



**FOOTHILL
COLLEGE**

Program Review Chemistry

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Integrated Planning & Budget Taskforce

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Programs Strengths/Outcomes

- Dedicated and academically diverse full-time faculty with over 100 years of combined teaching experience.
- Top-notch lab facilities and equipment.
- Partnerships with Khan Lab School and East Side Preparatory High School.
- Students score in the 90th percentile on the ACS organic chemistry exit exam.
- **Four-year trends 2014/15-2018/19 are positive**
 - **Productivity:** Increased +5.3% with an FTES enrollment decrease of -10.3%. Follows Foothill's enrollment decline.
 - **Enrollment:** African American +42%, Latinx +39%, Asian +9.5%.
 - **Success:** Overall +6.4%, African American +7.5%, Latinx +11%, Filipinx +13%, Female +6.0%. (All higher than the College trends.)
 - **Equity Gap:** Down-1.5%/yr. Current gap of -13% compared to -20% in 14/15. A -13% gap is on par with Foothill's average.

Programs' Actions for Improvement

- Although the 5-year trends are encouraging (except enrollment) we have identified these areas for continued improvement.
 - **Pedagogy:** Bring into the class a more diverse perspective on chemistry. Guest speakers, scientist spotlights (Schinske), and highlight more real-world applications of chemistry.
 - **Learning Styles:** Decrease the emphasis on “rote” learning (testing) and include alternate evaluation criteria such as discussions, projects/portfolios, and service-learning opportunities.
 - **Scheduling:** Increase hybrid offerings to provide a more flexible, student-centered lab and lecture schedule.
 - **Supplemental Instruction:** Identify at-risk students early and offer supplement instruction as needed. Chem-220 course.
 - **Learning Communities:** Provide opportunities for students to meet and work together within the framework of common interests, STEM majors, health science, pre-professional, etc.
 - **Outreach:** Increase our Middle College enrollments, especially if we expand our online presence.

Chemistry Program Data Summary

2018-19

| | | | | |
|--------|------|----------|----------|-------|
| ENROLL | WSCH | FTES | FTEF/FTF | PROD |
| 3136 | 7577 | 510 | 15.4/8 | 492 |
| Female | Male | Targeted | Asian | Other |
| 58% | 41% | 36% | 39% | 25% |

5-year Average Trend Changes

| | | | | | |
|--------|-----------------|------------------|----------------|--------------|--------------|
| FTES | Overall Success | Targeted Success | Female Success | Male Success | Δ Equity Gap |
| -10.3% | +6.4% | +11% | +6.0% | +5.6% | -8% |

Compare Spring/Summer 2020 to 2019

| | | | | | | |
|-----------|---------------|-----------------|------------------|----------------|--------------|------------------|
| | ENROL | Overall Success | Targeted Success | Female Success | Male Success | Equity Gap |
| 2020 Δ | 1194 (-28) | 80% (+11%) | 75% (+15%) | 82% (+15%) | 77% (+6%) | -7.3% (-7.8%) |

Resources Needed

- **Data:** Student enrollment information on major, ethnicity, gender, age, etc. for each course. To inform instructors of their incoming student populations and identify the possible at-risk students.
 - Quarterly reports summarizing the aforementioned program review trends for departmental reflection, analysis and action.
- **Training:** Exposure to specific, proven, STEM oriented solutions that address the equity gap and success rates in science. Short-term and long-term solutions given from the faculty perspective.
- **Funding:**
 - Maintain the laboratory facilities and equipment.
 - Course specific embedded tutors to create a sense of community and give students an alternative contact for individual help.
 - Faculty reassign time to explore new pedagogy, curriculum, courses, and learning communities that addresses the equity gap.
 - New faculty hires that bring a more diverse ethnic background into the classroom.



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Questions