



ANNUAL PROGRAM REPORT

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|-----------------------------|--|
| College | Science |
| Department | Statistics and Biostatistics |
| Program | BS Statistics, MS Statistics, MS Biostatistics |
| Reporting for Academic Year | 2017-2018 |
| Last 5-Year Review | 2010-2011 |
| Next 5-Year Review | 2018-2019 |
| Department Chair | Joshua Kerr |
| Date Submitted | 10/12/2018 |

I. **SELF-STUDY** *(suggested length of 1-3 pages)*

A. **Five-Year Review Planning Goals**

Present your planning goals from your last 5-year plan.

The five-year review includes planning goals for curriculum (3.1), students (3.2), faculty (3.3), and resources (3.4).

To summarize, the curriculum plans (3.1) include:

1. Updating our MS programs' curriculums
2. Offer required MS courses as graduate-only courses
3. Continue offering two sections of core graduate courses and grow our graduate program
4. Update our MS options to reflect demand
5. Enhance our BS program to reflect our SLO's and industry demands

The student plans (3.2) include:

1. Grow our MS programs
2. Enhance and grow our BS program
3. Recruit community college students into our BS program
4. Increase the use of computation in courses (at all levels)
5. Continue teaching schedules that accommodate working students
6. Raise funds to increase our scholarship and leadership funds

Faculty plans (3.3) include:

1. Anticipation of our junior faculty receiving tenure/promotion so that they can devote more time to program development and enhancement
2. Hire tenure-track faculty to replace recent attrition due to retirement and resignation
3. Hire faculty with expertise reflecting industry demands in Statistical Computation, Large Data Analysis, and Data Analytics
4. Increase our number of long-term lecturers

Resource plans (3.4) include:

1. Upgrade computers for tenured/tenure-track faculty and lecturers
2. Explore the use of “clickers” in introductory statistics courses
3. Increasing our current 1.0 staff support to our former level of 1.75 staff support.

B. Progress Toward Five-Year Review Planning Goals

Report on your progress toward achievement of the 5-Year Plan. Include discussion of problems reaching each goal, revised goals, and any new initiatives taken with respect to each goal.

Regarding 3.1 (Curriculum):

1. We listed a new tiered course (6260 / 4960 R Programming) two years ago. It was supposed to be offered that way for Fall (2015), but a glitch in the curriculum processing prevented that. It was listed as a “selected topics” course instead.
2. The required courses were all offered as MS-only during the recommended quarters. 6204 and 6304 were offered as tiered courses outside of the Fall Quarter. STAT 6250 was offered as tiered course in the Fall Quarter (MS Biostatistics students are required to take the course in the Spring Quarter).
3. Core courses required for both MS Biostatistics and MS Statistics (6204, 6205, 6304, 6305, 6509, 6501, 6502) were offered in two sections in their respective quarters.
4. The MS Statistics option changes have been deferred to semester conversion, but the name change for the “Statistical Computing” Option to “Data Science” Concentration was accepted and is effective Fall, 2018.
5. The BS Statistics now has a “Data Science” Concentration (effective Fall, 2018), which is more reflective of current demands.

Regarding 3.2 (Students):

1. The total number of MS students rose slightly this year over last year.
2. The total number of BS students was approximately the same this year as last year and about 50% more than the year before.
3. On top of previously-existing courses using computing (e.g., 6304, 6305, 6509), 6610 and 6620 brought a marked increase in the use of computation. We note that both 6610 and 6620 had such high demand that there were 2 sections of STAT 6610 offered in the Winter Quarter and 3 sections of STAT 6620 offered in Spring Quarter. These courses were tiered with undergraduate seminars that covered the material at a BS level. In Spring 2018, there were a total of 11 undergraduates in these courses which was the cap (most seats were reserved for graduate students). As of Fall 2018, these are no longer tiered. There are currently 52 seats filled in the non-tiered undergraduate Data Science courses this semester, representing a huge growth.
4. Core courses and most electives in our graduate program were offered after 6 pm. Many undergraduate, required, courses were also offered after 4 pm.
5. Fundraising did not increase this year.

Regarding 3.3 (Faculty):

1. Professor Chatterjee was promoted to Associate Professor and received tenure at the end of the academic year. Professor Kerr will apply for promotion AY 2018-2019. Professor Eudey began FERP in Fall, 2018. Professor Watnik is working as Interim Associate Dean, Undergraduate

Studies, beginning Summer, 2017.

2. The Department received approval to hire two positions during the 2017-8 academic year. Both searches were successful with the hiring of Assistant Professors Eric Fox and Li Zou.
3. We currently have three lecturers on 3-year contracts and two lecturers on a 1-year contract. Our lecturer pool is a little lacking resulting in issues staffing for Fall, 2018, and we anticipate having at least one more lecturer on a 1-year contract by Fall 2019.

Regarding 3.4 (Resources):

1. Some professors received upgraded computers this year.
2. Most professors received tablets for classroom and professional use.
3. Our staffing level has remained the same.

C. Program Changes and Needs

Report on changes and emerging needs not already discussed above. Include any changes related to SB1440, significant events which have occurred or are imminent, program demand projections, notable changes in resources, retirements/new hires, curricular changes, honors received, etc., and their implications for attaining program goals. Organize your discussion using the following subheadings.

Overview: Semester conversion and EO 1110 has had an incredible impact on our department. This has resulted in a significant increase in work for our staff, hiring TAs from our graduate student pool, and substantial revision of our curriculum at all levels to meet the needs of students.

Curriculum: With the implementation of EO 1110, the department now hires graduate students as TAs to teach newly developed support courses, beginning Fall 2018. With semester conversion, the department now offers a concentration in Data Science at both the undergraduate and graduate levels.

Due to semester conversion, substantial changes are in place to all levels of curriculum, starting in Fall 2018.

Students: Graduate students have an opportunity to teach support courses under EO 1110, beginning Fall 2018.

Faculty: Professor Eudey has started her FERP as of Fall, 2018. Professor Watnik is working as Interim Associate Dean, Undergraduate Studies, beginning in Summer, 2017, and no longer teaches.

Staff: With the implementation of EO 1110, an already strained staff has had a significant increase in workload, beginning in February 2018, and additional support is needed.

Resources: (*facilities, space, equipment, etc.*) Our Department's programs would greatly benefit from a dedicated computer lab and/or funds so that every graduate student has his/her own laptop computer.

Assessment: The department continues to carefully monitor the assessment of its programs, proposing curricular and advising changes as necessary.

Other: (e.g., major program modifications) No significant program modifications were attempted last year due to the impending semester conversion.

II. SUMMARY OF ASSESSMENT (suggested length of 1-2 pages)

A. Program Learning Outcomes (PLO)

List all your PLO in this box. Indicate for each PLO its alignment with one or more institutional learning outcomes (ILO). For example: "PLO 1. Apply advanced computer science theory to computation problems (ILO 2 & 6)."

Student learning outcomes for BS in Statistics are:

1. Apply basic computational skill in descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis (ILO 1 & 6)
2. Communicate to others results involving descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis (ILO 1, 2, 3, 4, 6)
3. Analyze data using appropriate statistical computer software and to interpret the results covering descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis. (ILO 1, 2 & 6)

Student learning outcomes for MS in Statistics are:

1. Apply statistical methodologies, including a) descriptive statistics and graphical displays, b) probability models for uncertainty, stochastic processes, and distribution theory, c) hypothesis testing and confidence intervals, d) ANOVA and regression models (including linear, and multiple linear) and analysis of residuals from models and trends. (ILO 1, 6)
2. Derive and understand basic theory underlying these methodologies (ILO 1, 6)
3. Formulate and model practical problems for solutions using these methodologies (ILO 1, 2, 6)
4. Produce relevant computer output using standard statistical software and interpret the results appropriately (ILO 1, 2, 6)
5. Communicate statistical concepts and analytical results clearly and appropriately to others; (ILO 1, 2, 3, 4, 6) and
6. Understand theory, concepts, and terminology at a level that supports lifelong learning of related methodologies. (ILO 1, 2, 3, 6)

Student learning outcomes for MS in Biostatistics are:

1. Apply biostatistical methods to data, including (a) descriptive statistics, probability and graphical displays, (b) distributions, hypothesis testing and confidence intervals, and (c) uncertainty, likelihood, modeling and error analysis; (ILO 1, 6)
2. Derive basic theory and communicate to others results involving biostatistical data analysis; (ILO 1, 2, 3, 4, 6)
3. Formulate problem solutions, produce appropriate computer code and to interpret results. (ILO 1, 2, 4, 6)

B. Program Learning Outcome(S) Assessed

List the PLO(s) assessed. Provide a brief background on your program's history of assessing the PLO(s) (e.g., annually, first time, part of other assessments, etc.)

For MS in Statistics we assessed SLO's 1, 2, 3, 4, 5, and 6.

For MS in Biostatistics we assessed SLO's 1, 2, and 3.

No SLO's were assessed for Statistics BS in 2017-2018 academic year.

C. Summary of Assessment Process

Summarize your assessment process briefly using the following sub-headings.

Instrument(s): *(include if new or old instrument, how developed, description of content)*

We have long used the culminating experience of the Comprehensive Examination along with feedback from alumni and community industry leaders in assessing our programs. Student learning outcomes and institutional learning outcomes were previously identified and mapped to specific courses for all three programs (in Spring 2014, refer to program curriculum maps).

This year we implemented quantitative assessment of the results of our Comprehensive Examination by mapping all but one of the SLO's for each of the MS programs to specific course problems on the MS exam. The comprehensive examination has a common (to both programs) 4-hour closed book examination and, four days later, program-specific 4-hour open book examinations. Questions on the examinations are identified with the required graduate courses. Rubrics were established for the outcomes and implemented.

The SLO's that were not evaluated by the Comprehensive Examination involve communication skills (SLO #5 for Statistics MS and SLO #2 for Biostatistics MS). It was decided that these SLO's are better addressed by term projects that involve communication (either a written project or presentation that is worth considerable weight in the grading

scheme of the course). For the Statistics MS SLO #5, STAT 6509 “Theory and Application of Regression” will be used for assessment. It should be noted that the assessment of MS SLO #5 is at the end of the first year of the program, while the other assessments are at the end of the program. For Biostatistics MS SLO #2, BSTA 6653 “Clinical Trials in the Pharmaceutical and Biomedical Industries” is used for assessment.

For the Statistics BS program STAT 4601 “Regression” was formally identified as the course to use for end-of-program assessment.

All implementations of academic assessment took place after the last faculty meeting of the academic year, hence faculty review and any changes to the curriculum will be done in the future. We anticipate that any changes we decide upon will be implemented in the semester conversion process as we transform the programs.

Sampling Procedure: We sample by gathering data from all students attempting to complete our capstone experience for all three programs. Specifically, the capstone experience for MS Statistics and MS Biostatistics is the comprehensive exam whereas the capstone experience for the BS Statistics is the regression course, STAT 4601. Unfortunately, we were forced to have a lecturer teach this course last year, making it difficult to implement assessment.

Sample Characteristics: All MS Statistics and MS Biostatistics at, or near, to the end of their program were identified. At the undergraduate level, all undergraduate majors completing STAT 4601 were sampled.

Data Collection: *(include when, who, and how collected)* The comprehensive exam is given twice a year, Fall and Spring. All tenure/tenure track faculty participate in the evaluation of student performances on this exam that are then used to evaluate the SLO’s. STAT 4601 is given every Spring for which the SLO’s identified are assessed by the instructor on record. Beginning this year, STAT 4601 has become STAT 432.

Data Analysis: We currently utilize Google Sheets to incorporate the rubrics that were established for the outcomes, in order to analyze the data.

D. Summary of Assessment Results

Summarize your assessment results briefly using the following sub-headings.

Main Findings: For the BS in Statistics, the faculty identified STAT 4601 “Regression” as the course to use for end of program assessment. The Statistics BS program has quite a bit of flexibility in the courses that are taken to complete the degree. STAT 4601 is a senior-level course, taken by all students, that has a written component to the course work. Thus, STAT 4601 is an appropriate choice for assessing the three SLO’s for the Statistics BS program.

For the MS in Statistics, our comprehensive examination is our primary method of assessing both master’s degree programs. The tests are written to test knowledge from the required core courses for each program. Typically, our pass rate is 75% or higher. For Spring 2018 the pass

rate for Statistics MS was 90% (n = 30).

We use a rubric to assess the individual ILO's as described above. Rubrics used were on a 5-point scale with 5 denoting exemplary demonstration of the SLO involved and 1 denoting no or very poor demonstration of the SLO involved. The results for Statistics MS program for 2017-2018 are shown in Tables 1, 2, and 3 below.

Table 1: Frequencies of Rubric-Scores for Statistics MS 2017-2018

| Rubric Score | SLO 1 | SLO 2 | SLO 3 | SLO 4 | SLO 6 |
|---------------------|--------------|--------------|--------------|--------------|--------------|
| 1 | 1 | 1 | 0 | 4 | 5 |
| 2 | 0 | 0 | 4 | 2 | 5 |
| 3 | 2 | 2 | 8 | 10 | 8 |
| 4 | 11 | 11 | 8 | 4 | 3 |
| 5 | 13 | 13 | 7 | 7 | 6 |
| Total | 27 | 27 | 27 | 27 | 27 |

Table 2: Summary Statistics of Rubric Scores for Statistics MS 2017-2018

| Statistic | SLO 1 | SLO 2 | SLO 3 | SLO4 | SLO 6 |
|---------------------------|--------------|--------------|--------------|-------------|--------------|
| Minimum | 1 | 2 | 1 | 1 | 1 |
| Maximum | 5 | 5 | 5 | 5 | 5 |
| Mean | 4.23 | 3.67 | 3.22 | 4.23 | 2.92 |
| Standard Deviation | 1.05 | 1.02 | 1.47 | 1.04 | 1.36 |

Table 3: Frequencies of Rubric-Scores for Statistics MS 2017-2018 SLO5

| Rubric Score | Frequency |
|---------------------|------------------|
| 1 | 0 |
| 2 | 1 |
| 3 | 9 |
| 4 | 18 |
| 5 | 38 |
| Total | 66 |

The Statistics and Biostatistics Department evaluates the results of the comprehensive examination twice per year. This information, along with student feedback, alumni feedback, and information about current industry demands for specific statistical skills has led to our recent modernizing of our curriculum.

This year we incorporated the information learned from the assessment of the individual rubrics from the tools used last year in our transformation of both programs for semester conversion.

For the MS in Biostatistics, our comprehensive examination is our primary method of assessing both master's degree programs. The tests are written to test knowledge from the required core courses for each program. Typically, our pass rate is 75% or higher. For Fall 2017 and Spring 2018 the pass rate for Biostatistics was 100% (n = 1 and n = 10 respectively).

We used a rubric (established in previous years) to assess the individual ILO's as described above. Rubrics used were on a 5-point scale with 5 denoting exemplary demonstration of the SLO involved and 1 denoting no or very poor demonstration of the SLO involved. The results for Biostatistics MS program for 2017-2018 are shown in Tables 1 and 2 below.

Table 1: Frequencies of Rubric Score for Biostatistics MS 2017-2018 (Total n = 11)

| Rubric Score | SLO 1 | SLO 2* | SLO 3 |
|---------------------|--------------|---------------|--------------|
| 1 | 0 | 0 | 0 |
| 2 | 3 | 0 | 0 |
| 3 | 1 | 0 | 0 |
| 4 | 3 | 7 | 2 |
| 5 | 4 | 4 | 9 |
| Total | 11 | 11 | 11 |

* SLO2 was from a course rubric and not all in the course took the Comprehensive Examination.

Table 2: Summary Statistics of Rubric Scores for Biostatistics MS 2017-2018

| Statistic | SLO 1 | SLO 2 | SLO 3 |
|---------------------------|--------------|--------------|--------------|
| Minimum | 2 | 4 | 4 |
| Maximum | 5 | 5 | 5 |
| Mean | 3.7 | 3.7 | 4.8 |
| Standard Deviation | 1.3 | 0.5 | 0.4 |

The Statistics and Biostatistics Department evaluates the results of the comprehensive examination twice per year. This information, along with student feedback, alumni feedback, and information about current industry demands for specific statistical skills has led to our recent modernizing of our curriculum.

This year we incorporated the information learned from the assessment of the individual rubrics from the tools used last year in our transformation of both programs for semester conversion.

Recommendations for Program Improvement: *(changes in course content, course sequence, student advising)*

Due to semester conversion, much of existing course content and course sequences have been altered. This has resulted in a drastic increase of student advising.

Next Step(s) for Closing the Loop: *(recommendations to address findings, how & when)* We will continue to monitor the evaluation of our SLO's to determine if additional advising or curricular changes need to be addressed.

Other Reflections: We have no additional reflections on assessment at this time.

E. **Assessment Plans for Next Year**

Summarize your assessment plans for the next year, including the PLO(s) you plan to assess, any revisions to the program assessment plan presented in your last five-year plan self-study, and any other relevant information.

The following year is the implementation of semester conversion. Most PLOs will be the same and assessment will be for comparable courses, for the most part. We are currently going through our 5-year review, AY 2018-2019, so we will formalize this process going forward through this medium.

III. **DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS**

Each program should provide a one-page discussion of the program data available through CAPR. This discussion should include an analysis of trends and areas of concern. Programs should also include in this discussion requests for additional resources including space and tenure-track hires. Resource requests must be supported by reference to CAPR data only. Requests for tenure-track hires should indicate the area and rank that the program is requesting to hire. If a program is not requesting resources in that year, indicate that no resources are requested.

A. **Discussion of Trends & Reflections**

Notable Trends:

Summarize and discuss any notable trends occurring in your program over the past 3-5 years based on program statistics (1-2 paragraphs). You may include 1-2 pages of supplemental information as appendices to this report (e.g., graphs and tables).

Please see Appendix A for graphs and tables supporting the following information.

The MS Biostatistics program has remained nearly constant in enrollment over the last three years. The MS Statistics program enrollment is once again on the rise after a small dip a few years ago. Of note is that the number of degrees conferred has continued to rise. Our BS Statistics program is also on the rise. Although flat this past year, we saw an almost 50% increase in undergraduate majors over the past 5 years.

The Department of Statistics continues to have the highest SFR in the College of Science. The department's FTEF % continues to shrink for tenured / tenure track while increasing for non-tenure / tenure track.

Reflections on Trends and Program Statistics:

Provide your reflections on the trends discussed above and statistics and supplemental information presented in this report.

The Department of Statistics and Biostatistics is a huge service department for the college and university with the highest SFR in the College of Science, and it's not close. Due to semester conversion and EO 1110, there are important elements that are not captured by these previous trends. To best serve our undergraduate students, we have overhauled our entire curriculum to also include a concentration in Data Science. Leading the development of this effort most naturally falls to the tenure/tenure track faculty which, due to our enormous graduate program, are in short supply. In addition, one of our full professors has just started her FERP while another has moved into a position among administration and no longer teaches, exacerbating the problem of finding tenured faculty to teach service courses, upper division courses and even major courses. At this time, almost all of our service courses, both upper and lower division, are taught by lecturers. About half of our undergraduate major courses are taught by lecturers.

Also not reflected in this data is the huge impact of EO 1110 on our department. Our commitment to providing service courses for the university is larger than ever. There has been considerable investment by the faculty in development of the new support-course model to accommodate the new freshmen who are no longer able to take remedial math, and are going straight into a B4 course. This requires a whole new pedagogy for those courses that didn't exist before. This means that a different population with a deeper level of needs is populating these service courses. Tenure/tenure track faculty should be leading this effort in those classes, but at this time there is only one such faculty member instructing at that level, minimally.

Request for Resources *(suggested length of 1 page)*

1. Request for Tenure-Track Hires

The Department of Statistics and Biostatistics is requesting 2 tenure-track searches at the level of Assistant Professor for the next academic year.

As mentioned above in notable trends, the proportion of undergraduate service and major classes being taught by lecturers is large. We have historically a good DFW rate in our STAT 1000 classes (STAT 100 under semesters). However, we anticipate that the rate will dip with students taking our course without having cleared remedial mathematics. Nonetheless, we anticipate a relatively good DFW rate in our B4 courses, including the brand new STAT 101.

Because of the increased demand on B4, almost all of the redesigned B4 courses that are meant to fall in line with the Chancellor's state-wide initiative under EO 1110 have lecturers as the instructors of record. These are the students with the least preparation and, hence, the most need. We would like to hire a tenure-track faculty member who has a background related to Statistical Education who can help continue the development of new and current pedagogies to best serve our undergraduate population. Having such a person involved in the B4 and other undergraduate courses will provide students with a very positive, quality, experience that will help to grow the university's overall retention and could enhance our undergraduate major program.

Specific to the graduate level, we have two programs with about 120 students combined. Serving this size of population has continued to result in hiring lecturers to teach even at this level, for lack of tenure/tenure-track faculty. We have a very good reputation in the Bay Area for our graduate

programs and the students they produce. We would like to have the resources to continue to offer outstanding programs that put CSU East Bay in such a good light.

According to the CSUEB Dashboard data (trends can be found in Appendix A), the Department of Statistics and Biostatistics has high FTES, low FTEF, resulting in the highest SFR in the College of Science. Lowering SFR can benefit students in many ways, allowing for individual attention, better communication, and better recruitment and retention. Additionally, increasing tenure-track density should benefit not only our majors, but other departments and programs that we serve.

Without these searches, we will not have the ability to meet the needs of our undergraduate, graduate, and service-level students. Having lecturers dominate these service courses, teaching many of our major courses and even some graduate courses, with such a high SFR, is a detriment to the university's mission on education.

2. Request for Other Resources

At this time, we are leveraging EO 1110 efforts to support many curricular innovations and support structures such as Supplemental Instruction and Learning Assistants. We hope to continue getting assigned time for coordination of the new B4 curriculum.

Appendix A

III

A. Discussion of Trends & Reflections

Notable Trends:

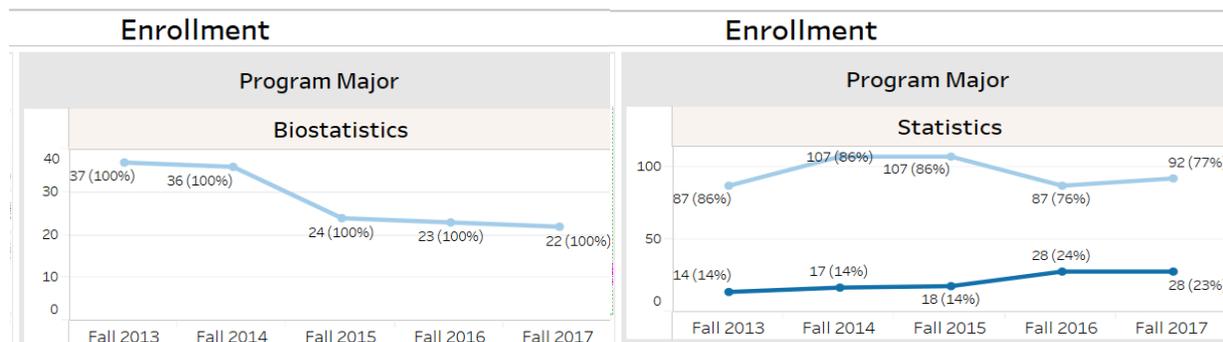
You may include 1-2 pages of supplemental information as appendices to this report (e.g., graphs and tables).

Tables of enrollment for Fall 2017 are broken down by race/ethnicity and sex.

| Fall 2017 | Biostatistics MS (%) | Statistics BS (%) | Statistics MS (%) |
|------------------------|----------------------|-------------------|-------------------|
| Asian | 7 (32) | 7 (25) | 23 (25) |
| Black/African American | 2 (9) | 0 | 1 (1) |
| Hispanic/Latino | 1 (5) | 7 (25) | 8 (9) |
| White | 6 (27) | 6 (21) | 15 (16) |
| Unknown | 2 (9) | 1 (4) | 8 (9) |
| International | 4 (18) | 6 (21) | 36 (39) |
| Multiple Races | 0 | 1 (4) | 1 (1) |
| Total | 22 (100) | 28 (100) | 92 (100) |

| Fall 2017 | Biostatistics MS (%) | Statistics BS (%) | Statistics MS (%) |
|-----------|----------------------|-------------------|-------------------|
| Female | 15 (68) | 11 (39) | 46 (50) |
| Male | 7 (32) | 17 (61) | 46 (50) |

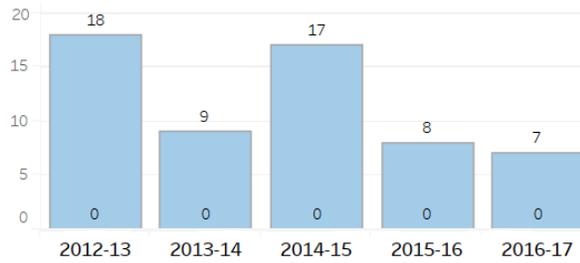
Enrollment Trend by Program



Degrees Conferred by Program



5 Year Trend: Biostatistics
(This chart changes based on College or Program Major selection)



5 Year Trend: Statistics
(This chart changes based on College or Program Major selection)



APR Coursework Data: Summary: Fall Term as of Census

FTEs, FTEF (instruction), and SFR of all state-side coursework

| College | Department | Term & Year | | | | | | | | |
|---------|------------|-------------|------|-------|-----------|------|-------|-----------|------|------|
| | | Fall 2015 | | | Fall 2016 | | | Fall 2017 | | |
| | | Ftes | Ftef | SFR | Ftes | Ftef | SFR | Ftes | Ftef | SFR |
| CSCI | BIOL | 570.8 | 16.2 | 35.3 | 575.3 | 18.0 | 32.0 | 588.3 | 19.5 | 30.2 |
| | CHEM | 375.1 | 15.4 | 24.4 | 365.8 | 15.4 | 23.7 | 359.9 | 14.9 | 24.2 |
| | CS | | | | 388.6 | 15.0 | 25.8 | 394.8 | 13.4 | 29.4 |
| | EESC | 200.3 | 6.3 | 31.7 | 236.7 | 7.5 | 31.7 | 192.9 | 7.5 | 25.7 |
| | ENGR | 180.8 | 7.1 | 25.6 | 157.7 | 8.1 | 19.6 | 184.0 | 7.9 | 23.3 |
| | MATH | 960.7 | 36.6 | 26.3 | 673.4 | 25.1 | 26.8 | 629.6 | 23.2 | 27.1 |
| | NURS | 896.1 | 36.7 | 24.4 | 992.3 | 42.0 | 23.6 | 1,038.3 | 44.0 | 23.6 |
| | PHYS | 235.1 | 7.7 | 30.7 | 227.6 | 8.4 | 27.0 | 211.8 | 7.8 | 27.2 |
| | PSYC | 519.8 | 15.1 | 34.3 | 496.6 | 16.1 | 30.8 | 572.2 | 17.8 | 32.2 |
| STAT | 351.8 | 9.2 | 38.1 | 378.8 | 10.4 | 36.3 | 366.9 | 10.0 | 36.6 | |

Click on a selection in the table above to filter charts further

