



The purpose of this document is to collect information to be used by the college planning bodies IPC (Instruction Planning Council), APC (Administrative Planning Council), SSPC (Student Services Planning Council), Budget Planning Committee, and CPC (College Planning Council) and may be used for Program Improvement and Viability (PIV). Through this process, faculty have the opportunity to review the mission and vision of their department/program. Then, using multiple measures and inquiry, faculty will reflect on and evaluate their work for the purposes of improving student learning and program effectiveness. This reflection will identify steps and resources necessary to work towards the program vision including personnel, professional development, facilities, and equipment. *Faculty should use their judgment in selecting the appropriate level of detail when completing this document.*

The deadline for submission of the Annual Program Plan to the IPC is March 31. Complete this document in consultation with your Dean who will then submit a copy to IPC. Members of the IPC review the document and return their comments to the author for use in the next annual program plan.

Cañada College

Mission Statement

It is the mission of Cañada College to ensure that students from diverse backgrounds have the opportunity to achieve their educational goals by providing quality instruction in general, transfer, career, and basic skills education, and activities that foster students' personal development and academic success. Cañada College places a high priority on supportive faculty/staff/student teaching and learning relationships, responsive support services, and a co-curricular environment that contributes to personal growth and success for students. The College is committed to the students and the community to fulfill this mission.

Vision

Cañada College ensures student success through personalized, flexible, and innovative instruction. The College infuses essential skills and competencies throughout the curriculum and assesses student learning and institutional effectiveness to make continuous improvement. Cañada responds to the changing needs of the people it serves by being involved in and responsive to the community, developing new programs and partnerships and incorporating new technologies and methodologies into its programs and services.



Document Map:

- 0) Key Findings
- 1) Planning group
- 2) Authors
- 3) Program
- 4) Responses to previous Annual Program Plan &Review (APP&R)
- 5) Curricular Offerings
- 6) Program Level Data
- 7) Action Plan
- 8) Resource Identification



Department/Program Title: Biology & Health Sciences **Date submitted:** March 31, 2014

1. Key Findings: describe overall strengths, challenges and action plans for program

The Biology and Health Science Program has a strong tradition of innovation. Over the years we have experimented with honors courses, learning communities, online and hybrid courses, and field study abroad. Each of these initiatives has had its own rewards but also its own challenges. This year we reluctantly concluded that we must discontinue our offerings in honors and learning communities due to persistent under-enrollment. We remain committed to providing creative learning opportunities and are keenly monitoring the development of GE Themes that might promote enrollment into our 100-level Biology and Health Science courses. We will also be investigating the potential for an Anatomy Academy to improve the success of our students in this gateway course. Finally, we are currently implementing an ePortfolio requirement for all of our 200- and 300-level courses. We are one of only a couple of programs in the college to implement this promising new method of assessment.

The biology program is experiencing a downward trend in enrollment from our peak in 2010/11 and 2011/12. This trend is a reversal of a multi-year expansion of enrollment during which we could not add sufficient sections to meet demand. We are gradually reducing the number of section offerings to match demand but have consequently experienced a decrease in Load. The enrollment decline occurs in both our majors courses as well as in the pre-allied health prerequisite courses. We attribute the decline to changes in the economic and employment atmosphere in our community. Hospitals have not experienced the expected number of nursing retirements due to the recent recession and stock market crash which adversely impacts the outlook for hiring of new nurses. As word spreads that new nursing graduates are failing to find work, demand for our courses diminishes. The reasons for a decline in biology majors courses is more elusive. However declining FTES is observed across the college and may be attributed to increased employment in our region. In this context, the biology and health science faculty will strategically focus on improving student success and equity, preparing our pedagogy and curricula for the time when the economy once again brings growth in enrollments.

1. Planning Group (include PT& FT faculty, staff, stakeholders)

List of names and positions: Danielle Behonick (FT faculty), Douglas Hirzel (FT faculty), Eugenia Lau (PT faculty), Cathy Lipe (FT faculty, STEM Center), Robin Lise-Nielson (PT faculty), Jenna Patton (PT faculty), Carol Rhodes (FT faculty), Nathan Staples (FT faculty), Barry Thomson (PT faculty), Justine Walsh (PT faculty), Paul Welles, Jr. (PT faculty)

2. Writing Team and Contact Person: Danielle Behonick, Douglas Hirzel, Carol Rhodes, Nathan Staples

3. Program Information



A. Program Personnel

Identify all personnel (faculty, classified, volunteers, and student workers) in the program:

FT Faculty Danielle Behonick, Douglas Hirzel, Carol Rhodes, Nathan Staples

PT Faculty FTE (Fall 2013/Spring 2014): Lisa Bjerknes (0.56/0.4), Harold Borrero (0.33/0.2), Jett Chinn (0.52/0.52), Gary Ciambrone (0.36/0.36), Sara Cooper (0.37/0.72), Jenny Fichmann (0.52/0.2), Jeanette Green (0.52/0.52), Eugenia Lau (0.2/0.2), Robin Lise-Nielsen (0.2/0.2), Diego Nieto (0.36/0.36), Jenna Patton (0.4/0.47), Barry Thomson (0.56/0.36), Tamas Torok (0.36/0.36), Justine Walsh (0.52/0.2), Paul Welles (0/0.36), Małgorzata Wisniewska (0.2/0)

FT Classified Angela Gibson

PT Classified (hrs/wk) Susan White (18 hours/week)

Volunteers n/a

Student Workers n/a

B. Program mission and vision

Include the purpose of the program, the ideals the program strives to attain, and whom the program serves. The program mission and vision must align with the college's mission and goals. (200 word limit)

MISSION:

The Biological Sciences Program provides well-supported, personalized, interactive, and hands-on instruction in the life sciences that is accessible to a very diverse student population. We share our own enthusiasm for biology and use multi-faceted and rigorous approaches to education to help enhance or instill in students a driving curiosity that leads them to fully explore the wonders of the living world. With guidance, personalized instruction, and their own self-motivation and empowerment to learn, students will be prepared for professional programs and more advanced academic degrees in the biological, natural, and health sciences.

VISION:

The Biological Science Program incorporates current computer and laboratory technology and methods into our curriculum. We challenge our students to meet the expectations of a rigorous curriculum and ourselves, as faculty, to maintain high educational standards and to stay current in the biological sciences. To meet the challenges of a continually diversifying, and ever-growing student population, we continue to look forward and plan consistent evaluation and modifications to our curricula and provide continually



updated methodologies and equipment to meet the burgeoning employment demands of the community and to prepare students seeking degrees and employment in the biological, natural, and health sciences.

C. Expected Program Student Learning Outcomes

Tool: **TracDAT folders in the SLOAC sharepoint.** Click on the link below to access your folder and log in with your complete smccd e-mail account, ex:smithj@smccd.edu and password <http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC>

1. Use the Scientific Method to investigate biological questions and critically evaluate and effectively communicate scientific data.

Assessments:

- BIOL 225 full lab write-up (C. fern lab)
- BIOL 230 full lab write-up (enzymology lab)
- BIOL 310 research paper on heart disease and diabetes
- BIOL 260 full lab write-up (electromyography lab)

2. Recognize and explain the evolutionary connections between biological structures and their function and between organisms and their environment.

Assessments:

- BIOL 225 essay questions on exams
- BIOL 230 essay and multiple choice questions on exams (structure/function of molecules and organelles)
- BIOL 250 exam essay question on relationship between epithelial structure and function

3. Critically evaluate biological information and examine its significance and impact on society and the environment.

Assessments:

- BIOL 225 persuasive essay
- BIOL 230 exam essay question
- BIOL 240 exam essay question

4. Response to Previous Annual Program Plan & Review

Tool: <http://sharepoint.smccd.edu/SiteDirectory/canio/ipc>

(log in with your complete smccd e-mail account, ex: smithj@smccd.edu and password)

There were no recommendations for improvement in our 2013 Annual Program Plan.

5. Curricular Offerings (*current state of curriculum and SLOAC*)



All curriculum and SLOAC updates must be completed when planning documents are due.

SLOAC = Student Learning Outcomes Assessment Cycle

Tools: **TracDAT folders in SLOAC sharepoint**

<http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC>

Curriculum Committee <http://sharepoint.smccd.edu/SiteDirectory/cancurriculum/>

A. Attach the following TracDat and Curriculum data in the appendix: describe status of course SLO assessments - do all courses have current assessment results? are all course SLOs being assessed on a regular planned cycle? please give an example of how course SLO assessments have led to improvements

- List courses, SLOs, assessment plans, and results and action plans (See Sharepoint site with Tracdat Report of 3_3_14)
- SLO status: Among 11 BIOL courses, SLO results are posted for nearly all of the course SLOs. Five courses have no results posted for only one SLO; four courses have 3 or more SLOs with no results yet. All 11 courses need to restart the assessment cycle in order to assess all course SLOs within a 4-year period, and this is the fourth year for many of these courses. Among 9 HSCI courses, 6 courses (HSCI 104, 105, 430, 431, 480, 481) have no results posted for any SLOs. This is partly due to the irregular frequency with which these courses are held.
- SLO example: BIOL 132 microscope operation - The lab practical scores were low, so more emphasis was put on teaching and reviewing correct technique during several labs. Scores improved for the term this was implemented.
- List courses with COR's over 6 years old (attach documents from [Curriculum Committee](#))
None of our CORs are over 4 years old.

B. Identify Patterns of Curriculum Offerings

Guidelines: What is the planning group's 2-year curriculum cycle of course offerings by certificates and degrees? What is the ideal curriculum cycle? Discuss any issues.

Curriculum cycle:

- Students majoring in biology or health science can take every transfer-level major's course every semester. This enables maximum flexibility to accommodate students' schedules and allow completion of prerequisite courses.
- Students who want to take a GE biology or health science course will have at least one such course every semester.

COR updates:

- BIOL 250 Human Anatomy and BIOL 260 Human Physiology were updated during the 2012-2013 school year to comply with C-ID course descriptors. As of February 2, 2014



the C-ID descriptors for these courses have been revised to eliminate all prerequisites. The impact of this revision on our courses has yet to be determined.

- Computerized prerequisite blocking for BIOL 250 & BIOL 260 was enabled as of Fall 2013. While this change was made with the intention of boosting retention and/or success rates for students in these courses (by ensuring their successful completion of prerequisites) there has been little change observed in these rates for either course during the past 5 years. Since 2008-2009, the success rate for BIOL 250 has hovered around 60% (range 56-61%) while the retention rate had, until last year, remained above 70% (range 67-78%). Since 2008-2009, the success rate has remained at or above 80% (range 80-85%) while the retention rate has remained at or above 87% (range 87-91%).

New courses and updates since last Program Review:

- As reported in previous Annual Program Plans, HSCI 116 Women's Health Issues was first offered in Spring 2012 but was cancelled due to insufficient enrollment. It was then offered again in Fall 2012 with significantly more promotion/advertisement to students taking Biology courses (e.g. BIOL 250, BIOL 260) as well as the medical assisting program (e.g. MEDA 110) during the preceding semester. The course ran with a final headcount of 24 students. The course was then offered again in Fall 2013 but was cancelled due to insufficient enrollment. The course was then offered in Spring 2014 with the most promotion/advertisement thus far and is currently running with a headcount of 16 students.
- The BIOL 250-260 Learning Community, in which students concurrently enroll in both courses, failed to achieve sufficient enrollment in any of the three semesters it was offered (Fall 2012, Spring 2012, Fall 2013). Anecdotally, it appears that many students are unable to carve out such a large block from their schedules in order to take the two classes concurrently. We will no longer pursue this alternative schedule offering.
- Failures to achieve sufficient enrollment in honors sections of BIOL 130 and 250 have led the department to abandon efforts in these areas. Faculty will still make Honors Contracts available to interested students.
- INTS 180 (renumbered from INTS 100) was not offered Fall 2013 because of low enrollment. We should rethink the target student for this course, and either revise the curriculum or the recruitment effort.
- Although the District requires BIOL 225 as a prerequisite for BIOL 230, the professors at Cañada prefer students to take these courses in the opposite order. This is accomplished solely by emailing students who enroll in BIOL 225 to get a waiver signed and take BIOL 230 first. Counselors are reminded each term about this preference. Currently, about 50% of BIOL 225 students take BIOL 230 before enrolling in BIOL 225. With more communication to students earlier in their academic planning, this proportion may increase.

6. Program Level Data



A. Data Packets and Analysis from the Office of Planning, Research & Student Success and any other relevant data. Identify the semester data packet you are using and the specific Tables you are referring to in your report.

Tool: http://www.canadacollege.edu/inside/research/programreview/info_packet/info_packet.html

Guidelines: The data is prepared by the Office of Planning, Research & Student Success and is to be attached to this document. Include the following:

- Describe trends in the measured parameters
- Reflect and analyze causes of trends.

Biology Department

- Course enrollments, student headcounts, and section offerings all peaked in the 2011 calendar year and dropped by a few % to 11% in the 2012-2013 Academic year. From fall 2011 to fall 2012, student headcounts and total course enrollments dropped 11% (975 to 878, and 1121 to 1009 respectively). College-wide, enrollments and section offerings have remained more steady, and even continued to increase in Spring 2013, though only by about 1%. BIOL Departmental efficiency has shown a several % decline in WSCH in 2012-2013 since the peak in the previous year (notably down 12.6%, from 5968 to 5297 from Spring 2012 to Spring 2013). Since 2010/2011 FTES has declined 7.5%-12% in fall and spring respectively, and Load has declined 27% from fall 2010 to fall 2012, and declined 29% from spring 2011 to spring 2013. This trend of decline in BIOL is apparently continuing in the current calendar year, especially in 200-level courses, probably due to a glut in the Allied Health/Nursing job markets (based on anecdotal evidence from former students). The Department of Biological Sciences needs to look more into the current job market trends for Biological Science-related careers to better predict enrollments and potential course offerings for Biology/Natural Sciences majors and explore offerings in more technically and environmentally-oriented courses. Average enrollment per section, though fewer sections are offered, has held fairly steady at about 24-25 per section in fall semesters and around 29 per section in the spring semesters.
- Student retention and success have maintained fairly consistent rates for the last 4 years: success has had slight increases since 2010 but has mostly held in the 66-69% range, while retention has held in the 79-82% range. These rates are 1-2% lower than the College as a whole. The Dept. of Biological Sciences has a short-term goal to raise success and retention rates in the next few years, beginning with being more attentive to individual student needs and more actively directing students to the many available campus resources (eg: WebSMART Early Alert, Learning Center, STEM Center, DRC) to improve their academic success.
- The last 4 years have shown a fairly consistent rise in Continuing Students (by 8 percentage points) in both fall and spring semesters, with spring having the highest %age continuing students with 74% in Spring 2013. These increases are met by corresponding decreases (near 7 %age points) in



first-time students, down to 10% in Spring 2013. These patterns of continuing student increases are similar but higher than the percentages of continuing students in the College as a whole, which had 69% continuing students in Spring 2013. The Science and Technology division is doing a better job of keeping our students, with more developed programs that include required chemistry/organic chemistry, math/calculus, and physics for our transferring BIOL students. Continued outreach is needed to keep more first-time, new students entering our programs.

- Student goal orientation shows an upward trend in Transfer-oriented students for the last four years, both College-wide and in the department. However, the total percentage of students planning to Transfer is much higher among BIOL students (up 15 %age points to 52% in Spring 2013) than the College-wide percentage (up 7 %age points to 19%). Students with goals in career (~25%) and educational development (~6%; holding near 26% college-wide) have held steady, while 4 year college students in our programs have dropped 11 %age points to 6%. The trend of more transfer-oriented students is consistent with our Program Mission and goals to prepare students and help them gain admission to 4 year Bachelor's, pre-professional, and/or graduate programs.
- Ethnic Demographic data reveal growth of Hispanic student population from 24% to 30% during the last 4 years (still 8 percentage points behind the College-wide data). Meanwhile, students identifying themselves as Filipino or Unknown dropped several %age points, likely due to a much greater %age (up 11-13 %age points!) identify themselves as Multi-Racial. Overall, the BIOL Program seems to represent well the overall demographic of the college, and is making progress in attracting the Hispanic students that make up a large percentage of the local community.
- The BIOL Program has held constant at about $\frac{2}{3}$ (67%) female population and $\frac{1}{3}$ (33%) male population for the last 4 years, which is about 5 %age points more female students (and fewer male students) than college-wide. With respect to age demographics, in the same time period BIOL has jumped 10%age points in 20-24 year old students to 46%, showing a surge in younger generation students, while the college has had a more moderate 5%age point increase to only 31%. The 18/19 year old group has also grown about 5%, further showing a surge in younger students taking BIOL courses. This is a trend represents a positive outlook for future enrollments of continuing students.
- Regarding the Educational Attainment background of enrolled students from 2008/2009 academic year to 2012/2014 academic year, students in the BIOL program and campus-wide have shown an increase of 6-9 %age points in the High School degree/equivalent category and several percentage point drops in the post secondary degree enrollees. High School degree attainees make up 65% to 68% of BIOL enrollees in 2012/2013, and ~59% campus-wide. This indicates that our programs and college are seeing more students fairly recently graduated from high school seeking entry into our Program(s). This is consistent with our noted increases in the 18-24 year old age categories, and decline in older student enrollments. Younger students are looking to our college and Program as avenues to their educational and career goals, and this again trends towards a very positive outlook for future enrollments Program- and Campus-wide. Continued outreach to the community, especially local high schools, will be necessary to keep our programs growing and to spread news of promising careers in the Biological and Natural Sciences, outside of the recently declining positions in Nursing and Allied Health.



Health Science Department

- According to data released by the Office of Planning, Research and Institutional Effectiveness, the Health Science department's Discipline Success rates were 100% for Summer 2012, 84% for Fall 2012 and 84% for Spring 2013. These all fall above the success rates of the Science and Technology Division for the same semesters (Summer 2012 - 72%, Fall 2012 - 65%, Spring 2013 - 68%). It is notable that during the Spring 2013 semester, disparities can be seen in the success rates of African American (57%) and Pacific Islander students (60%) in Health Science courses, as compared to the overall population of Health Science students. This is consistent with disparities observed for the Science and Technology Division, where a disparity in success rate can be observed for each racial/ethnic group except Asian and white for at least one of the semesters surveyed.
- In 2012/13 our total enrollment of students in the Health Science department (499 students) increased slightly from 2011/12 (471 students), but remained lower than enrollment for 2009/10 (557 students). As of Spring 2013, average enrollment per section had increased back to 29.0 students/section, which puts it in the middle of the range of values seen for this measure over the past 5 years (range 23.2 - 33.7 students/section). These fluctuations observed over the 5-year cycle relate to changes in the number of concurrent enrollment Health Science classes taught at local high schools, which affects enrollment and headcount. They also reflect the cancellation of HSCI 116 (due to low enrollment) for several subsequent semesters during the 2010-2013 period, which resulted in the running of 1 less HSCI course during the affected semesters, as well as decreases in enrollment seen at the College overall.
- FTES and LOAD in Health Science have shown consistent declines since Spring 2011. These trends in FTES and LOAD are consistent with those seen for the college as a whole.
- Over the past 5 years, one of the greatest changes in the profile (enrollment status, goal, gender, age, ethnicity, educational level, etc.) of students attending our program is the loss of a number of concurrent enrollment programs. This has resulted in a shift in the makeup of Health Science students with respect to enrollment status, as a greater proportion of this group is now comprised of Continuing Students (55% in Spring 2009 as compared to 74% in Spring 2013). The proportion of First-time Students we serve has decreased (12% in Spring 2009 as compared to 3% in Spring 2013) and the proportion of Returning Students has increased (8% in Spring 2009 as compared to 14% in Spring 2013). It is therefore not surprising that the goal orientation of students in Health Science courses has also shifted since Spring 2009 to show greater amounts of students in the Transfer (37%) and Career Development (36%) tracks. While the Educational Attainment Level of many of our students has remained relatively consistent since 2009 - we continue to serve a consistent proportion of students with a high school degree or equivalent (46% in Spring 2009 as



compared to 52% in Spring 2013) and students with no high school degree (12% for both time periods) - we have seen a dramatic decrease in the proportion of concurrently enrolled students in our department (26% in Spring 2009 as compared to 10% in Spring 2013).

- The department has remained relatively consistent for the past 5 years with respect to the ethnic makeup of our student population. The major notable difference in the composition of our student population is that more of our students identify as multi-racial as compared to 5 years ago (1% in Spring 2009 as compared to 12% in Spring 2013). This is consistent with the overall trend observed for the college during this time period (4% multi-racial students in Spring 2009 as compared to 11% multi-racial students in Spring 2013). It is also notable that our programs disproportionately attract Hispanic students, as the proportion of Hispanic students enrolled in Health Science courses in Spring 2013 (58%) was greater than the proportion of Hispanic students enrolled at Cañada (38%) for that same time period. Females (73% in Spring 2013) also continue to make up a greater proportion of students enrolled in Health Science as compared to males; this proportion is greater than the proportion they comprise of the college-wide student population (61% in Spring 2013). The age ranges served by Health Science courses remained consistent between 2009 and 2013 and was consistent with campus-wide trends.
- All of these demographic data are useful to consider in planning for new course offerings in the Health Science department.

B. Analyze evidence of Program performance. Explain how other information may impact Program (examples are business and employment needs, new technology, new transfer requirements)

Tool: **TracDAT folders in SLOAC sharepoint**

<http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC>

Guidelines:

- Explain how the assessment plan for Program Student Learning Outcomes (listed on #3c) measures quality and success of each Program.
 - Summarize assessment results of Program Student Learning Outcomes.
 - Describe and summarize other data that reveals Program performance.
 - Explain how changes in community needs, technology, and transfer requirements could affect the Program.
- An essay assignment that addresses PLO 3 was assessed for 4 graduating students in Bio 225. Scores averaged 3.2 using a 4-point rubric. Suggested actions were to clarify assignment requirements and allow more time following the case study activity in class. Criteria met.
 - Other PLOs were not assessed, apparently due to not saving the student assignments until the list



of graduates could be obtained. Since this direct assessment includes only Program graduates, this issue will occur every term. Even if various assignments were preserved, there was no plan in place for establishing one rubric to apply to student work from different classes. The original plan for assessment seems to be unwieldy.

- Current efforts focus on requiring students to produce portfolios, including posting of assignments that demonstrate achievement of PLOs. Students in Bio 240, 225, 250, 260, and honors 250 are being required to prepare portfolios this term. Assessment of graduates' portfolios will be done by faculty in late May or August. The collected data from this initial effort may not accurately reflect PLO achievement, but it should be useful for improving the portfolio process.

C. Other Considerations

- The Curriculum Committee is currently examining possibilities of creating “GE Themes” that would provide focussed collections of GE courses. We will actively pursue possible inclusion of BIOL 100, HSCI 104 and HSCI 116 into such themes as doing so may increase enrollment into these courses.

7. Action Plan

Include details of planning as a result of reflection, analysis and interpretation of data.

Guidelines:

- Describe data and assessment results for Program Student Learning Outcomes. Analyze and reflect on assessment results for Program Student Learning Outcomes and other measures of Program performance.
 - Analyze and reflect on other evidence described in previous sections. Identify the next steps, including any planned changes to curriculum or pedagogy.
 - Identify questions that will serve as a focus of inquiry for next year.
 - Determine the assessments; set the timeline for tabulating the data and analyzing results.
 - Describe what you expect to learn from the assessment efforts.
-
- As described previously in #6B, the Department is phasing in the implementation of an ePortfolio requirement that will greatly facilitate PLO assessment. We will review the portfolios during fall 2014 semester and report our findings on our next annual plan.
 - The Department will create/update existing Biology “cheat sheets” to better assist Counseling staff in guiding students who are Biology majors in choosing their courses.
 - Several members of the department, under the leadership of Doug Hirzel, will apply for a Focused Inquiry Network (FIN) through CIETL to investigate the feasibility of creating an Anatomy Academy to better prepare students for BIOL 250. According to data released by the Office of Planning, Research and Institutional Effectiveness, there are disparities in the success rates for particular ethnic/racial groups in this course - in particular, African American and Hispanic students



- and the intent of such a preparatory program would be to help address these disparities.

8. Resource Identification

A. Faculty and Staff hiring requests

Guidelines:

- Explain clearly and with supporting data showing how hiring requests will serve Department/Division/College needs.
 - Include information from the most recent Comprehensive Program Review or Annual Program Plan, whichever was last year's document.
-
- Due to declining enrollments and reductions in the number of laboratory sections being offered, we are no longer requesting an increase in our Laboratory Technician from 49% to 50%.
 - It had been anticipated that a new ENVS or sustainability program would be developed at the college. Since neither has yet occurred, we are no longer requesting a FT faculty position to support the biological courses within this interdisciplinary program.

B. Professional Development needs

Guidelines:

- List faculty and staff professional development activities.
- Describe faculty and staff professional development plans for next year.
- Explain how professional development activities improved student learning outcomes.

Some specific requests of our department faculty for college-wide professional development include the following:

- training in writing more effective exam questions
- training on teaching methods that would serve as alternatives to traditional lecturing (e.g. Flipped Classroom method, inquiry/problem-based learning)

Danielle Behonick (BIOL 250, BIOL 260, HSCI 100, HSCI 116)

Professional development activities 2013-2014

August 6, 2013 - TeamUp/Cengage Learning Webinar: From Icebreakers to Topic Starters

1 hour-long teleconference focusing on making lecture courses more interactive. This course inspired me to brainstorm more “Think/Pair/Share” activities which I have begun to use in my courses this year.

August 11, 2013 - Edcamp SF Bay, Hillsdale High School <http://www.edcampsfbay.org/>

A day-long “un-conference” focusing on current technologies and techniques in teaching, mostly for K-12



teachers. This increased my exposure to the Flipped Classroom model and made me begin thinking about additional use of technology in my courses. This conference convinced me that having an online presence as a professional educator is important and I have since joined the community of educators utilizing Twitter and the blogosphere as part of my teaching.

9/8/13 - 10/13/13 - Coursera Class offered by UCSF School of Nursing: Contraception: Choices, Culture and Consequences

A 5-week-long online course covering background on female reproductive anatomy and physiology as well as current practices and methods in birth control. I took this course to prepare for teaching HSCI 116 Women's Health Issues during the Spring 2014 semester. This course has influenced my choice of textbook for the course as well as how I will present the material on contraception.

Carol Rhodes (BIOL 130, BIOL 132, BIOL 225)

Professional development activities 2013-2014

June 2013 - Association of Biology Lab Educators Conference

As a result, I plan to add a section on mechanics to a skeletal lab and possibly add a DNA Barcode of Life lab to Bio 225.

Spring 2014 - Introduction to Bioinformatics, UCSC Extension; iPlant seminars

The ultimate goal is to improve my understanding of this expanding field and to incorporate a related activity into Bio 225.

Planned professional development activities

June 2014 - Association of Biology Lab Educators Conference, Genetics or Genomics conference not yet selected.

Nathan Staples (BIOL 230, BIOL 240, BIOL 260)

Professional development activities 2013-2014

January/February 2014 - E-portfolio training

I've participated in two workshops by CIETL and Jane Rice for developing and using E-Portfolios in the classroom for student PLO evaluations, and also spent many hours in March 2014 self-training to develop my own personal e-Portfolio. I now am well-experienced and ready to answer students' questions in developing and managing their own e-Portfolios as required for SLO and PLO evaluation. I've also had Jonathan MacSwain present to my students how to start building their e-Portfolio sites. The e-Portfolio is now a required part of my BIOL 260 and BIOL 230 courses.

Doug Hirzel (BIOL 250, BIOL 260, HSCI 432)

Professional development activities 2013-2014

January 2013 - I provided technical review services for 9 Focus Figure Activities within Pearson's MasteringA&P product.



April 2013 - Renewed certification as BLS Instructor with the American Heart Association so that I can continue to offer HSCI 432.

November 2013 - Academic Senate California Community Colleges Fall Plenary

March 2014 - League for Innovation in Community College, 2014 Innovations Conference

C. Classroom & Instructional Equipment requests

Guidelines:

- List classroom & instructional equipment requested, including item description, suggested vendor, number of items, and total cost.
- Explain how it will serve Department/Program/Division/College needs.
- List the requests (item description, suggested vendor, number of items, and total cost).
- List special facilities and equipment that you currently use and require.

Item	Vendor/Catalog	Unit cost (\$)	No.	Total cost (\$)
Human Smooth Muscle Slides	Carolina #313358	7.05	10	70.50
Human Skeletal Muscle Slides	Carolina #313316	6.75	10	67.50
Human Cardiac Muscle Slides	Carolina #313424	8.00	10	80.00
Human Sperm Smear Slides	Carolina #316590	8.50	5	42.50
Human Muscular arm model	Carolina #566713	357.00	1	357.00
Human ear model	Carolina #566966	175.00	2	350.00
Altay shoulder girdl with musculature	Carolina #566714	149.50	1	149.50
slide, fern leaf XS	Triarch A-214A-2	4.50	10	45.00
slide, snake skin	Triarch ZM1-24	3.60	10	36.00



Didactic Human skull - magnetic	shopanatomical.com #EZ-Z4708	374.25	1	374.25
Sarcomere Model	Denoyer.com #AP79	1004.00	1	1004.00
Human Skin model	Carolina, #567666	562.00	1	562.00
Human Eye model	Carolina, #566953	400.00	1	400.00
Human heart model	gtsimulators.com #G12	354.00	4	1416.00
Bone - sphenoid	Wardsci #823586	82.50	2	165.00
Bone - temporal	Wardsci #823584	63.50	2	127.00
Bone - maxilla	Wardsci #823585	95.95	2	191.90
Bone - humerus	Wardsci #823880	39.95	2	79.90
Bone - ulna	Wardsci #823882	17.95	2	35.90
Wheeled luggage	Costco - 29" hardside spinner (for transporting CPR supplies to classrooms)	130.00	1	130.00

With the exception of the final item in the table, all items are requested to support BIOL 132, 225, 250 and 260. Bone models are to augment existing specimens to ensure that there are sufficient specimens for each pair of students to study. Most other items are to replace existing aging models/slides that are losing educational value due to degradation. Some items are new to the lab courses. All items will provide enhanced learning opportunities for kinesthetic learners. For example, a recent study comparing the use of real human hearts, to plastic models, to virtual hearts showed that while students most enjoyed learning from real hearts, they learned better from plastic models. We need both real specimens and models to adequately teach our students.

D. Office of Planning, Research & Student Success requests

Guidelines:



- List data requests for the Office of Planning, Research & Student Success.
include any requests you have for assistance in pursuing or writing grants

We request success/retention data for the biology and health sciences departments disaggregated by goal orientation: non-majors, majors, nursing prerequisite students. We expect that these data will be available in the new Data Dashboard.

- Explain how the requests will serve the Department/Program/Division/College needs.

Without disaggregation we are unable to set targeted meaningful strategies. This is primarily true for the need to disaggregate by goal orientation. We need to know whether to target our non-majors, majors, or allied health students. One-size-fits-all solutions will not work.

E. Facilities requests

Guidelines:

- List facilities requests.
- Explain how the requests will serve the Department/Program/Division/College needs.

Maintenance Issues: (These are unresolved since previous APPs)

- Several ceiling lights are missing diffusers in 18-221 and 16-212, and all lights in 16-204. A maintenance request has been issued since Sept. 2010 but, as of this date, no action has yet been taken. The District chose to re-use old light fixtures during the bond renovation so many of our diffusers remain in poor condition or were poorly supported and had to be taken down for safety reasons. Unfortunately this disrepair gives our labs an air of neglect and does not reflect highly on the quality of instruction we offer.
- There is a recurring health and safety issue due to the infrequent cleaning of laboratory floors. The use of live microbiological cultures and potentially hazardous chemicals precipitates the need for an increased level of custodial service. The complete lack of regular, professional floor-cleaning in the labs and offices has become quite frustrating.

New Facilities:

- The Department is currently working with District planners on the design of a new science building. Below are the needs identified by the department:
 - A dedicated physiology lab. New physiology lab includes space for exercise equipment (e.g. 3-6 treadmills) and Biopac data collection. Space for a small fridge/freezer in the physiology lab. We need to be able to schedule both morning and afternoon section of physiology lab. If this means we need two labs, then we need a second space as well which could be shared with other bio labs (e.g. 132). Ice machine needed near the physiology lab (same floor of building).



- 18-221 becomes a dedicated anatomy lab. We need to be able to schedule both morning and afternoon section of anatomy lab.
- New ceiling lights in 18-221 including lighting over cadaver area.
- More room in the labs. There is not enough space between benches for safe circulation of students, especially when carrying materials.
- Equipment room with large items like incubators, growth chamber for plants with controllable light and temp.
- An incubator ROOM for cultures – with lots of shelves on the walls and a UV light on a bench inside for keeping a semi-aseptic area. This would be for all of our 30-37 degree incubations for BIOL 240 and 230.
- Small lab where students could do independent study projects without having to schedule around classes using the lab rooms.
- Lots of spaces between student benches, plenty of cabinets for supplies, cubbies for microscopes and basic student supplies (like we have now), and plenty of flexible counter space for common supplies and smaller equipment (water baths, microcentrifuges, shakers, etc.). I'd also like the instructor benches to have plenty of drawers and shelves (maybe even compartmentalized drawers for various supplies and instruments).
- The building should not just have gas and air but DISTILLED WATER and VACUUM outlets as well built into its system
- Workbench level ventilation system for dissections (same setup as Skyline biology, at bench level not overhead)
- More cabinet and drawer space to free up counter space for students as well as equipment setup
- The three partitioned prep rooms work well with one of them having the autoclave and dishwasher and another as a dedicated clean room (we have two clean hoods, so a space large enough for the two).
- Separate stockroom with office space next door to the labs (same design as the present one works fine) that includes ventilated storage cabinets for the preserved specimens (same design as Skyline biology).
- Large lecture rooms for at least 65 students for double sections; one room that could hold triple sections: 95 students.

New Native Garden

A Native Garden area adjacent to Building 16 would serve multiple purposes. Three ecosystems will be included: chaparral, grassland, and oak woodland; all three take advantage of the topography and current plants. These ecosystems will permit current biology courses, especially BIOL 110 and BIOL 225, to incorporate field experiments into regular lab sections. Honors students could develop research projects with these areas conveniently available. The Anthropology Dept. will use the native plants to support its curriculum on native peoples in California.

We have a draft design plan, with details of plantings, that has been reviewed with District and Canada



Facilities personnel. Design services were provided by a professional landscape designer with the assistance of the California Native Garden Foundation. This foundation could help with installation, including the coordination of volunteers recruited from the Canada community. Funds of approximately \$30-50K are needed to move forward. These funds would pay for irrigation systems (minimal, as these plants only need supplemental water to get established), soil amendments, and the plants themselves. One grant application was turned down; we continue to look for other funding opportunities.