



ANNUAL PROGRAM PLAN & REVIEW (INSTRUCTIONAL) ASGC ADOPTED SPRING 2011

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.



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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



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Department/Program Title: Biology & Health Sciences **Date submitted:** April 10, 2013

1 Key Findings:

While student success and retention rates remain high (5-year average of 69% and 83% respectively), our department has set a tentative goal to increase these to 72% success and 85% retention. Several of the following actions may help us achieve this goal:

- a BioJam or Anatomy boot-camp with incentives for student participation.
- an e-portfolio requirement of our students beginning fall 2013.
- offer more courses online or in hybrid format.
- get data on our students' success and retention according to *academic goal*, then we can better address ways of increasing success and retention.
- New courses:
 - HSCI 116 Women's Health - offered in Fall 2012
 - INTS 100 Sustainability: People, Planet, and Profits; created by faculty of several departments; planned offering in Fall 2013.

Requests of our department faculty for future professional development include:

- discipline-focused conferences
- spending compensated time in scientific labs at other institutions to learn current techniques and applications;
- release time to observe other colleagues teaching, here or elsewhere;
- workshops on specific topics of assessment or new teaching strategies, especially alternatives to traditional lecturing (e.g. Flipped Classroom method, inquiry/problem-based learning).

Our current laboratory facilities are insufficient to accommodate significant enrollment growth. A new building could include separate labs for anatomy and physiology, space for current equipment used in molecular and cell biology, as well as labs for student research projects. Environmental sciences are projected to provide more jobs in the future; we need to plan our curricula, faculty, and facilities need accordingly.

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

List of names and positions: Yancy Aquino (PT faculty), Danielle Behonick (FT faculty), Douglas Hirzel (FT faculty), Carol Rhodes (FT faculty), Nathan Staples (FT faculty), Barry Thomson (PT faculty), Paul Welles, Jr. (PT faculty)

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

3. Program Information



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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 Yancy Aquino (0.88), Lisa Bjerknes (0.72), Harold Borrero (0.2), Jett Chinn (0.52), Gary Ciambone (0.2), Sara Cooper (0.4), Eugenia Lau (0.6), Robin Lise-Nielsen (0.26), Diego Nieto (0.36), Jenna Patton (0.64), James Smiley (0.2), Barry Thomson (0.65), Nicamer Tolentino (0.2), Tamas Torok (0.36), Justine Walsh (0.52), Paul Welles (0.36), Susan White (0.2), Malgorzata Wisniewska (0.2)

FT Classified Angela Gibson

PT Classified (hrs/wk) Gary Cheang (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, personal, 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



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updated equipment to meet the burgeoning employment demands of the community and 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)

Recommendations made regarding the 2012 Annual Program Plan & Review are addressed in the appropriate sections of this report.



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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:

- List courses, SLOs, assessment plans, and results and action plans (attach report from [TracDAT folders in SLOAC sharepoint](#)).
- An updated report was run and links are provided. SLOAC cycle completion has been very good and successful in our department. 10 of 11 courses have been actively assessed in the last two years.
[TracDAT folders in SLOAC sharepoint](#)
- 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.
- We are able to offer our courses at such a high frequency due to high demand.

COR updates:

- BIOL 250 Human Anatomy and BIOL 260 Human Physiology have been updated in order to comply with C-ID course descriptors. The most significant changes involved the addition of ENGL 100 and MATH 120 prerequisites. The other prerequisites for BIOL 260 are finally uniform across the district so that computerized prerequisite blocking can be enabled.



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New courses and updates since last Program Review:

- HSCI 116 Women's Health - As reported in last year's Program Review, this new course 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 and will be offered again in Fall 2013.
- BIOL 250 and 260 are being offered as a Learning Community this semester (Spring 2013). The goal is to allow students to complete both of these pre-nursing courses simultaneously in a single semester rather than sequentially over one year. This accelerates a student's ability to apply to nursing school or other allied health program. We attempted to offer this learning community in Fall 2012 but could not get sufficient enrollment and had to unlink the courses. We hypothesized that students were turned-off by the requirement to complete a P.A.T.H. application (which was used to verify the chemistry prerequisite). Despite eliminating the application for entry in Spring 2013, we continued to have limited enrollment - 13 students. 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. The college allowed this small learning community to continue this semester and has scheduled it again for Fall 2013.
- An honors section of BIOL 250 was offered in 2012 and is being offered this semester (Spring 2013) as well. Enrollment in 2012 was initially strong, 26, but only 12 completed the course. This semester enrollment was only at 15. The designation of "honors" has dissuaded some prospective students who mistakenly believe they must have a certain GPA in order to enroll in the course. Additionally, some students are reluctant to take on extra work without a corresponding increase in the number of units. Adding an additional 1 unit of lab to the honors section (making it 5 units) might remedy this concern. College of Marin and Mission College both have 5 unit human anatomy courses that include extra emphasis on topics that are not normally covered extensively in a 4 unit course.
- BIOL 130 Honors was offered only in Spring 2013, and not offered in Fall 2012. Enrollment has been low (12-18 students) and, combined with typical attrition rates, does not reliably justify an exclusive Honors section. One solution would be to offer regular sections with Honors contracts as an option for interested students.
- A new course, INTS 100 Sustainability: People, Planet, and Profits, has been created by faculty of several departments. This 3-unit course is articulated with CSU for GE credit and may articulate directly with an Environmental Studies course at CSUEB. It was not offered Fall 2012 because of low enrollments. More recruiting effort this spring will hopefully allow it to be offered in the Fall 2013 term.



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6. Program Level Data

A. Data Packets and Analysis from the Office of Planning, Research & Student Success and any other relevant data.

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

- Our department shows an upward trend in course offerings (24 in 2010/11 as compared to 29 in 2011/12), section offerings (72 in 2010/11 as compared to 84 in 2011/12) and total course enrollments (2227 in 2010/11 as compared to 2433 in 2011/12). Although demand for Biology courses remains high and faculty in our programs strive to fill class sections, FTES (462.6 in 2010/11 as compared to 458.8 in 2011/12) and LOAD (685 in 2010/11 as compared to 606 in 2011/12) are decreasing while enrollments/section is up and sections are full. Possible reasons for these trends include: elimination of TBA hours; an increase in the number of part-time students in Biology courses (e.g. students completing prerequisite courses for nursing programs); and the fact that fewer double sections of some courses are currently being run. The reduction in double sections is occurring due to decreased demand and due to splitting of double sections in order to offer the anatomy-physiology learning community. It should also be noted that these declines in FTES and LOAD in our department mirror similar declines observed for the campus as a whole and so may instead reflect this campus-wide trend.
- While student success and retention rates remain high (5-year average of 69% and 83% respectively), our department has set a tentative goal to increase these to 72% success and 85% retention. Our goal for success aligns with the college's benchmark of 70% and its goal of 72%. One strategy that we are currently considering to help realize such improvements is creating a Biology Jam and/or Anatomy Bootcamp, done in the style of the highly successful Math Jam, Physics Jam and Word Jam programs currently offered.
- Our Student Enrollment Status continues to show an upward trend in all categories, with the greatest proportion of our students in the department being continuing students. This suggests that when students begin in our department, we keep them - this may be due to our campus now offering Organic Chemistry such that we no longer lose Biology majors to other campuses in the district.
- With respect to Student Goal Orientation, almost half of our students are transfer-bound. This is not surprising as the Biology department has few course offerings in the "educational development" category. As a sizeable proportion of our students are completing prerequisites for allied health



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programs, the members of the department are curious as to how these students are categorized in this classification system (as “Transfer” or “Career Development”?) and how this may impact the data.

- Student demographics with respect to ethnicity matches college-wide data except for Hispanic students. While Hispanic students made up 36% of the enrolled students college-wide in 2011/12, they comprised only 25% of the enrolled Biology students for the same time period. More data on these students (i.e. what biology courses they’re taking, whether they’re more likely to be part time or full time students) is required before the department can make recommendations regarding this observation.
- For student demographics with respect to gender and age, the department varies from college-wide trends in being disproportionately young - in 2011/12 more than half of our students (58%) were under 25 years old and 78% were under 30 years old (as compared to 45% under 25 years old and 61% under 30 years old campus-wide). This information is useful in future planning as such students might be more open to supplemental programs and learning opportunities like a BioJam program, and also may be more adept at technology usage within courses.
- For Student Educational Attainment level, the department is consistent with college-wide trends.
- The department found the graphic representation of the data included in the data packets difficult to parse due to lack of axis labeling, particularly on the graphs that incorporated the use of multiple simultaneous Y axes.

Health Science Department

- In 2011/12 our total enrollments (647 students) declined from 2010/11 (754 students). Average enrollment per section (32.8 students/section) also declined slightly as compared to 2010/11 (27 students/section). This may be the consequence of running 1 fewer HSCI course in Spring 2012, as Danielle Behonick was slated to teach a section of HSCI 116 (cancelled due to low enrollment), which took the place of a section of HSCI 100 (which generally fills with approximately 50 students) in the schedule. The department has also seen fluctuations in the number of concurrent enrollment classes taught at local high schools, which affects enrollment and headcount. FTES and LOAD showed a similar trend with both showing declines. These trends in FTES and LOAD from 2010/11 to 2011/12 are consistent with those seen for the college as a whole.
- In 2011/12, student success remained consistent with 2010/11 (83%) while retention (96%) had a modest increase from 2010/11 (94%). This suggests that students that begin Health Science courses stay in them, and many complete them successfully. These rates were higher than those observed for the college as a whole (70% success, 84% retention for 2011/12).
- 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



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Continuing Students (58% in 2007/08 as compared to 73% in 2011/12). The proportion of First-time Students we serve has doubled (4% in 2007/08 as compared to 8% in 2011/12) and the proportion of Returning Students has increased slightly (11% in 2007/08 as compared to 12% in 2011/12). It is therefore not surprising that the goal orientation of students in Health Science courses has also shifted since 2007/08 to show greater amounts of students in the Transfer (42%) and Career Development (32%) tracks. We have also seen a dramatic shift in the Educational Attainment Level of our students since 2007/08. We now serve a greater proportion of students with a high school degree or equivalent (36% in 2007/08 as compared to 57% in 2011/12) and a smaller proportion of students with no high school degree (28% in 2007/08 as compared to 17% in 2011/12) or who are concurrently enrolled students (21% in 2007/08 as compared to 7% in 2011/12).

- The department has remained relatively consistent for the past 5 years with respect to the ethnic make-up of our student population. It is notable that our programs disproportionately attract Hispanic students, as the proportion of Hispanic students enrolled in Health Science courses in 2011/12 (46%) was greater than the proportion of Hispanic students enrolled at Cañada (35%) for that same time period. Females (73.2%) 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 (63.3%). The most notable change in age ranges served by Health Science courses is a decrease in the proportion of enrolled students who are 40+ years old (32% in 2007/08 as compared to 27% in 2011/12) and an increase in the proportion of enrolled students who are 20-24 years old (23% in 2007/08 as compared to 30% in 2011/12). 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.



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- We will assess our PLOs in April/May according to the plan listed in #3c. Upon receipt of the list of current graduates, our instructors will retrieve the appropriate assignments previously submitted by these students and compile them into a “portfolio”. We will evaluate the portfolios and assign each student a cumulative “GPA” of scores.
- We intend to implement an e-portfolio of all students in our courses beginning fall semester 2013.

C. Other Considerations

- There are predictions that the variety of jobs in environmental sciences and fields related to sustainability will expand substantially in the next decade. Many of these jobs require knowledge of biology, among other disciplines. See our comments on curriculum and faculty needs for environmental sciences.
- Transfer Model Curriculum (TMC) has been drafted for Biology and is in the final comment stages of adoption statewide. The value of these transfer degrees (i.e. guaranteed admission into a CSU) will likely drive more students to take our BIOL 225 and 230 courses. In other fields, Cañada’s AA-T in kinesiology requires students to take BIOL 250 and BIOL 260. Additionally, the college is currently applying for an AA-T in anthropology. This degree requires students to take BIOL 250. As students learn the value of AA-T degrees, it is anticipated that we will see increased demand for our biology courses driven by students coming from non-allied health programs. Coincidentally this is occurring at the same time as we are seeing a leveling off, or decreasing, of demand from allied health students.
- Growing popularity of online courses - Several of the biology courses are now offered online or in hybrid format. We continue to expand this option for more courses (see Section 5C).

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.



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- We aim to investigate the possibility of creating a BioJam or Anatomy boot-camp and how to incentivize student participation.
- We aim to implement e-portfolio requirement of our students beginning fall 2013.
- As noted in earlier sections, if we can get data on our students' success and retention according to academic goal, then we can better address ways of increasing success and retention.
- Success of students in the sequence BIOL 230/225 will be examined after the term ends, and discussed in the Fall 2013 term.

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.
-
- At present we need a small increase in classified staff funding. We currently have one full time Laboratory Technician and a second who is at 49%. We would like to increase funding for the second position to 50%; this would allow the Technician to earn employee benefits. Doing so would likely reduce the high turnover rate for this crucial position. It would reduce the burden of training new part-time technicians and would ensure high quality and consistent support services for our faculty and students. Additionally, we foresee that at some time in the next six years we will need to expand this position to full-time in order to accommodate anticipated enrollment growth.
 - We request a FT Faculty position to lead development of environmental studies and conservation science courses and potentially, a new degree or certificate in this field. Many sectors of the economy are addressing sustainability by incorporating knowledge of biology, energy, and earth sciences. Conservation studies go beyond management of nature preserves, and we should prepare students to move into those positions. In addition, the GE courses taken by non-majors, BIOL 100 and BIOL 110, should include more curricula directed at increasing students' ability to analyze sustainability claims in popular media. The exact skills/expertise needed by this faculty position may be influenced by two factors: the contributions from Earth Sciences faculty member Susan Mahoney and her contributions toward creating interdisciplinary sustainability curricula, and work that is underway by Raj Lathigara in creating and finding funding for sustainability-related workforce degree and certificate programs. This faculty position would support both the Biological Sciences Program and the College's Global & Sustainable strategic direction.



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- Please note that these are preliminary staffing requests. Complete justification for these positions with accompanying data will be provided if and when the division decides to put these forward in the annual hiring prioritization process.

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.

Faculty need to stay current in their field by participating in discipline-focused conferences. In addition, the development of new pedagogical tools and curricula may involve: spending compensated time in scientific labs at other institutions to learn current techniques and applications; release time to observe other colleagues teaching, here or elsewhere; attending workshops on specific topics of assessment or new classroom technologies. All of these activities will contribute to better teaching, better achievement of Learning Outcomes, and fulfillment of the College Mission.

Some specific requests of our department faculty for future 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)

Full-time Faculty Professional Development Activities

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

October 19, 2012 - Attended Northern California Course Identification Numbering System (C-ID)

Discipline Input Group (DIG) Meeting (<http://www.asccc.org/events/2012/10/c-id-dig-meeting-north>) to discuss and begin to establish a transfer model curriculum (TMC) for Health Science. The discussions at this meeting (which included creating 2 separate TMCs - one for “Health Science” and one for “Health Education”) have led me to consider whether there is sufficient demand on our campus to establish an A.S. in Health Education (in addition to the A.S. in Allied Health which we currently offer). The Health Science TMC is currently on hold at the state level; considerations about the creation of a this new degree are on hold until this moves forward.

November 14, 2012 - Participated in online webinar through CCC Confer on utilizing the Flipped Classroom model (<http://www.knewton.com/flipped-classroom/>). This has led me to incorporate more “hands-on learning time” in some of my classes rather than all lecturing, and may improve student learning outcomes (data from Spring 2013 has not yet been collected, so that remains to be seen).



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Doug Hirzel (BIOL)

I gave short presentations on PLO assessment and benchmarking performance metrics during January and March Flex days in Spring 2013. In winter/spring 2013 I completed a technical review of 9 anatomy “focus figure activities” for Pearson Education Inc.

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

Compass Meeting - General Education: Context, Collaboration, and Competencies. Held at Canada College, March 8, 2013. Discussions of integrative learning across disciplines, role of eportfolios. Result: Along with the eportfolio pilot program at Canada, this has pushed me to begin assembling my own eportfolio, which should improve my understanding of what I will be asking my students to do.

Short Course, Univ of California Museum of Paleontology: Unraveling the Genome: What we've learned and why it matters. Held at UC Berkeley, Feb 23, 2013. I learned of current research and applications of genome sequencing and analysis.

NSF STEM Program Conference to share successful strategies with other STEM grantees, held in Arlington, VA in Oct, 2013. Discussions and networking with people from other NSF STEM Award institutions.

ePortfolio speaker, Dr David Hubert, presented details of how SLCC implemented eportfolios and the effects that have been measured so far. Held at Canada College and CSM, Nov 2 and Aug 15, 2013. These sessions provided a major impetus for Canada's pilot program with portfolios.

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

I received peer-advice and advice from Ricardo Flores in CIETL on how to use TURNITIN.com for my students to upload lab reports and research papers. I mostly trained myself once I had access (through the Web Access interface), using the help menus and tutorials on the turnitin website. It saves paper, automatically checks for plagiarism, and gives me more flexibility in grading and returning reports/papers to students.

Part-time Faculty Professional Development Activities

Malgorzata Wiesnewska (HSCI 100)

Spring 2013 - Ongoing Data Analysis course, Coursera

C. Classroom & Instructional Equipment requests

Guidelines:



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- 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 (\$)
Gooseneck lamps	Flinn Scientific (800 452 1261) cat#AP7547	24.55	8	196.40
GenAmp PCR system 9700, 96-well	LIFE TECHNOLOGIES: 800 955 6288 cat#4314879	8010.00	1	8010.00
Office jet 6700e all in one color printer	HP: 888 654 0054 cat# CN583A	139.00	1	139.00
Lung Model with Larynx, 5 Part	3B Scientific cat#VC243 http://www.a3bs.com	321	2	642.00
Skeleton hanger	McMaster-Carr cat#6692A61 http://www.mcmaster.com	19.99	1	19.99
Repair/replacement of broken transducers	Biopac.com 1 reflex hammer #SS36L \$245 2 pulse transducers #SS4LA, \$245 each costs listed for new items; repair/replacement likely less cost 1 airflow transducer #SS11LA, \$395	245	3	1130.00
Biopac software upgrade	Biopac.com	200 for first unit 150 for remaining	6	1053.38
AED trainer with remote (for CPR)	AEDsuperstore.com #PP-AEDT-101-R	170	2	340.00
mammalian skulls,	various carnivores and herbivores	30-200 ea.	10	1,100.00



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1 whole skeleton	http://www.boneroom.com/welcome.aspx?t=sP&p=checkout			
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D. Office of Planning, Research & Student Success requests

Guidelines:

- List data requests for the Office of Planning, Research & Student Success.

We request success/retention data for the biology and health sciences departments disaggregated by:

- race/ethnicity
- gender
- type of student (day vs. evening, full-time vs. part-time or number of units)
- educational background
- goal orientation (especially non-majors vs. majors vs. nursing prerequisite students)

- 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.

More detailed information about the success and retention of our hispanic students will help us to identify appropriate strategies to raise their participation and success in our programs.

E. Facilities requests

Guidelines:

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

Maintenance Issues:

- 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



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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.

Modifications of lab space:

- Bldg. 16, lab room 204 (and possibly other labs) is severely lacking in counter space for all of the existing equipment, and there is little to no room left for storing student experiments and cultures. We are investigating installing new, permanent and earthquake-proof cabinets and/or shelving to replace the old free-standing cubbies for students' cultures and other experiments.

New Facilities:

New Science Building

(a new building is referenced in the 2011 Facilities Master Plan [SMCCCD Facilities Master Plan 2011](#) pages 2.18-2.23)

As was described in our comprehensive program review of 2010 and in our annual plans of 2011-12, our current laboratory facilities are insufficient to accommodate significant enrollment growth. We currently have three dedicated biology lab spaces (16-204, 212, and 18-221) in addition to shared use of the partially renovated basement lab in 16-G05. This is one lab fewer than we had prior to the renovations of buildings 16-18. Each of our dedicated biology labs is currently scheduled at or near capacity Monday-Saturday. With creative scheduling (that may or may not work for students' schedules), we have the potential to add only 1-2 course sections per lab space. However, our ability to do so further depends upon the specific course and the time needed for laboratory support staff to set-up and tear-down supplies and equipment. Given the many years needed to fund, plan and build new buildings, it appears that our near and long-term potential for growth is severely limited.

- The anatomy and physiology lab (18-221) needs to be dedicated to anatomy with a new space given to physiology. Students are more successful in anatomy courses if there are "open lab" times in which they can study the models and dissected specimens. This spring 2012 one section of physiology was relocated giving the opportunity for open lab and for use by the honors section of anatomy.
- The basement of building 16 (16-G05) is shared between physics, oceanography, earth science, and physiology. The room is small and accommodates only 24 students in a pedagogically reasonable fashion, although up to 30 can be squeezed in using less-than-ideal configurations. Sharing this space, or the anatomy lab with its use of cadavers, is less than ideal for physiology. Having a dedicated physiology lab would allow, for example, for the presence of exercise equipment (e.g. treadmills) that would facilitate student research experiments in human physiology.
- Scheduling courses in the microbiology and cell biology lab (16-204) is complicated by the requirement that time be given between subsequent class sessions for cell culture growth to occur and for students to enter the lab to monitor these experiments. More workspace (floor and



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countertop) is needed for equipment and incubators. In a new building we would envision labs with an adjoining room(s) dedicated to equipment such as incubators, flow hoods, centrifuges, a large incubated room for students' currently overflowing microbial cultures, and cold room storage.

- If a new building were available, we envision creating a dedicated microscopy center that would enable a variety of courses to use state-of-the-art scopes without the need to equip each and every lab with this expensive equipment.
- The National Science Foundation and other organizations are encouraging investment in undergraduate research and recommend providing research opportunities for students during the first two years of their college career. As our department considers developing honors courses and student research on our campus, we envision the need for having a modest research space. Some research equipment is simply not appropriate to place inside teaching labs and would be better situated in a dedicated research/equipment space. Student independent research projects would need to be separated from our classrooms to allow for flexible scheduling/use by students (while other courses are using the lab rooms) and to ensure integrity of the experimental data.

Most of the courses in our department are taught as double sections. Doing so requires lecture rooms with capacity of at least 60 students. There is a shortage of this sized lecture room on campus. Some of our classes could conceivably be taught as triple sections if larger lecture rooms were available.

The health sciences Phlebotomy program currently shares space with Medical Assisting in a temporary portable building (bldg 20). A permanent space closer to the core of the campus should be made available for both of these programs.

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 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.