Contra Costa Community College District

SECTION V.
SABBATICAL LEAVE APPLICATION

Name: Laura E. Burns	Date 16 Jan 18
College: Diablo Valley College	Teaching field(s): Chemistry
Sabbatical leave period requested: Fall 2018	Years of service in CCCCD: 22 years

Have you had previous Sabbaticals? If "yes" give time period(s) and activity (activities). Yes, 1 year (2006/2007);
Developed:

1. reader for equilibrium topics beyond the typical text book including example problems and “test yourself” problems,
2. student calculation checking software written in visual basic for 5 chemistry experiments. The software runs on the DVC server Voyager.
3. Online student quizzes for General Chemistry course.
4. the Chemistry Department’s Instructor resource website which provides extensive lecture and laboratory information to maintain consistency between sections and sequential courses. Target audience is new full and part time faculty.

Indicate type of Sabbatical program (see United Faculty Agreement, Section 12.5.6)
If program can be categorized by more than one type, check where applicable.

- ❑ Institutional study (complete Form A)
- ❑ Travel (complete Form B
- ☒ Professional Study and/or Creative Study (complete Form C)

GENERAL SUMMARY OF SABBATICAL PROGRAM
(GIVE A 100-WORD MAXIMUM STATEMENT)

The General Chemistry curriculum is undergoing substantial changes to course content order and experiment structure in response to the new compressed semester.
Four goals of this proposal are:

1. Reconstruct the two course laboratory manuals to align with the substantial changes to content order and, simultaneously create more directed and cohesive laboratory content.
2. Overhaul the corresponding faculty resource website and realign with the lecture and laboratory changes.
3. Using excel, create and increase the number of self-check programs for student calculations.
4. Explore creating video animations for pre-laboratory discussion content.

Name: Laura E Burns

VALUE TO EDUCATIONAL PROGRAM

(The Sabbatical Leave Committee will utilize this information as the basis for scoring Rubrics 1, 2, 3 and 4)

Describe how the proposed sabbatical will benefit the educational program. In particular:

1. How will it benefit students, programs, or staff/colleagues?

The Chemistry department has been looking for the past year at data and equity issues surrounding our success rates as students pass from the first semester into the second semester of the General Chemistry (Chem 120 and Chem 121) curriculum. In particular Chem 120 feeds into many science majors on campus and it is important that students be successful and find their experience engaging, rewarding, and a motivating factor to further their scientific education. What we have found has not been satisfying and we are actively working to change this outcome. To that end, the chemistry department is experiencing three simultaneous changes, two internally initiated and one outside our power to affect.
They are:

1. The new shorter semester in which to cover very dense and difficult to digest topics.
2. A dramatic re-ordering and redistribution of the content in our course outline between the two semesters of General Chemistry in the hopes that the reordered topics can be better packaged in the compressed calendar and lead to improved success despite the shorter processing time.
3. A reengineering of several of our experiments and reassessment on our lab curriculum

The objectives of my sabbatical proposal would address these changes in various manners.

Rewriting and Realigning the Lab Manuals for Chem 120 and Chem 121 (addresses items 1, 2 and 3):

The department has in-house lab manuals for our Chem 120 and Chem 121 courses used by roughly 1200 students annually. Through this sabbatical I will not only be realigning the content of these manuals to match the new order of the course outline, but I will be working on substantial rewrites of several of the experiments to enhance the student learning outcomes under the compressed learning schedule. In many cases the focus will be to combine what used to be two or more lab experiments, shaving superfluous work and refining the focus of the core content to achieve better success with needed skill sets for the next sequential course. I would be taking the lead in these changes, however I would also be acting as a facilitator gathering the input of the members of the department to create and test modifications so that we achieve a working departmental lab manual that represents the goals and philosophy of the department. Additionally, technical issues such as bringing waste protocols up to date and removing instructions to equipment that we no longer have and replacing it with accurate instructions for our current equipment would be done for both manuals. These types of technical changes also impact the quality of a student's education; the more scattered and disconnected the experimental instructions, the more time is spent trying to clarify a set of instructions rather than in meaningful conceptual discussions.

Even though Chem 120 and Chem 121 are our core classes, a continually changing roster of new adjunct faculty frequently teaches them. Providing a lab manual with well designed and vetted laboratory experiments that clearly address specific outcomes benefits both faculty and students. Since students rarely have the same instructor for first and second semester general chemistry, using an in-house manual maximizes the course continuity and experimental skill sets taught from section to section setting the student up for a stronger probability of success in their sequential coursework.

Please note: The changes described above where discussed and executed in Fall 17 in a rapid response to the compressed calendar. Fall 18 is the first opportunity to apply for a sabbatical to make the corresponding necessary changes described in this proposal. A very rudimentary switching of topics will, by necessity, be done to the lab manuals for use in the fall with the understanding that the department will make due until I can make the extensive, long term changes outlined in this sabbatical.

Redesigning and Developing New Content for the Instructor's Resource Web Site (addresses items 1, 2 and 3):

The Chemistry Department Instructor's Resource web site was originally built 12 years ago and is utilized daily by both full time and the many new adjunct faculty teaching Chem 120 or Chem 121 for the first several times. It contains an abundance of resources to help an instructor plan their semester-long course and set course expectations to match the department standards. However, one of its most fundamental and most useful features is that every experiment has dedicated pages containing the student learning outcomes, department expectations, the educational as well as technical stumbling points, sample data, and stockroom preparation instructions to prepare the necessary solutions or possible unknowns and unknown keys. This is a password-protected site since it contains information not meant for student eyes.

Come Fall 18, this site that the department relies on so heavily, will become obsolete. The site will need a complete overhaul to realign with the shorter semesters and the extensive changes made to the content order in the course outlines and to the experimental changes in the curriculum. While I have been able to do some minor maintenance over the years, keeping such a

large site current is a big job. The overhaul would also include removal of references to outdated equipment, old labs, methodologies we no longer follow, and other items of a similar nature.

Linked to the rebuilt Chemistry Department's Instructor's website will be various instructor resources intended for student use including:

1. Excel Student Calculation Check programs (part of this sabbatical, see below)
2. Excel "how-to" videos detailing various functions and features (previously created)
3. Animations such as one showing reactions at the molecular level (part of this sabbatical, see below)
4. Videos on drawing double and triple bonds in 3-D – a difficult concept to visualize (previously created)

The stockroom preparation sheets mentioned above support our programs in two ways.

1. they provide details for our stockroom staff regarding the volume and concentration of each reagents needed for each experiment, and
2. it is also an excel document with scaled quantities that can be used by our stockroom coordinator for inventory and budgetary purposes.

Creating Student Calculation Self-Checks for Calculation Based Experiments (addressing item 1):

In my previous sabbatical I created a beta version of a student calculation self-check using the software visual basic that ran on the DVC server, Voyager. The goal was to create a system whereby students could check their laboratory calculations before submitting their reports and any errors could be discussed and fixed before submission. Thus, students would have immediate feedback and incentive (full credit when all the corrections are made) to learn about their mistakes. Additionally, a printout confirming each correct calculation allowed faculty to give equal partial credit for the same partial work. This saved time and gave students faster, more comprehensive feedback on their work.

The concept was well received but visual basic was a clunky program, I was a novice programmer, and the routines proved very picky and frustrating for both student and faculty. Additionally, there is a continual threat that the server that compiles the program, Voyager, will be shut down permanently.

In the intervening years I have become a better programmer, particularly on excel, and I want to create a more sophisticated set of routines using excel. The upgrades would include more features and better clarity of instruction. I would also like to expand the set of student calculation checks to encompass more experiments including two experiments whose calculations were too complicated or extensive for me to work with eleven years ago.

In our new compressed format, it will be even more important that student get timely feedback of their efforts. These calculation self-checks will give the student the power to confirm, on the spot, their understanding of many aspects of the experiment. An error message directed at a specific calculation within a larger series of calculations provides students with a more manageable starting point for a discussion about experiment misunderstandings. It also frees faculty to focus on other grading/teaching endeavors. Time will be at a premium!

Creating Animations in Power Point to Use as Pre-lab Videos or Lecture Supplements (addressing item 1):

This item is something that I would like to explore as a possible avenue for pre-lab videos (a way to prepare students for a lab discussion) or for use in or outside the classroom: simple animations using Power Point (PP) or a similar program. I would like to animate a phenomenon and then use a screen capture software such as Screencast O'matic do a voice over explaining the phenomenon. Power Point is a readily available tool and I would like to explore its' use more fully. Ideas that I had might include but would not be limited to:

1. reading a buret volume out to the hundredths place. Demonstrating how to accurately read small measurements in front of a whole class is challenging. The animation could show a blow-up of the buret's demarcations and use simple imagery to break these further into tenths thereby showing the student how to read a volume out to the hundredths place. The proper reading of a buret is at the heart of an essential analytical technique and is a required SLO.
2. a breakdown of a commonly used analytical technique called a titration. I could animate the titration process to help students visualize how molecules interact during the titration and relate the molecular reaction back to their calculations. This is a common laboratory technique found in several Chem 120 and Chem 121 experiments and homework problems.
3. writing a summary reaction called a Net Ionic Equation with a weak electrolyte. I could create an animation showing, in particular, a weak electrolyte reacting on a molecular level with a metal cation. Students have difficulty writing this type of reaction because they do not have a good mental picture of events on the molecular level. A video of this type could be used to tie the molecular images to the written reaction.

These animations would be linked to the instructor's web site for other faculty to use as well.

2. How will it enhance and/or improve your background and professional competence?

Rewriting and realigning the lab manuals for Chem 120 and Chem 121:
I would like to apply the concept of the reverse design as I develop and write the new laboratory experiments. The reverse design perspective asks one to clearly identify the desired goals, scope of activities, and incorporate varied methods of evaluations for student assignments. This philosophy will be my guiding thread during collaborative discussions to determine what pertinent skills and theoretical concepts need to be incorporated in our experiments, how best to help students access those in a memorable manner, and how to evaluate their level of mastery.

I enjoy the varied discussions related to the rewriting of the lab manuals and will enjoy more fully having the time to put these discussions into action. I feel very lucky to be in a student-centered department with faculty who bring many different views and are willing to challenge and be challenged on those views. It is intellectually stimulating and keeps me fresh and focused.

Redesigning and Developing New Content for the Instructor's Resource Web Site:
On a rather different analytical level, building the web based instructor site will expand my comfort level working with the Internet and web pages, in general. Eleven years ago, I felt it was a great accomplishment to have built an extensive web site for the department, but working in html and building web pages, even using the WYSIWYG interface is not second nature. Getting back in and creating new content and relearning how to make connections and modify format in html will again push me intellectually in directions that I have not tested in a long while.

This challenge will also place me in a student's shoes again for a while. It is easy to forget the intensity of struggle and anxiety our students face as they study unfamiliar and often confusing material. This project will give me better empathy for their experience. I know I will find it stimulating, rewarding, and humbling to challenge myself in an area outside my own area of expertise and am excited that it also has a substantial benefit to my department and students.

For clarification, this is a site outside of canvas, to be loaded as an intact website within the canvas operating system. There are reasons for wanting to keep it as intact site, namely moving between three online platforms in ten years.

Creating Student Calculation Self-Checks for Calculation Based Experiments
Creating the programs to run the calculation checks will allow me to exercise a different type of problem solving, opening up new avenues of thought and creativity. I look forward to really getting to flex my mental muscle by working on what I anticipate will be some lengthy spreadsheets where I need to keep a lot of logistics in my mind at once. It sounds nerdy, but I am really excited about this!

As a result of the student calculation self-check programs, my time grading repetitive work will be reduced so that I can focus on giving constructive feedback on the students' written reports. These are akin to English papers but on scientific concepts. They are very time-consuming to grade and most in need of detailed, time-consuming responses.

Since the student calculation self-check programs will delineate the various points of error in the calculation, I will also be able to grade with more consistency giving the equal points for equal work. In the absence of the self-check algorithms, calculations must be repeated by hand for each student to determine where each error resides.

Finally, programing of this nature can also be incorporated into my grading spreadsheet to keep an accurate and fair grade book. As an example, if I change a rubric midway through grading a class set of unknowns, I can make a single change to the preprogramed rubric in excel and it would automatically re-grade everyone's unknown in a fair and consistent manner. Tracking an incorrectly prepared solution and mitigating the error can also be accomplished by programing certain features into my excel grade book.

Creating Animations in Power Point to Use as Pre-lab Videos or Lecture Supplements
The power point animations will be another skill set that I can bring into the class and lab room to help with visualizations. As humans we operate and experience life and the world around us on a macro scale, yet so much of what we teach about happens on a micro scale. Being more familiar with the full range of Power Point capabilities would benefit my classroom creativity if I can use it to help visualize chemical phenomenon.

3. How will it relate to your ongoing professional assignment?

The lab manual would be used by my own students and would help me to develop a cohesive and thoughtful curriculum that provides essential experiences to learn concepts and skills vital for success in the next science course.

This project proposes to create self-check programs many of the calculation-based experiments in the Chem 120 and Chem 121 manuals. These are all the most commonly used experiments. Incorporating these into my curriculum would prompt important discussions with students about misconceptions while they are fresh and fixable, boost student moral with better grades for their efforts, and would allow the more timely return of graded lab materials.

The videos would be incorporated into both the lab and lecture curriculum and I will be excited to add these to my curriculum and see the effects that they have on understanding particular concepts, particularly for the C student. In a video format, I could

assign a pre-lab video viewing, followed by a classroom discussion, and then the student would have the ability to review the video at their own pace.

Finally, the Chemistry Department's Instructor's web site provides me with two invaluable features: a) it is a jumping off point for conversations with new and adjunct faculty and has, in the past, prompted many fruitful conversations about expectations and new ideas, b) since it is a repository of chemistry faculty exams and syllabi, I have found it useful to periodically check and gauge my plans and expectations with those of my colleagues.

4. How are the breadth and depth of the project appropriate for the sabbatical leave rather than the regular teaching year?

Once it became clear that the 16-week semester had indeed been adopted, the chemistry department initiated the changes we felt could help guide our students through a dense curriculum in the new compressed time frame. We submitted substantial changes to the order of our Chem 120/121 sequence course outlines in Fall 17 and began discussing the corresponding laboratory changes in the fall and continue these discussions this spring semester. These changes are extensive and are above and beyond what could be accomplished while teaching a full load and are happening at a rapid fire pace. This sabbatical is urgently needed to help reestablish the vital resources used daily in our curriculum.

I look forward to having the opportunity to delve into this sabbatical and the personal gratification of completing what I think is a very valuable project. Thank you for your thoughtful consideration.

Name: Laura E. Burns

PROPOSED OBJECTIVES AND EVIDENCE OF COMPLETION

(The Sabbatical Leave Committee will utilize this information as the basis for scoring Rubrics 5 and 6). Note that Rubric 6 regarding the "Proposed Evidence of Completion" is weighted twice that of all other rubrics.

Identify specific objectives and describe in detail the evidence that will accompany your report, which indicates that you have met each objective. The product of your approved sabbatical leave program will be subject to review by the Sabbatical Leave Committee at the time of making your final report. Examples follow:

Institutional study
- Objective: 9 units of graduate level history courses as indicated on Form A will be taken at ... University.
- Evidence: (Here you would describe the transcripts, class notes, exams, class projects, etc., you would submit as evidence of completing these units.)

Travel
- Objective: Travel to archeological zones in Central America.
- Evidence: (Here you would describe exactly what you plan to submit to document your sabbatical leave travel. You should specify the kinds of things you will present, like journals, artifacts, and slides, and you should give the committee an idea of the extent of the evidence by specifying the minimum number of slides, pages in a journal, number of museums, etc. If you so state, you must provide tangible evidence in your final sabbatical leave report that you have, in fact, written the minimum number of pages you proposed, visited the minimum number of archaeological zones you proposed, etc.

Professional study and/or creative study
- Objective: Compose a musical score or write a textbook.
- Evidence: (Here you would clearly indicate the scope of the project, including the minimum number of pages you plan to write, approximate length, an outline of the contents, description of the complexity, etc.)

The Committee will rely on the information you provide in the evidence section to determine if you have met the contractual obligation of the leave.

Objective 1: Developing, Rewriting and Realigning the Lab Manuals for Chem 120 and Chem 121

Developing the revised experiments for the chemistry 120 and 121 laboratory manuals
Laboratory experiments under development
- Chem 120:
  - Coke Lab, ~8 – 12 pages
  - Electrolytes and Ionic Reactions, ~6 - 10 pages
  - pH Puzzle Lab, ~5 – 10 pages
- Chem 121:
  - Ionic Reactions lab, ~5 – 10 pages
  - Qualitative Analysis and Separation Lab - uses an ancillary text for reference, but the lab design is being overhauled. I anticipate ~2 - 5 pages of student instructions.

Chem 120 Lab manual. In a addition to the revised experiments stated above, the alignment, edits and revisions to the remainder of the Chem 120 lab manual should result in a manual of ~ 70 pages

Chem 121 Lab manual. In a addition to the revised experiments stated above, the alignment, edits and revisions to the remainder of the Chem 121 lab manual should result in a manual of ~ 90 pages

Evidence: The intent of this sabbatical is to have a completed new edition of the lab manual for each course ready for our students to use in the Sp19 semester. I will provide a .pdf file or a paper copy of the Chem 120 lab manual that would include the three listed Chem 120 experiments. I would provide a .pdf or paper copy of the Chem 121 lab manual. The two Chem 121 experiments listed above may be part of the lab manual, but may be kept as a separate series of handouts depending on the final design of the experiments. Should the publishing company cease to exist, the evidence for this portion of my sabbatical project will be a word file or combination of word and .pdf documents.

Objective 2: Redesigning and Developing New Content for the Instructor's Resource Web Site:

The redesign and redevelopment of the Chemistry Department's Instructor's Resource website will contain the following items:

- an overview page for each course that will provide basic information about the course including the course content
- a dedicated web page outlining information about each individual experiment for at least 85% of the experiments in each department lab manual

Other information would include

- sample exams from at least two faculty for a variety of topics in each course (Chem 120 and Chem 121)
- sample syllabi from at least two faculty for each course
- sample calendars from at least two faculty for each course
- sample lab quizzes (3), and lab reports (2) covering different topics
- a set of at least four "How-to" excel instruction videos detailing: excel basics, formulas, functions, and graphing
- at least seven excel Student Calculation Self-Check programs divided into their respective courses
- at least three video animations outlined below placed appropriately in their respective courses

Evidence: This would be a website housed on the canvas platform. Access would be made available to view the website.

Objective 3: Creating Student Calculation Self-Checks for Calculation Based Experiments

Program Student Calculation Self-Checks for at least seven laboratory experiments to calculate correct experimental results and return responses for each calculation to the student.

Evidence: These would be housed on the canvas instructor's site. Access would be made available through the link on the Chemistry Department's Instructor's Resource site or as excel .xlxs files.

Objective 4: Creating Animations in Power Point to Use as Pre-lab Videos or Lecture Supplements

At least three videos approximately 5 - 10 minute each on topics such as reactions at the molecular level would be developed with closed captioning.

Evidence: These would be housed on the canvas instructor's site. Access would be made available through the link on the Chemistry Department's Instructor's Resource site or as .mp4 or similar files.

Name: Laura E. Burns

PROFESSIONAL STUDY AND/OR CREATIVE STUDY

(The Sabbatical Leave Committee will utilize this information as the basis for scoring Rubric 7. Units completed at any unaccredited and/or international institutions will not be considered. Be sure the kind and scope of your study methods, resources, and activities are clearly delineated. Include an estimate of the time that will be spent engaged in various activities.)

Objective 1: Developing, rewriting and realigning the lab manuals for Chem 120 and Chem 121: (4.4 weeks)
Write up the student instructions for the redesigned experiments, develop and format the student worksheets.

- Consult with faculty members throughout the design and write up phase.
- Use Excel and Power Point software to design tables and figures for the lab manuals.
- Learn how to effectively edit images into a word document to more clearly convey or present information.
- Realign each lab manual to coincide with the new course outlines and edit content.
- Consult with the stockroom staff to include waste protocols that comply with current standards for each experiment.
- Remove instructions for obsolete equipment and use the Vernier company website to create and subsequently incorporate new instructions for the replacement equipment.
- Consult with the editors of the two lab manuals to convey the specifics of our changes and subsequently check for correctness of the changes. I anticipate multiple meetings, both face to face and through email.
- Learn to use the Adobe Reader comments feature to be able to save time while communicating small edits to our publisher.

Objective 2: Redesigning and Developing New Content for the Instructor's Resource Web Site: (**6 weeks**)
The redesign and redevelopment of the Chemistry Department's Instructor's Resource website will take most of the sabbatical project time. With this proposal I will need to:

- re-familiarize myself with Dreamweaver software using available manuals.
- relearn how to manipulate web pages using the html coding by researching on the Internet or by studying the code behind web pages (this is handy when the WYSIWYG interface does not function as I would like).
- frequent the staff development office for questions on technology. I had meetings with Neal Skapura when I originally uploaded the department website into the canvas environment and anticipate that he will be a valued resource in this project as well.
- participate in the regularly scheduled canvas courses to address questions on the canvas working environment.
- gather input about the department expectations for the experiments to incorporate in the website.
- gather a variety of current materials such as syllabi, schedules, exams to post as examples of department expectations on the website.
- consult with stockroom staff to develop excel stockroom prep pages for redesigned labs.

Objective 3: Creating Student Calculation Self-Checks for calculation based experiments (**4.2 weeks**)
Program at least 7 of the ten identified Student Calculation Check (~ 3 days/program):

- I have experimented with excel programing and have found a wealth of very useful information by searching the Internet. I would continue to use the Internet as a valuable resource of Excel information
- I will need to consider how to balance what might be considered giving too much student feedback with what is not enough feedback. My goal is that these be useful to the whole department, thus, I will want to consult with other faculty to consider their perspective as well as my own.
- I will ask students to test the programs for ease of use, clarity of instruction, and helpfulness of the return messages.
- There are several ways to approach some of the calculations. I will consult with faculty to determine the preferred methods of approach.

Objective 4: Creating animations to use as pre-lab videos or lecture supplements (1.4 weeks)
I would like to create at least three videos, each approximately 5 - 10 minute long, on topics such as reactions at the molecular level. I anticipate it would take 2 - 3 days per video to create. To this end, I would need to

- learn to use more fully the animation feature in power point or similar software that can create animations; I wish to become more skilled at understanding the order of animated events for faster editing. I also wish to explore features that I have not yet used that might be helpful in creating the animations.
- learn to become competent using software such as Screencast O'matic or other screen recording software.
- learn how to add closed captioning to the videos. This would be a useful to know as we are asked to become 508 compliant.
- ask for feedback from fellow faculty during video development to increase the quality of the videos. My goal is to make the videos available on the Department resource site.

Total time = 16 Weeks

DVC
DIABLO VALLEY COLLEGE

January 19, 2018

Dear Sabbatical Selection Committee,

I am writing this letter in enthusiastic support of Laura Burns of the Chemistry Department to receive a sabbatical for fall 2018. Laura's project is essential for the Chemistry department and would keep the curriculum consistent between all sections of CHEM 120 and 121, no matter who is teaching it. Her work is essential at this moment in time, as the department has decided to alter the order of course content in both CHEM 120 and 121 to increase student success and help students meet the student learning objectives. We believe this work will result in higher retention rates within these highly demanding classes, and will lead to equitable outcomes across sections.

Laura's sabbatical would be used to revamp the faculty resource page for these courses that all full-time and part-time faculty who teach these courses use. In particular, new part-time instructors rely on this website for information, tips and tools. This makes the transition for the faculty teaching these classes for the first time much smoother and enables them to focus more on their students and teaching the material. Additionally, as the department alters the order of the course content, they will need to rewrite the lab manuals for the two courses, which is the perfect time for some of the labs to be revised. Laura will be the lead facilitator in revising these labs in collaboration with other chemistry faculty so that the labs will better meet the student learning objectives.

The Chemistry Department and the Physical Sciences Division are supporting Laura's project because it will benefit all faculty and students within the Chemistry Department. While we will be sad to not have Laura teaching in Fall 2018, the resources that she will be creating, as well as the revised lab manuals are extremely important and necessary for the department.

In summary, Laura's sabbatical project for Fall 2018 would be an enormous benefit to the faculty and students of the Chemistry Department. I know that the result of her work will be excellent and that she will do a thorough and amazing job. This work will play a significant role in helping student success in these highly demanding classes and will have impacts across many STEM majors. I would be happy to provide any further information if needed.

Sincerely,

Interim Dean of Physical, Biological and Health Sciences
jgorga@dvc.edu
(925) 969 - 4229

To the Sabbatical Leave Committee:

Professor Laura Burns is proposing a semester of sabbatical leave in Fall 2018 with an aim to bolster several aspects of our general chemistry laboratory curriculum (Chem 120 and 121) that are changing almost too fast to keep apace as of right now. A curricular realignment already planned for this coming Fall combined with the move to a compressed calendar has necessitated a redesign of many of our lab activities and a strategy for communicating these changes to our dozen adjunct professors – new and returning – that teach this sequence each semester. The project she has outlined will absolutely be necessary to the continued function and cohesion of our department, the maintenance of our academic standards in the face of so much change, and the continued (and, ideally, increased) success of our students. The PHC Chemistry Department believes in the importance of this work.

Student success data collected by Prof. Beaulieu in the 2016-17 academic year led to a semester's worth of department meetings last fall aimed at realigning the coverage of the two halves of the general chemistry sequence. In particular, the discovery that students taking Chem 121 who met the pre-requisite at a different college had success rates similar to those who had earned a "C" in Chem 120 at DVC was alarming. It indicated that the sequence as we taught it, while certainly self-consistent and aimed at giving students that took the whole year at DVC a deeper understanding of certain important concepts and skills, was so quirky as to make transferring to DVC for Chem 121 a bigger challenge than was fair. Our course outline edits in response to these data will take effect in Fall 2018, and this realignment has resulted in edits to the laboratory manual as topics shift from one semester to the other.

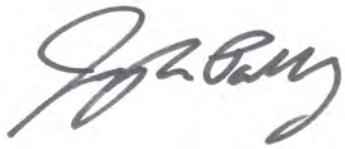
We are, of course, also moving to a compressed calendar in Fall 2018 which, though it does not change the number of contact hours we have with students, *does* change how many specific laboratory activities can be accomplished (i.e., at this level, you can't just start next week's 160-minute experiment by doing 15 minutes of it at the end of this week's lab). Even without our curricular realignment, this change would have necessitated the redesign of several experiments in order to ensure all learning outcomes are still being addressed during the course without causing any individual activity to feel like a hodgepodge of unrelated adventures. Following a Spring Flex event to kick off this redesign process, Profs. Burns and Gerken have begun meeting periodically to ensure that enough of it is ready to roll out for the fall semester to serve those students. More thoughtful, considered, un-harried work will be needed, however, to properly reconfigure a sequence that serves so many students and disciplines on our campuses.

Prof. Burns' additionally plans to redesign her own "Web-Based Calculation Check": an online system used by most of the Chem 120 and 121 faculty that allows students to independently determine if their laboratory results follow from their collected data and check whether they've correctly assessed the uncertainty in those results. The impact of this system to our 800+ general chemistry students each year is almost unmeasurable, and it is in need of a re-thinking as its host website (Voyager) is retired.

Asking a professor to get a project of this magnitude completed thoughtfully while also maintaining a full-time teaching load would not be a winning strategy. The level of focus necessary to ensure the flow and coverage of both courses' laboratory curricula, to edit a few dozen experiments in the lab manuals to match the new intended design, and to update an entire support website for the army of faculty needed to teach a combined 16-18 sections of these two courses each semester is daunting (the support website was, itself, the result of a sabbatical taken by Prof. Burns and Prof. Emeritus Leon Borowski twelve years ago).

The combination of tasks outlined in Prof. Burns' application are necessary to properly support the work of our faculty and the learning of our young scientists, and they are too heavy a load to be done well in the background of a typical semester. It is with great enthusiasm and no reservations that the chemistry department throws its support behind her application for sabbatical.

Sincerely,



Joseph P. Hickey, Ph.D.
Chemistry Department Chair
Diablo Valley College, Pleasant Hill Campus