

# Exploring the Effect of Supplemental Instruction on Equity Gaps

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# Original Source Data (via CSU Chico Institutional Research)

- Course Detail.csv
  - $n = 43,803$
  - Row contains record for course sections from Fall 2012 to Winter 2022
- Student Profile Metric.csv
  - $n = 49,107$
  - Row contains one record per student matriculation for students enrolled from Fall 2012 to Spring 2022
- Student Program.csv
  - $n = 343,781$
  - Row contains records for each semester of each student's attendance who were enrolled from Fall 2012 to Winter 2022

# Original Source Datasets (acquired via CSU Chico Institutional Research)

- SLC Appointment.csv
  - $n = 78,229$
  - Row contains record for each day that a student went to an SI session, and how many they went to in that day (Fall 2015 - Spring 2022)
- Student Grade.xlsx
  - $n = 864,471$
  - Row contains final grade data earned for each course for each student from Fall 2016 to Winter 2022

# Data Preparation

## Student Level Analysis (n = 20,562)

- Only student records dated 2016 or later
- Only first-time freshmen
- Best attempt at isolating most recent student program record
- Approximately 35% of students in the programs dataset are not present in the profiles dataset. Therefore, these records have missing data for HS/Transfer GPA, one-year retention, and matriculation/graduation terms
- Records with missing data for the following attributes were dropped:
  - High School GPA
  - Attended Orientation Flag
  - STEM Major Flag
  - Full Time / Part Time Code
  - Academic Program

# Data Preparation

## Course Level Analysis (n = 5,637)

- Includes class size, average high school GPA, % first-gen in the class, % URM in the class, DWF rate, SI component flag, term year
  - These were calculated using the grades data provided by IR
  - Students with missing records for high school GPA were not included in the calculation
  - Students with missing records for URM and first-gen status were considered as not a member of these groups
- Course records from 2016-2019
- Course sections with less than 10 records of an SI visit during the semester were considered as sections without an SI-component
- Courses represented have a number less than 300 and are not a special number (x89, x99, etc.)
- To remove high calculated DWF outliers, class size  $\geq 20$

# Data Preparation

## Coarsened Exact Matching Analysis (n = 11,166)

- Student profiles, programs, and grades with course level information for courses with SI
- Only student records dated 2016 to 2019 who DID NOT DROP
- Best attempt at isolating most recent student program record
- Approximately 35% of students in the programs dataset are not present in the profiles dataset. Therefore, these records have missing data for HS/Transfer GPA, one-year retention, and matriculation/graduation terms
- Records with missing data for the following attributes were dropped:
  - High School GPA
  - Attended Orientation Flag
  - STEM Major Flag
  - Full Time / Part Time Code
  - Academic Program