This information is for reporting purposes only. Information from the last 3 years is needed.

We are interested in information for two groups: student-level data for LSAMP Summer Calculus Boot Camp program students listed in the attached spreadsheet and aggregate data for comparable students who are not in the program. Comparable students should be defined as follows:

1. Enrolled in the same specified term as the LSAMP-NSC program students.
2. In the same major(s) as the program students.
 - a. E.g., if program students only came from Mechanical Engineering and Mathematics, then the comparable group should only come from those two majors.
 3. Have the same general demographic characteristics as the program cohort in terms of academic level, gender, race/ethnicity, the gen status, URM status, and nat status.
 4. E.g., if there are no males in the program cohort, then the comparison group should not contain males. Or, if there are no senior individuals in the program cohort, then the comparison group should not contain senior individuals.
4. Have taken the same math classes or have had the same required math classes as the program cohort.
 - a. E.g., if program students took Math 120 (or had to repeat Math 120), then the comparable group should have taken Math 120 (or had to repeat Math 120, if applicable).

Information requested for LSAMP-NSC program students (student-level data):

1. Persistence status in the following term: graduated, enrolled in the current term, or not enrolled in the current term.
2. Degree term (if graduated)
3. Demographic information: major(s), major department, gender, race, PEOS Ethnicity, PEOS Ethnicity URM flag, first generation flag, academic level, academic preparation
4. Satisfied majors: did they stay in STEM?
5. Major GPA.
6. Math GPA.
7. GE Math courses
8. Financial status.
9. Financial aid: do they utilize financial aid, and if so what type(s)?
10. Other programs they belong to.

Information requested for comparable students who are not in the programs (aggregate data):

1. graduation district
2. Persistence rates in the following term for each of these statuses: graduated, enrolled in the current term, not enrolled in the current term
3. Degree term (if graduated)
4. Demographic information: major(s), major department, gender, race, PEOS Ethnicity, PEOS Ethnicity URM flag, first generation flag, academic level, academic preparation
5. Satisfied majors: did they stay in STEM?
6. Major GPA.
7. Math GPA.
8. GE Math courses
9. Financial status.
10. Financial aid: do they utilize financial aid, and if so what type(s)?
11. Other programs they belong to.

Please format the data report with full details in each column to make reading into it easier.

Requester

BB Benjamin Brodsky
benjaminbrodsky@csuchico.edu

Attachments (1) [Sort By: Name Date](#) [+](#)

LSAMP_IR_Request.xlsx
Tue 11/17/23 4:08 PM Benjamin Brodsky

[Download](#)

Drag and drop attachments here to upload.
A maximum of 4 MB can be uploaded at once.

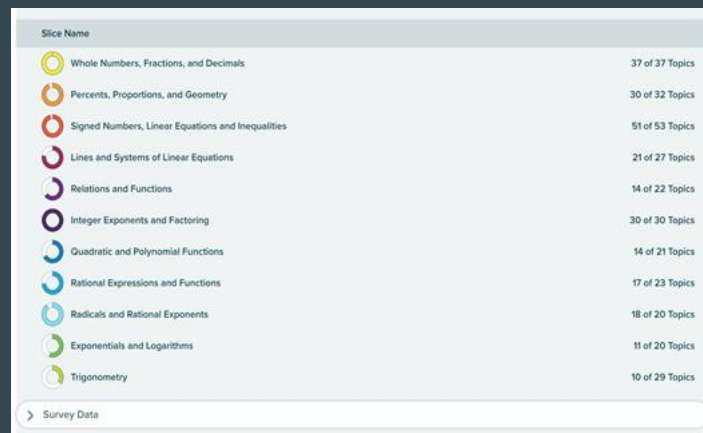
Read By (3)

Benjamin Brodsky	Tue 11/14/23 3:08 PM
Drug Wilson	Wed 11/08/23 1:18 PM
Sarah Thomas	Tue 11/07/23 5:01 PM

3.2: Requesting Aleks PPL Data

➤ Email was sent to the Developmental Math Coordinator to request Aleks PPL data with the intent of gaining insights about SCBC students such as:

- Test Scores
- Topics Mastered
- Time spent studying



Institution's Cut Scores	
Class Name	Cut Score
GE B4 Ready + Support (MATH 101, 105, 107, 110, or 116)	0 - 45
GE B4 Ready (MATH 105, 107, 108, 110, 185 or FINA 101)	46 - 60
GE B4 Ready STEM MATH 118 Trigonometry	46 - 60
GE B4 Ready STEM MATH 119 Precalculus	61 - 75
GE B4 Ready STEM MATH 120 Calc I or 109 Sur. of Calc.	76 - 100

Current Status

- Waiting to receive more Aleks PPL data for 2019-2023 cohorts, more time is needed to receive full reports for each student
- Our revised IR ticket is ready to be re-submitted now that the questions and issues of the first ticket have been addressed, more time is needed to receive the data for reporting purposes
- Future data collection has been made possible through a more streamlined and established system
- Data that was available has been input into our digital applications and is ready for future use

Ending Statement

We have learned a lot about the data collection process from this experience. Previously we had only experience working with an established dataset, but building up the data collection process for a program was a completely new experience. We are proud to say that we have helped establish and streamline the building blocks of LSAMP's data collect and analysis, and that our work will play a key role in future reporting and possibly future development of the program.



THANK YOU!