



ANNUAL PROGRAM REPORT

College	Science
Department	Nursing and Health Sciences
Program	Health Sciences
Reporting for Academic Year	16-17
Last 5-Year Review	2011 – 2012
Next 5-Year Review	2019 – 2020
Department Chair	Jason Smith (Associate Chair for Health Sciences)
Date Submitted	2017-10-20

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

A. Five-Year Review Planning Goals

1. Develop a healthcare leadership and management course to replace business management.
2. Increase tenure-track faculty from 3 to 8. Change: This goal was updated from 5 tenure track faculty to 8.
3. Develop more electives for Health Sciences students. Change: Specific courses dropped, see goal progress below.
4. Explore creating additional options, or post-baccalaureate certificate programs: Health IT and Global Health
5. Explore making Health Sciences a separate department from Nursing.
6. Develop Concord Campus as health sciences campus.

B. Progress Toward Five-Year Review Planning Goals

Goals 1 and 2

The program has completed goals 1 and 2.

Goal 3

In the transformed curriculum for semester conversion, the program has substantially expanded the offerings of electives for students and will meet the objectives of goal 3 in Fall 2018.

Goal 4

With semester conversion, the program will offer new concentrations for students that should meet goal 4 in Fall 2018. In Fall 2018, the program will offer concentrations in Health Policy and in Public Health. The program is also partnering closely with the Department of Earth and Environmental Sciences in offering a program for students to qualify to sit for the Registered Environmental Health Specialist (REHS) Program. The Health Sciences Program is also partnering with the Department of Computer Science as part of an NSF-funded project to offer a joint CS+HSC program for students to concentrate in health and data sciences.

Goal 5

The Health Sciences program has filed all necessary paperwork and, with approval of the Senate, will be a separate department in Fall 2018 meeting goal 5.¹

Goal 6

The Health Sciences faculty have focused on building one program on three campuses. Our Program's focus is to build a stronger Health Sciences identity among the students and faculty, as well as to present a unified image externally of the program as one program on three campuses.

C. Program Changes and Needs

Overview:

To maintain the program's progress and ensure short and long-term stability, further resources are required.

The Health Sciences program has undergone major changes since its last five-year review. Slowly increasing tenure-track density; supporting research and student achievement; and redesigning the curriculum have put the program on a strong foundation for future success. To maintain the program's progress and ensure stability, additional faculty and space are required to provide services to these students.

Curriculum:

The Health Sciences curriculum has been transformed to focus on health policy, environmental health, and public health. Courses will be delivered with a new and innovative problem-based learning approach.

The Health Sciences curriculum has been transformed for semesters. The administration and management option has been transformed into a health policy concentration; the community health option has been transformed into a public health concentration; the option for environmental health has been moved to the Department of Earth and Environmental Sciences as

¹ 17-18 CAPR 2

part of a partnership between the two programs to offer a concentration in environmental health that is approved as an Option V REHS program by CaDPH.

The pre-clinical option has been discontinued and a new path of electives has been greatly simplified for students interested in clinical careers.

The program has focused on innovation in the curriculum and has designed a program that will rely on a problem-based learning (PBL) design in the core courses. These courses, unlike more traditional courses, will provide intensive group experiences for students to focus on solving real-world problems. Problems will be developed in close consultation with an external advisory board.

The program is exploring options to offer a certificate or minor in health and computer science with the Department of Computer Science. As part of an NSF-funded project through San Jose State University, the Department of Computer Science and Health Sciences are working closely to meet the demands for more graduates trained in both health and data sciences.

The program is also exploring options in partnership with the Department of Philosophy to approve a set of philosophy electives on Spirituality, Health, and Humanities as part of an NEH funded grant awarded to Christopher Moreman, Chair of the Department of Philosophy.

Students:

More students are entering Health Sciences each year than are being graduated. Health Sciences students are enthusiastic and driven to secure jobs in the healthcare sector which remains the fastest-growing occupational group.

The Health Sciences program continues to struggle with high student headcount and high demand for courses. While we have continued to support student success and timely graduation, we have been unable to keep up with incoming students each year. The interest in Health Sciences is being driven by career opportunities in the field and increasing demand from students. The Bureau of Labor Statistics has identified health and health-related fields as growing at a faster rate than all other occupations through 2024:

Healthcare support occupations and healthcare practitioners and technical occupations are projected to be the two fastest growing occupational groups, adding a combined 2.3 million jobs, about 1 in 4 new jobs. [...]The combined share of employment for these two groups is projected to increase from 8.3 percent of all jobs in 2014 to 9.2 percent of all jobs in 2024.²

Given the projected demand in the industry for jobs related to healthcare, we anticipate seeing sustained or growing demand for our program.

² Andrew Hogan and Brian Roberts, "Occupational employment projections to 2024," *Monthly Labor Review*, U.S. Bureau of Labor Statistics, December 2015, <https://doi.org/10.21916/mlr.2015.49>

Faculty:

While Health Sciences has added tenure-track faculty, the program is still short of necessary faculty to support the program.

Health Sciences has ten tenure-track faculty and is currently in an active search for two more tenure line faculty. We have 19 part-time lecturers and 3 full time lecturers.³ Dr. Andrew Kelly and Dr. Ryan Gamba joined the faculty this year. Dr. Andrew Kelly specializes in health policy, Dr. Ryan Gamba in epidemiology and public health. Our request for new tenure-track faculty is in Section III.B of this report.

Staff:

Health Sciences does not currently have adequate staff support but has been promised these resources.

Health Sciences is currently supported by a part-time ASC II and part-time ASA II. In 17 – 18, contingent on college budget approval, the program will be supported by a full-time ASA II and full-time ASC II.

Resources:

Office, lab and instructional space are the greatest resource challenges facing Health Sciences.

Health Sciences has insufficient office space. While all tenure-track faculty currently have offices, there are no open offices in the college for the new faculty anticipated in Fall 2018. Lecturer faculty currently share offices. The program needs additional office space for the new tenure-track faculty that will be hired in Fall 2018 as well as for the additional tenure-track faculty requested in this report.

Health Sciences has no research labs for faculty. We anticipate hiring two new environmental health faculty to begin in Fall 2018. These faculty will likely require research lab facilities for their work.

The Health Sciences semester curriculum, which will be using problem-based learning, will require an increased investment in instructional space that provides configurable tables and chairs for intensive team work, multiple white board spaces, and configurable environments for student-led learning.

³ Office of Academic Affairs, Cal State East Bay, 20171005-APR-data final, 20171005-APR-HealthScience-2012-2016.xlsx. (Fall 2017).[hereinafter *OAA Data*]

Assessment:

See section II.

Other:

The separation of Nursing and Health Sciences will support student success and improve both programs.

The Health Sciences and Nursing programs are preparing to separate into two new departments. This separation has been planned for three years and is supported by the Health Sciences and Nursing faculties.

Health Sciences faculty have been active in research collaboration efforts at Cal State East Bay.

The Health Sciences program has increased its emphasis on research and interdisciplinary activity. Active research is critical to effective teaching in Health Sciences as the field is rapidly changing as a result of technological development and a constantly shifting policy landscape. Health Sciences faculty have led the development of the CSU Health Collaborative, are active on the College of Science Committee on Research, and are committed to the securing external funding for faculty research that involves students.

II. SUMMARY OF ASSESSMENT

A. Program Learning Outcomes (PLO)

PLOs: Students graduating with a Health Sciences Bachelor’s Degree from California State University, East Bay will be able to:	ILO Alignment
1 Integrate and synthesize knowledge from general education courses and courses in the biological, physical, social and health sciences.	1, 6
2 Communicate effectively to solve problems in health sciences	2
3 Work effectively in teams, partnerships and larger groups toward accomplishing goals in health care.	4
4 Apply ethics and professional standards to interactions with colleagues, supervisors and staff, diverse and multicultural clients, and with the general public.	3, 5
5 Evaluate scientific and policy research to solve problems in the health sciences.	1, 6

B. Program Learning Outcome(s) Assessed

Two PLOs were assessed in 2017:

- Communicate effectively to solve problems in health sciences (PLO 2)
- Evaluate scientific and policy research to solve problems in the health sciences (PLO 5)

PLO 2 (herein “Written Communication”) was assessed for the first time, whereas PLO 5 (herein “Critical Thinking”) was reassessed because of suboptimal results found in 2015. Health Sciences had implemented changes in 2016 to address these issues. The reassessment was conducted in 2017 to allow at least one year of implementation of the changes to determine if improvements were observed for this specific objective. These changes are summarized in a recent publication by Professors Ganesh and Smith.⁴

C. Summary of Assessment Process

PLO2: Communicate effectively to solve problems in health sciences (Written Communication)

Instrument(s): CSUEB Communication ILO Rubric

Sampling Procedure: Random sample of 50 papers

Sample Characteristics: Students who completed HSC 4500

Data Collection: Final Reports submitted by students in Spring Quarter of 2016

⁴ Ganesh, Chandrakala, and Jason A. Smith. "Using Multiple High-Impact Practices to Reduce Bottlenecks and Improve Student Learning in an Undergraduate Health Science Program." [In en]. *Journal of the Scholarship of Teaching and Learning* 17, no. 2 (2017-05-11 2017): 74 - 84.

Data Analysis: Basic frequencies of scores assigned by two reviewers per paper across major domains of scoring rubric (100 total reviews by 12 reviewers)

PLO5: Evaluate scientific and policy research to solve problems in the health sciences (Critical Assessment: Re-assessment)

Instrument(s): HSC Critical Thinking Rubric

Sampling Procedure: Random sample of 55 papers

Sample Characteristics: Students who completed HSC 3550

Data Collection: Final papers submitted by students in Spring Quarter of 2016

Data Analysis: Basic frequencies of scores assigned by two reviewers per paper across major domains of scoring rubric (110 total reviews by 12 reviewers)

D. Summary of Assessment Results

PLO2: Communicate effectively to solve problems in health sciences (Written Communication)

Main Findings

The overall average performance of students reviewed was a 17.38 out of a 24-point total (72.4%). Among the six domains assessed, there was considerable quality exhibited (>3 on 4-point scale) in two domains (audience awareness, presentation of supporting ideas), and above-satisfactory performance (2.95) among another two others (organization/cohesion/clarity, statement of purpose/thesis). The two poorest average scores were found for language usage/structure and mechanics.

Recommendations for Program Improvement

In general, students exhibited strengths in understanding audience in order to deliver tailored written communication; this is a key competency of the HSC Program. In addition, having a thesis statement and supporting assertions with evidence in a clear and organized fashion were demonstrated by students in sufficient measure. Not surprisingly, students had trouble with technical aspects of writing, which is a concern among most college students irrespective of major and institution. Upon transformation of the HSC curriculum during semester conversion, the Program will emphasize training and practice of writing across multiple classes; any course section with less than 35 students will have an intensive writing exercise in which attributes of effective written communication, particularly mechanics and usage of language, will be highlighted and incorporated into a major deliverable.

Next Step(s) for Closing the Loop

Given the paramount importance of written communication for health professionals, it is important that this objective be continually assessed in reasonable intervals. Specifically, it is recommended that another evaluation occur after implementation of at least two years of the transformed curriculum, using artifacts from key courses reflecting distinct junctures in the HSC major (including concentrations).

PLO5: Evaluate scientific and policy research to solve problems in the health sciences

Main Findings

Students demonstrated satisfactory performance in critical thinking with an average overall score of 15.85 on a 24-point scale (66%), with values for each specific 4-point domain ranging between 2.39 (acknowledging alternate viewpoints) and 2.83 (explanation of issues).

Recommendations for Program Improvement

It merits noting that the standardization of courses, including mandatory training for instructors as well as uniform syllabi, activities, deliverables, and assessments, did result in positive changes in critical thinking abilities of students. To illustrate, the overall score increased by 8.64% from the prior assessment, with all individual criterion exhibiting positive changes ranging from 1.67% (ability to evaluate evidence) to 25.12% (conclusions and implications). It is clear that, during the short time frame in which courses were redesigned, implemented, and refined, the effects of these changes were all positive.

Next Step(s) for Closing the Loop

Given the importance of critical thinking in the health professions, the transformed HSC curriculum has employed an innovative pedagogical approach involving coursework scaffolded in a problem-based learning environment. This strategy prioritizes critical thinking insofar as it stresses the development of solutions to real-world problems, as identified by health professionals who practice in the relevant fields of HSC. Because of the considerable time required to fully implement the transformed curriculum, it is recommended that critical thinking be assessed only after students have been able to be exposed to the HSC major under semesters in its entirety, which may take at least four years.

E. Assessment Plans for Next Year

Health Sciences will be assessing team work in AY 17 – 18.

III. DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS

A. Discussion of Trends & Reflections

Notable Trends:

Success indicators and student demographics are positive with the exception of the achievement gap between URM and non-URM native students.

Health Sciences is making progress in offering sections to students, reducing the achievement gap among transfer students, and improving overall graduation rate.⁵ There is a noticeable achievement gap however among URM and non-URM native students. Health Sciences will consider this issue and ways to address it.

Reductions in headcount and improved graduation rates are likely the result of non-sustainable efforts. Additional student support services are needed in the College of Science.

We believe that headcount growth has slowed as a result of a greater emphasis on reducing bottlenecks; adding courses; and intrusive advising. We are not confident that these techniques can continue to show positive results as they likely represent “easy fixes.” Instead, greater attention must focus on pedagogy and improved instruction and student support.

Faculty in Health Sciences are already providing extensive advising to large numbers of majors. Each tenure track Health Sciences faculty has an advising assignment of 180 Health Sciences students. This is not sustainable in the long-term. Additional resources in the Student Service Center in the College of Science are critical.

Health Sciences is one of the largest five programs both in terms of headcount and FTES.

While the program is improving course offerings and programs for students, it remains the second largest program at CSUEB with 1249 students in 2016.⁶ Only the Business Administration program, which is composed of three departments, is higher with 2466 majors.⁷ Taking each Business Administration department separately and averaging that headcount among the three, Health Sciences would be the largest program at Cal State East Bay. On measures of FTES rather than major headcount, Health Sciences remains in the top five.⁸

⁵ OAA Data.

⁶ OAA Data.

⁷ Business Administration 2466, Health Sciences 1249, Psychology 988, Biology 828, and Criminal Justice 814. (OAA Data).

⁸ Math and CS combined 1057.5; Business Analytics 858.7; English 802; Kinesiology 596.7; Health Science 588.1. (OAAData).

Health Sciences % FTEF tenure track and tenure-track density is too low.

The FTEF of tenure track faculty in Health Sciences is currently at 42%. The tenure density calculated as percentage of FTES delivered by tenured and tenure-track faculty is also too low at 32%. Health Sciences, along with Mathematics and Nursing, has the lowest percentage tenure track FTEF in the College of Science. To become a stable and effective program, Health Sciences must increase the number of tenure track faculty.⁹ Seventy-five percent is the recommended goal of the CAPR Academic Program Review Procedures and is a measure of an effective program on the CAPR program review procedures.

Reflections on Trends and Program Statistics:

While Health Sciences has made significant improvements in providing its program, there is still need for real investment in the future of this program to ensure that the faculty are supported in their research endeavors and can provide up-to-date and current instruction in a highly divergent and rapidly-changing field. Additional faculty and resources will also enable not only Health Sciences but Cal State East Bay to meet continued and projected student demand in this area and is a material component of Cal State East Bay's enrollment management. Given the size of the Health Sciences program, further investment of academic resources not only supports the mission of Health Sciences but of the University.

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

1. Request for Tenure-Track Hires

Health Sciences is requesting two tenure-track hires. Our new curriculum has several areas of emphasis where we continue to be short of capacity. Both of these faculty will support the teaching and research missions of Health Sciences and are critical to the on-going success and stability of the program.

Assistant Professor of Health Policy

We seek one hire at the Assistant Professor rank to in the area of health policy. We are seeking a candidate with research / areas of focus in any of the following: payment systems; the social determinants of health; health reform; drugs and devices; and climate change and its health policy implications. Preference for candidates with expertise in the analysis of large data sets/health data. This hire could cover the following courses: HSC 400, HSC 499C, HSC 325, HSC 465, HSC 480.

Assistant Professor in Public Health.

⁹ % tenure track for Health Sciences compared to like programs both in headcount and FTES is low. Business Administration has 91.7% TT FTEF at the highest in Accounting and Finance. Only English is lower at 29.5 % TT FTEF. In terms of tenure density (FTES delivered by TT / Total FTES), all of business administration exceeds 60%. Only Psychology and English have lower tenure density than Health Sciences.

We seek one hire at the Assistant Professor rank in the area of public health. We are seeking a candidate with research/areas of focus in any of the following areas of public health: emergency preparedness; infectious disease control; public health surveillance; data analysis; and violence reduction. We are not seeking candidates in the areas of community health and epidemiology. Candidates with expertise in the history of public health will also be considered. This position will teach the following courses: HSC 315, HSC 270, HSC 385, HSC 460, HSC 499B.

2. Request for Other Resources

Health Sciences requires additional faculty offices, computer lab spaces, research lab spaces for TT hires in environmental health and classrooms configured for PBL.