Biological, Health and Environmental Sciences Division

**Annual Program Review 2021 – 2022**

**DEAN’S SUMMARY**

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The **Biological, Health and Environmental Sciences (BHES)** division is comprised of the

* **Biology** department, which includes **Health** and **Nutrition**;
* **Environmental Sciences and Environmental Studies** department,
* **Health Technologies (HTEC)** department,
* **Medical Laboratory Technology (MLT)** department,
* **Nursing** department.

As a division we aspire to excellence in teaching, career preparation and job training.

We work together to ensure students success in transferring to 4-year universities, 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 administrators - we strive towards exploring and utilizing strategies that continue to narrow the equity gaps in our programs.

The COVID 19 pandemic has had an enormous impact on the way we conducted instruction over the past two years. Our faculty in Nursing, HTEC and MLT were amongst the first faculty to return to campus as their subject matter content and accreditation requirements mandated onsite instruction. Both onsite instruction during a pandemic as well as online teaching required staff and faculty pivoting effectively to meet the demands of the times. We were able, with the help of college operations to provide students, faculty and staff with a safe environment to teach and learn. For our online teaching we were able to procure resources such as JoVE, Labster and Simbio to provide students with remote instruction which was still relevant and applicable to the real world.

In addition, faculty in our Energy Management and Building Science and Facility and Sustainable Building Management programs obtained licensed building controls software enabling students to use the extensive lab equipment installed at Kirsch, to experience the Human Machine Interface - a realistic controls system for a simulated building. The program allowed students to access district and college energy data for course work - securely and remotely.

The division has looked at innovative ways to engage with the larger campus as well as our neighboring community.

Through the Health and Life Sciences Village the division is engaging in quarterly “highlight department” activities exposing students to panelists and opportunities in various health care industries.

Our Health Technology department along with the Health area from Biology have started a partnership with local high schools to offer dual enrollment classes that offer high school students an opportunity at exposure to careers in the health care field.

**Enrollment**

Enrollment trends in the BHES division has increased over the past three years by 2% despite the overall college and district trend of falling enrollment. The areas that have shown growth over the past year include Biology, Environmental Studies and Nursing. Nursing has shown a 7% increase due to increased sections of the introductory level classes – open to all students. Given the catastrophic changes we are seeing worldwide due to climate change and environmental resource depletion, it is encouraging to see a 13% increase in Environmental Studies enrollment. 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. 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 Biology department has seen a growth in enrollment of 3% despite seeing a loss in available full-time faculty due to sabbaticals and Article 18. As a result, the department has offered fewer sections despite increased student demand and longer wait lists. We continue to see an increased demand for sections in our Bio 40 and Bio 6 series.

**Retention and Success**

We have seen continued growth in enrollment of our disproportionately impacted student populations within thedivision. This has been accompanied by increasing successrates in these student groups. Success rates in non-targeted groups, also strong, have shownsmall gains as well.

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| --- | --- | --- | --- |
| Department | Disproportionately Impacted | All Students | Equity gap |
| Biology | 75% | 81% | 6 |
| Environmental Science | 78% | 86% | 8 |
| Environmental Science | 64% | 77% | 4 |
| Health Technologies | 66% | 77% | 11 |
| Medical Laboratory Technology | 76% | 82% | 6 |
| Nursing | 85% | 88% | 3 |
| BHES division | 75% | 82% | 8 |

We will need more resources allocated to our departments and programs ifwe want to continue to increase the success rates of disproportionately impacted studentgroups 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 coursesrequire 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 peertutoring.

**Equity and Access:**

Over the past 3 years we have seen consistent and sustained gains in success rates for our

disproportionately impacted student populations. African American student success rates have increased from 66 to 72%. Our Filipinx success rates have increased from 80 to 82%. Our Latinx group have sustained their success rate at 73%. Our Pacific Islander student group has seen rates increase from 70% to 71%.

The success rates in disproportionately impacted student groups over the course of the pandemic can be credited to dedicated online resources, and in some cases hands on clinical and skills labs as well as structured tutoring for the students in our varioareas 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 24.5 % for medical assistant**s, **grow by** **26.7% for phlebotomists**, **grow by 19 %** **for medical secretaries** and **12.8 % 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 simulations which absolutely need the presence of specialists 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.

**Vision for the Future:**

The past two years have shown an immediate need for more employees in high paying positions in health care including nurses, laboratory technicians, medical assistants, phlebotomists and more. The devastating impacts of climate change and worldwide energy shortages have highlighted the demand for employees in rewarding careers in environmental conservation, preservation, pollution prevention, and energy management

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. The Biological, Health and Environmental Sciences Division is ready to meet the challenge of educating a new generation of students to meet these goals.