

**Administrative Response to Chemistry**  
**Prepared by Dr. Birgitte Ryslinge**  
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*Dear Members of the Chemistry SAC,*

Let me begin by extending thanks for the probably unintentional pat on the back for us administrator folks. On page 45 of your program review, you state *“The administrators are often misused and doing tasks outside their job description. They are generally very supportive and helpful.”* While I’m fairly confident you intended let us know how much you appreciate the great work of PCC’s Administrative Assistants, us Deans tend to be somewhat starved for attention and so will take what we can get.

Jesting aside, all of the Deans of Instruction sincerely appreciate the work of the Chemistry Subject Area Committee (SAC) over the years, and particularly in the preparation and completion of your most recent Program Review. On November 5<sup>th</sup>, 2010 the Chemistry Faculty presented their Program Review findings to an audience of PCC administrators and others with an interest in the discipline. Both the written report and the presentation were informative, well developed, analytical and thought provoking. We appreciated the in-depth consideration and discussion of pedagogy, assessment, distance learning, and other topics. We also really enjoyed hearing from the two UCORE student presenters and the interactive teaching demonstration. Your presentation provided ample opportunity for questions and discussion, which was enlightening for us all. We are impressed by the commitment of the Chemistry SAC to their mission:

*To help students develop inquisitive minds and confidence by encouraging them to exercise critical thinking skills, use effective communication, apply science to real life situations, and utilize scientific literature and other media to become informed and take action in their community.*

This Administrative Response will: A) note particular highlights of the Chemistry Program and the 2010 Program Review, B) note a small amount of work still to be completed, and C) provide administrative general comments along with specific responses to the SAC recommendations.

**Of Note**

The sciences in general, and chemistry in particular, serve a critical and essential role in fulfilling not just the PCC mission but also in the national agenda of increasing our success in the STEM fields (science, technology, engineering and math). A wide variety of students enroll in your courses for different reasons, with hugely disparate levels of prior science exposure and success, and with many different academic and/or career goals. In order to be an effective program, you must be many different things to many different people and programs. These multiple

missions make your success even more laudatory. Following are some of the particular areas of accomplishment we would like to note.

### **Responsiveness to changing demands**

- Direct applications of chemistry continue to evolve, and your curriculum evolves correspondingly. Examples are your work in new non-science majors chemistry courses focusing on sustainability and, a future development, nanotechnology.
- Your thoughtful analysis of enrollment trends at course and discipline level, for example how Nursing has changed.
- Willingness to engage with, and contribute to, high quality distance learning offerings at PCC. You have used distance learning to not just provide access but also to inform your overall approach to teaching
- You've made significant advances in distance learning since your last program review. Seven of the 12 chemistry courses taught at PCC are now offered in a distance modality, including the General, Organic, and Biochemistry (GOB) sequence which supports the fully online Medical Laboratory Technology (MLT) program.

### **Innovative and evolving approaches to pedagogy**

- The chemistry faculty incorporates a wide variety of instructional methodologies and pedagogies including lecture, hands-on laboratory instruction, inquiry-based student centered learning, demonstrations, field trips, computer molecular modeling, service learning, tutoring, and access to instrumentation relevant to their careers.
- You've implemented pedagogical changes as results of various assessments, shifting to a greater focus on active learning.
- Chemistry full time and part time faculty offer pedagogy informed by research on student learning, such as Process Oriented Guided Inquiry Learning (POGIL) and the incorporation of the Science Writing Heuristic (SWH).

### **Focus on student success**

- The work of faculty with the student learning centers to provide science tutoring for students.
- Advocating and striving for giving students access to appropriate and up to date technology: in the labs if possible, but also through partnerships (Sylvania's program with George Fox for NMR.)
- Creating opportunities for student involvement and research experiences such as University of Oregon Undergraduate Catalytic Outreach and Research Experience (UCORE) program and Oregon NASA Space Grant Consortium.
- Increasing access for students with disabilities: making changes where-ever possible, and advocating for additional change as PCC updates facilities
- Good coordination of scheduling across campuses and within distance learning.

### **Professional Development and Service**

- Highly qualified and committed faculty (full-time and part-time) and support staff from

diverse backgrounds.

- Strong working relationships among faculty, and a commitment to work together to continuously improve the program.
- Commitment to stay current (even ahead of) the field (content and methodology) and spending time reading, participating in conferences, and looking for ways to apply what you find to your courses.
- Providing leadership on regional and national level: (2YC3 host, Chemistry Outlook)
- Commitment to training and mentoring of part-time faculty: you are involved in recruiting, training, supporting & retaining PT faculty.
- Community outreach, particularly with K-12

#### **Excellence and innovation in curriculum, growing focus on assessment of outcomes**

- Anchoring curriculum to national and professional guidelines: American Chemical Society (ACS) Guidelines for Two-Year College Programs.
- Initial experimental work on an “entrance exam” correlated with student course outcomes.
- Work, and documentation thereof, on assessment of college core outcomes (evidence components of Table 6 were wonderful).
- Decision to develop and use a single assessment tool for college core outcomes, and use a standardized rubric or a single team of assessors to provide consistency in assessment.
- Use of ACS exams as summative evaluation at the end of general chemistry sequence (CH 223) and organic chemistry sequence (CH 243).
- Rich discussion of how, and to what extent, the current course outcomes are effective, and assessable.
- In-course assessments: “Weekender”, SALG
- Being part of the Honors Program development (Chemistry 221, 222 & 223)

#### **To Be Completed**

As noted above, the Chemistry Program Review was extremely thorough. There are also a couple of areas (relatively minor) for specific follow-up. We are requesting a very short written addendum to address these points.

#### ***Instructor Qualifications***

We understand that the SAC is currently in the process of revising and updating its instructor qualifications, specifically to include appropriate degree titles that are more common since 2004. The reference to applicability only to part-time instructors should be removed and replaced with course- specific (or cluster-of-course- specific) qualifications that could apply to part-time (or full-time) instructors. Additionally, we suggest that you consider qualifications for provisional appointments, e.g., for those nearing completion of a graduate program, as a mentions of expanding the part-time pool and providing graduate students an opportunity to experience community college teaching. Over the last few years, we've progressed a bit in how

we like to see qualifications presented. This is driven in part by an effort to better help Human Resources work with us in our hiring and ensuring that screening supports strong pools that are consistent with SAC guidelines and intentions. Your Division Deans or the Dean of Instructional Support can provide assistance with this effort.

### *Assessment of outcomes and assessment driven change*

Assessment was identified as an area of focus for PCC during our very recent accreditation visit, and the April 2010 Interim Accreditation Report notes that: PCC must document *“progress in demonstrating, through regular and systematic assessment, that students who complete their programs have achieved the intended learning outcomes of degrees and certificates. Further, the college must begin to demonstrate, in a regular and systematic fashion, how the assessment of student learning leads to the improvement of teaching and learning.”*

As noted earlier, your Program Review report documents that you have engaged thoughtfully and even “wrestled” with the increasing focus on assessment. As a result of this process, you have realized that Chemistry faces a dual challenge: the nature of the course outcomes as written (they are hard to quantify) and the lack of a tracking process beyond PCC. You would like more data, and a way to work with that data, which is something that the office of Institutional Effectiveness can assist with (and this is addressed a bit in the recommendations section.)

However, even with these existing challenges, we think that the Chemistry SAC may have engaged in more assessment driven change than you credit yourselves with. As emphasized throughout this response, the Chemistry SAC has been a leader in constantly evolving and updating the content, delivery and pedagogy of curriculum. We are confident that these changes have not been random, but rather driven by your observations of what is needed, what is working, and what might reasonably lead to improvement. You are, after all, scientists used to making evidence based decisions. While we can and should expect the variety and quality of evidence to improve over time as we get more experience with assessment, we should not diminish the extent to which evidence is already playing a significant role in the changes you have made so far.

So, in that spirit, we ask the chemistry SAC to provide a brief written update to Section C.3 of your Program Review, to more fully reflect and document the assessment driven change which has already taken place. This might include additional examples of how the SALG and Weekender feedback has been used.

- C.3: Identify/give examples of assessment-driven changes made towards improving attainment of course-level outcomes.

### **Administrative Response to SAC Recommendations**

## **General comments**

Before addressing your specific requests for resources, there are a couple of additional points raised in your review which merit comment. As has been discussed throughout, Chemistry has shown commendable leadership in considering and developing distance learning as a viable component of how Chemistry can be accessed at PCC. You also note that you would like to do more with DL and would like some support to do so. We (the DOIs) support and appreciate this interest, and will ask your division deans to explore opportunities to provide coordinated support (across campuses) for further DL development for Chemistry.

You also note you would like to see more science based tutoring at Rock Creek, and so this seems a good place to let you know that in the Bond campus redesign, the campus Student Learning Center will be moving into Building 7. This adjacency to the sciences, will facilitate better integration of student tutoring.

You make observations related to diversity that we think worthwhile to capture here as well. One is that your SAC recognizes there is “work to be done” in regards to increasing student diversity in the sciences. We encourage you to keep this as a topic of SAC discussion, and to look for opportunities to partner at your campuses and at neighboring institutions with the variety of on-going diversity initiatives. You make a related observation that there are particular challenges for students who are speakers of other languages whose competency with spoken English does not necessarily prepare for introductory chemistry. We encourage you to connect with the ESOL SAC to explore possibilities of partnering in some way.

We also note that there has been considerable attention to safety and chemical hygiene during this past year, and understand that the science Division Deans and the SAC will be involved in working with PCC Risk and Safety to update and enhance a district wide chemical hygiene plan which will also include safety training for faculty and staff. We support and strongly endorse this work. Please keep us posted.

And now on to your specific recommendations and requests. The Chemistry SAC is clearly approaching programming and the serving of students with an attitude of continuous improvement. This is particularly impressive given the pressures of growth (77.5% increase in SFTE from 04-05 to 09-10). PCC continues to support this expansion to the best of our ability and within available resources (and while addressing other demands). The campuses and departments have also been creative in leveraging available funding to purchase equipment. We agree that the continued growth of the Chemistry departments at the campuses presents opportunities that are positive and also challenging. As you note, continued growth places pressures on facilities, budgets, and staffing. The recommendations section of this response will discuss what may be possible in regards to these on-going needs.

## **SAC Specific Requests**

We concur with many of the Chemistry SAC recommendations, and in fact PCC administration has already acted upon some. In those areas of agreement, we note that some are more constrained by funding availability, and that requests dependent on funding are typically subject to a variety of campus and district based allocation processes. Overall, we have the usual challenge of supporting worthwhile and effective disciplines in a time of growing competition for limited resources. The question becomes, what can we do with the resources we have now? In that spirit, here are administrative responses to *specific recommendations made by the Chemistry SAC (SAC recommendations in italics), with some consolidation and renumbering of the requests.*

1. *Additional Faculty in order of Priority for those requiring funding*
  - Rock Creek added a full-time position effective 2010-11. Since there was not sufficient time to complete a search for a permanent hire for 10-11, we filled that position with a one-year temporary hire. RC is currently in the final steps of the hiring process for this position and will have the permanent person in place starting 2011-12.
  - Cascade and South East will share a temporary, full-time chemistry position for the next two years (11-12 and 12-13). A permanent, full-time position to be shared with SE is included on Cascade's new initiative list to be considered for the 2013-14 academic year. SE anticipates that when their new science facilities open in 2013 -14 it will require a dedicated SE full-time Chemistry position.
  
2. *Additional Lab Support*
  - Sylvania hired (with temporary funding) a part-time (40%) lab assistant for the current Spring term, and plans to expand this temporary solution to 50% for 2011-12. This position is now being considered for Sylvania's new initiative list, which is where requests for permanent funding are prioritized.
  - At South East, there is a current 50% lab tech in biology (shared with Sylvania) which may help out some in chemistry as well, and putting temporary funding toward lab support is also being considered. SE anticipates additional lab support being in place when the new science facility opens.
  
3. *Sylvania labs remodeling including ADA compliance*
  - ADA compliance has been emphasized with the Bond architects. The 50% schematic drawings are currently under review, so the plans are not finalized. Costs may lead to revision of these initial plans. In addition to working with Bond programming, the SAC should also ensure that any ADA related issues are communicated to Division Deans, as well as to Maria Mendez, PCC's ADA coordinator ([maria.mendez7@pcc.edu](mailto:maria.mendez7@pcc.edu)).
  
4. *Cascade needs chemistry lab support.*
  - A temporary 50% IST for physical sciences is under consideration for the 2011-12 academic year.
  
5. *The Cascade program requires an additional lab room for any further growth to occur.*

- Over Summer 2011, JH 100 will be converted to a 24-station physical science laboratory and classroom.
6. *Additional support resources: The SAC has requested a variety of additional supports which include release time, paid meeting time, administrative assistant support, etc. These resources are requested to enable the SAC to complete work on assessments, tracking of outcome achievement, course development, and other professional activities.*
- We understand and acknowledge the multitude of demands on faculty time. We know that the Chemistry SAC sets high standards for their work, and strives for excellence, which creates a burden as well. Many SACs have raised similar issues, and we are unable to make across the board commitments of funds for these requests. We hope that the addition of the additional permanent FT faculty position at RC, and the two-year (and we hope also at some point permanent) will offer some immediate help for Chemistry. In addition, the campuses have had temporary funding available for the past few years, and we expect this may continue as long as enrollment is increasing. We have been able to target these one-time funds in specific situations to accomplish projects. These are campus-based decisions, and we suggest that faculty and department chairs to work very closely with division deans to see what is possible. You can also encourage pooling of funds across campuses if there are particular areas of focus for the SAC.
7. *Assistance with tracking, collecting and analyzing variety of student data, and outcomes once students leave PCC*
- Please contact Institutional Effectiveness to see what is possible.
  - While IE is not able to link surveys to registration in Banner, it is fairly common for them to help develop and administer targeted on-line surveys and would be happy to assist the Chemistry SAC.
  - IE may also have ideas about what can be done to get data from students after they leave PCC.
  - IE frequently provides this tracking through sequences and beyond on an "as requested basis" given it is course specific within subject. Please provide IE with the courses to be used in the performance tracking.
8. *Improve training (safety, lecture and lab training) for part-time faculty, and increase paid time for participating PT faculty as well as compensating the FT faculty who will deliver the training. Additional time for PT faculty teaching a new course.*
- Safety training should be considered and furthered addressed in the cross-district

work on a Chemical Hygiene and Safety plan (earlier referenced), and we hope that SAC representatives will be part of that work. We anticipate that there will be some safety training recommendations coming forth. In regards to other part-time faculty training, we agree that this is an important need but don't have an immediate answer to suggest. One possibility is to make this a larger conversation that includes the TLC coordinators, division deans, and perhaps include the other sciences. There may be some opportunities and synergies that could lead to a more strategic approach to develop the necessary expertise in part-time faculty.

9. *Increased Dedicated Travel Funds in the amount of \$1500 per faculty per year across the district for FT and PT faculty.*

- We appreciate your frustration in finding sufficient funding for travel and conferences, many of which are national. Local budgets for training are also a campus resource, to be negotiated with the Division Dean, who must balance the needs of all the programs in the divisions. There are supplemental funds for professional development available through staff development and the TLC's, and yes, there is some paperwork involved in the application process. These supplemental funds are outside of the instructional budgets, and are an important resource for many different programs and groups. Consequently, this is not a resource that we have the ability to reallocate to Division Deans. Our best advice at this moment is to work closely with the available funding sources and look for opportunities where funding can be combined and leveraged.

10. *Additional investment in equipment (the program review provided a list of specifics, many of which are addressed below.)*

- Sylvania: A scanning electron microscope (funded by the Sylvania Green Initiative Fund) was delivered in May. A gas chromatograph with mass-spec capabilities is scheduled for purchase next year (also funded by the Sylvania Green Initiative Fund.) Both instruments will be utilized by several departments and will eventually have the capability of being used remotely (multi-campus) via computer controls.
- Two roto-evaporators were ordered this month for Sylvania, scheduled for delivery next week.
- Sylvania and Rock Creek purchased updated licenses for molecular modeling (Odyssey) this year, to increase availability for students and instructors outside of class time.
- Sylvania faculty are researching options for an Atomic Absorption Spectrometer (A faculty rep from Perkin-Elmer has already visited, other manufacturers and industry standards are being explored). We will purchase this instrument in the next 3 months.
- Sylvania Faculty members are researching the possibility of purchasing a UV

Transilluminator for use in the CH102 course. An instructor version of this instrument for course developments may be purchased this year and, depending on the faculty group's recommendations, additional transilluminators for student use may be purchased in the next year.

- Other RC Chemistry related expenditures: new lab stools for chemistry lab, Rotary Evaporator & Flasks, Stirring Hot Plates, Parr\* 1341 Plain Jacket Calorimeter .
- RC Safety and General Workplace enhancements: the past year has seen a great deal of attention to ensuring that the environment in the chemistry lab areas is safe and as comfortable for students and staff as possible, given of course that the nature of chemistry is that chemicals need to be stored and used. Rock Creek has assessed air quality, storage temperatures, chemical inventory and disposal practices, and training procedures. In instances where possible enhancements were identified, changes have been made. For example, cabinet ventilation and a moving to a five-year disposal cycle for chemicals have been newly implemented.

## Closing

We want to again thank the Chemistry SAC for sharing the results of your program review with us. We very much enjoyed learning about new developments for the Chemistry discipline, your successes and your plans for the future. Yours was a thorough and complete program review addressing virtually all guidelines. We look forward to supporting your on-going work on continuous program improvement.

Administrative Response submitted by Birgitte Ryslinge, on behalf all your Deans of Instruction

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