

BHES APRU 2019 – 2020  
Division Dean: Anita Muthyala-Kandula 2/10/20

The Biological, Health and Environmental Sciences (BHES) division is comprised of Biology, which includes Health and Nutrition; Environmental Sciences and Studies, Health Technologies, Medical Laboratory Technology, and Nursing. As a division we strive to ensure students success in transferring to a 4-year university, attaining the training needed for jobs in our career technical areas and/or life-long learning. We are also absolutely committed to the values of equity and access, retention and success for all our students in their pursuit of excellence. As a Division – staff, faculty and administrator - we strive towards exploring and utilizing strategies that continue to narrow the equity gaps in our programs.

Of notes this year, our Environmental Science department has formed a strong partnership with Campus Food Services and with the engagement of faculty and students is involved in teaching and learning about sustainable growth practices and supplying of produce to the campus dining center. The Environmental Studies department has also joined in partnership with Silicon Valley Chapter of the Climate Reality Project to raise awareness of the need for action to address the causes of climate change.

The CTE areas of Environmental Technology, MLT, HTEC and Nursing all received recognition for extremely positive impacts for students who graduate from the programs including

- An increase in earnings by 50% or more, based on a match to the state wage file
- Attainment of the regional living wage by 70% or more, based on a match to the state wage file,
- 90% or more are employed in a job similar to their field of study, according to the CTE Outcomes Survey.

**Enrollment:**

Enrollment trends in the BHES division are declining in very small amounts following the overall college and district trend of falling enrollment. The areas that have shown growth over the past year include within Biology - Health, Nursing and Environmental Science. Health classes doubled in enrollment in 17 -18 when we were able to hire a FT temporary faculty for one year. At this time they are still significantly increased over numbers 3 years ago (by 63%). Nursing has shown a small increase due to the introductory level classes – open to all students. It is heartening to also see an increase in ESCI classes given the dramatic changes we are seeing in climate change and environmental resource depletion. Careful and ongoing review and consideration of enrollment trends has allowed us to continue to show growth in these areas. Regular and comprehensive review of ongoing enrollment patterns allows us to divert FTEF from areas that are showing declines to areas that are actually showing growth. Student demand for online classes has shown an increase as has faculty interest in teaching. We will continue to monitor this situation and with thoughtful and deliberate planning hope to grow these course offerings while also putting in place the resources and tools to ensure student retention and success.

The Energy and Facility Management and Building Science program under enthusiastic leadership has continued to grow. Our allied health programs remain healthy as the job market continues to look very opportunistic for graduates in these fields.

The Biology departments has seen a loss in available full-time faculty due to sabbaticals and

leaves and this has caused us to offer fewer sections in these areas despite increased student demand and wait lists. We continue to see an increased demand for sections in our Bio 40 and Bio 6 series. As we continue to adjust FTEF, we hope to offer more sections of high demand classes and anticipate recuperating lost student enrollment.

### **Retention and Success rates:**

Our Division Counselor is going a long way in addressing our goal of continued work in decreasing the equity gap. We work as a team to identify, early on, and provide both the tools for faculty as well as the guidance and mentoring for students who may need additional assistance to succeed in the classroom

We have seen continued growth in enrollment in targeted student populations within the division over the past three academic years. This has been accompanied by increasing success rates in this population group. Success rates in non-targeted groups, also strong, have shown small gains as well. We will need more resources allocated to our departments and programs if we want to continue to increase the success rates of both targeted and non-targeted students groups and more importantly work on continuing to sustain the decrease in the equity gap. As a STEM division almost all of our courses are associated with lab course work. These lab courses require supplies and equipment in order to be offered. B budgets and lotteries are not adequate to cover these expenses and provide students with the hands on experience they require as well as is required from transferring institutions. In all departments additional resources are needed for recruitment, early student intervention, mentoring and guidance by faculty as well as peer tutoring.

### **Equity and Access:**

Over the past 3 years we have seen consistent and sustained gains in success rates for our underrepresented student populations. African American student success rates have increased from 62% to 67%. Our Filipinx success rates have increased from 80 to 81%. Our Latinx group has stayed consistent at 71%. Our Pacific Islander student group has seen rates increase from 58% to 70%.

The success rates in under-represented student groups can be credited to dedicated resource centers for the students in Environmental Science/Studies, Nursing, and Biological Sciences areas where students can get more hands on experience, practice and exposure to course materials.

Our CTE programs in Environmental Studies, Health Technologies, Medical Laboratory Technician and Nursing have strong connections with industry and clinical sites, enabling them to offer impressive externships, internships and job placement opportunities for our students.

The Biology Science Resource Center, Stewardship Resource Center and the Cheeseman Environmental Study Area are essential in tackling the issues of student access, retention and success and in closing the equity gap. These resource centers are content-specific areas where students can go, outside of regular class time, to review course materials, look at specimens, microscopes, models etc., to continue their exposure to scientific content as well as create communities of learning. The Cheeseman Environmental Study Area also serves as a powerful equity tool as it provides an on-campus field studies alternative to off-campus field trips. Biology students continue to ask for increased hours in the Biology Science Resource Center either through weekend or evening access for students.

**CTE labor trends:**

Our CTE programs are all supported by labor reports that show increased job demands in their fields: Energy Management Building Science employment; HTEC employment opportunities are projected to grow by 11.65% for medical assistants, 13.3% for phlebotomists, 8.2% for medical secretaries and 8.9 % for health information and medical records technicians; MLT employment opportunities show a growth rate of 22%; and in Nursing there are projected to be 1.1 million new jobs by 2022.

Energy management and building science had 100% job placement and was recognized by the State Chancellor's office for this achievement. Our Allied Health programs have partnerships with many clinical affiliates in the area including Stanford Hospitals and Clinics, Palo Alto Medical Foundation, Good Samaritan Hospital, Kaiser San Jose and Santa Clara, El Camino Hospital, and Spectra Laboratories. These sites provide externship opportunities as well as potential future job opportunities for our students.

**Division Needs:**

Areas of immediate concern are our allied health classes such as phlebotomy, medical labs, and simulation experts which absolutely need the presence of specialist and tutors to help with student retention and success. We could not run these labs without these specialists who are supported with funding from the SWP and Perkins. Another area of concern is the lack of needed budgetary support in the Biology department as more lab sections are being offered without any increase in B budget funding. The ability to stock our classrooms and lab rooms with supplies and technology is essential to continue to support the growth in enrollment. As we see more students in the class sections, equipment like microscopes and models face increased wear and tear and refreshing and replacing equipment is crucial to meeting curriculum demands. It also provides our students with the skills and expertise needed to be competitive in their future educational goals. The strong enrollment growth in the department must be supported by an increase in budgetary funding.

**SLOs/PLOs:**

The BHES faculty continue to engage in assessing student-learning outcomes at the course and program level. Departments continue to have meaningful discussions on student learning objectives & assessments, streamlining of curriculum and have reflected on these outcomes. These conversations are often a required part of CTE program accreditation. Peer tutoring, laboratory, and equipment needs were consistently identified as limiting factors in achieving desired outcomes. Increasing budgetary funding would go a long way in addressing these concerns.

**Vision for the Future:**

Based on occupation prospects, employment demands and job vacancies, average salaries, and *job satisfaction* - careers in the life sciences, health care, laboratory science, energy and resource management and pollution prevention fields continue to be extremely popular and a great vehicle for upward mobility for our socioeconomically disadvantaged populations.