

Program Review – Annual Program/Discipline Update  
**Administrative Response and Follow Up**  
2020-2021

**Program/Discipline:**

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**This section is for Administration to provide feedback.  
To be prepared by Division Dean(s) and reviewed by DOI(s).**

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First and foremost we deans for geology and general science (G/GS) would like to acknowledge the time and effort that went into preparing this Annual Discipline Update (ADU) for PCC. This year is still a pilot year, and the process is not entirely clear to anyone, and you did a great job navigating through it on your own. Your thorough approach to the data in particular has uncovered many potential improvements to the process, which I would like to highlight upfront before addressing your actual analysis and reflection in the sections below.

**Most significantly, we would like to upvote your request that the data be delivered to you in a spreadsheet or other manipulatable format**, rather than as a pdf which forces you to spend extra time making the data even usable.

**Also, an estimated page or word count needs to come at the beginning of every section of the template document.** As scientists, it makes all the sense in the world that you would have 30 pages of data analysis. Other SACs offered only a few lines (the opposite extreme, and not a good choice either). Now that the original formulators of this system can see the range of possibilities, we hope that they will use that to inform a desired sweet spot for length, which should be noted for each section. This is particularly at issue because the following sections seemed particularly restrictive following the data free for all, with for example a “do not exceed” limit of only 300 words for the self-reflection.

**That said, your thorough review of the data also brought out a few important points about the data that you are given**, including your request that the data cover a longer time range, that there be data looking at individual sections rather than college-wide averages, and that there be data on the scheduling of such classes, in order to inform scheduling decisions. **Also, the G/GS SAC was not alone in requesting comparative data with the other sciences**--perhaps because it is a consistent request it can be addressed in future iterations of the ADU process. While we see your point about the first two requests, specifically that averaging out the data will have you missing key factors, it may not be possible to get that data to you in a way that protects the privacy of the individual faculty and students.

Some of the data you request though is available to you through myPCC. By way of example, if you go to the faculty tab in MyPCC, under "Banner/Banweb," click on "Summary class list," and then when the list of students comes up, click on each student's name to see their home address. This example would answer your question of how many students are taking courses online because they simply cannot get to a PCC classroom.

The scheduling pieces will be addressed with the new scheduling software Ad Astra that the college will be using going forward, which should eliminate some of the scheduling glitches that the SAC has described, and which in any case are beyond the control of this SAC.

The rest of this administrative response will address the specific strengths, challenges, goals, and requests that you indicated in your ADU:

**1. Strengths and successes of the program as evidenced by the data, analysis and reflection:**

It is clear from your analysis that the G/GS courses have grown as a proportion of the classes that are successfully run at PCC. Clearly part of this is the development and rapid growth of the Global Climate Change (G184) class, which has brought more students to you than you have lost in slightly reduced enrollments in other G/GS courses. It makes sense that you begin to take a hard look at the future of geology courses in higher education, and continue to revise the breadth of course offerings as well as the specifics of the topics within each course.

It is also delightful to learn that the demographic of G/GS courses in general mirrors that of the PCC population, but there are still more white students than expected given PCC's population. Geology has been historically avoided by students of color for many reasons. Perhaps through the Unlearning Racism in the Geosciences (URGE) NSF-supported learning group that seven SAC members joined this year there may be new answers to those old reasons?

The thorough research behind what stops students in general in geosciences was great, and the samples from the astronomy textbooks were enormously compelling. The question going forward is how can the G/GS SAC take this understanding to the next level to build solutions to these known issues?

## **2. Areas of challenge or concern, if any:**

Given the small-ish number of students that take G/GS courses, the assessment that the data is not statistically significant in many cases is an accurate one. The differences in success rates between, for example, white students and black students are not large enough to be scientifically valid. Notwithstanding that, success rates are often lower for students of color, and the lived experience for those students is real. We would caution you therefore not to fall back on “statistically significant” as a reason not to address the disparities that are faced by students of color and other minoritized groups in your classes.

Consider also that both can be true--that students come to us with lives that can interrupt or interfere with their education, and that there are ways that we can address our curriculum and pedagogy in order to mitigate these things for them. Students will always have outside circumstances, and now more than ever they are facing huge hurdles. Can we look at the way we grade (e.g. are points taken off for missing class, and if so is that grading what you mean it to?) or the assumptions that we make (e.g. even if they have the math knowledge or Excel background, do they know how to apply it in a real world situation, and since they're *not* getting that skill from their other classes can they pick it up from you?).

Likewise, can faculty take note of the late enrolled students and reach out to them with a statement of support and list of resources (including advising) that are available to them? Students recognize and interact with their faculty most of all; this relationship gives you an opportunity to make a big difference with small actions.

We encourage the G/GS SAC members to build on their history of engagement, and to familiarize themselves with the [“How we get to YESS”](#) webpage and opportunities to take action individually and as a SAC.

## **3. Reflection on goals and resources:**

Several goals were listed throughout the ADU, relating to scheduling, to course development (and deactivation), resource alignment, and faculty needs.

We support the plan to deactivate G208 (Earthquakes) and G209 (Volcanoes), as they are redundant to the new G148 (Volcanoes and Earthquakes) course, but to keep G207 (Geology of the Pacific Northwest) as the one remaining lab-free science course in your current pantheon of courses.

We support the rearrangement of topics in the G201-202-203 series so that G203 is no longer quite so redundant, in the hopes that it will boost enrollments in that class. We do not support allowing it to run in the single digit number of students, and suggest instead that you offer it once a year on the east-side (CA or SE) and once a year on the west-side (RC or SY) on a rotating scheduling so that it makes it to each campus every second year, and/or build an online

shell for it so that students do not have to travel to either side of the river to take the course. This should enable the few students who wish to take the course for the geology major to graduate with the course, without putting us in a position of cancelling it so often.

We recognize that the math prerequisites may need to be reviewed for your classes, but caution you to be careful not to exclude students by making the prerequisites higher than they need be. Perhaps including a math-review module in every section where math comes into play is a more student-friendly way to make sure they have the math they need when they need it. The discussion of GS107 mentions an early testing of math skills. Perhaps either breaking that up into smaller bits as needed during the class, or requiring students to retake that section until they've attained a 70% or higher score on it would make a difference for that class, and for any other that has issues around math.

As you consider creating "a basic entry-level class that incorporates skills needed for success in any science class", consider creating it as a general science (GS) class that would be useful to chemistry and physics and biology students as well. Also, recognize that building this as an alternative math class has not gone well in previous iterations at PCC. A focus on some skills around applying math to sciences, and on academic integrity, and the other topics you suggest, does make sense.

It also makes sense to work with the office of disability services to find new ways to deliver a very spatial and visual topic to students with visual or spatial impairments. The great thing about making improvements in that area is that it tends to benefit the varied learning styles of all students.

As for faculty, first let's just recognize that despite Cascade's hopes of hiring across both G/GS and ESR, no ESR has been taught through that position, and the budget lies entirely in Geology. As such, the G/GS SAC has **four** FT faculty, while the ESR SAC remains at half of one. It is clear that you still do need a full-time instructor who can cover the not hard-rock topics of global climate change, meteorology, and oceanography, and that this should be the next full-time hire for G/GS.

We recognize that filling vacant positions alone will not bring PCC near the 75% FT/PT ratio that the national guidelines recommend. Potential new and vacant positions are being gathered on a college-wide list that will be examined in spring 2021. The division deans with G/GS support filling these vacant positions with 1-year or 2-year temporary positions in the event that the College chooses to spend the 2021-2022 year determining college-wide benchmarks and priorities for filling future full-time faculty positions.

Because PHY121 is clearly such a close comparator to GS107, please consider letting physics take on GS 107 on retirement of your planetary geologist, such that that position (if replaced, and we do hope it can be) can be hired to fit whatever the new direction of the G/GS SAC is, that you propose to be working on in the coming years (presumably before said retirement).

As for other resources, both lab-based and field-based, please also recognize that a van or fleet of vans has nowhere to live within the current PCC structure. Budget, on the other hand, does have a home, particularly after the reorg. It seems like creating a decent budget for van rentals for G/GS field trips would put geology labs on par with the consumables used in biology and chemistry labs, but with the field-based experiential priority that is crucial to the earth sciences. Budgeting for vans would also go a long way to bringing students to equity, as the current system where some students can make it to field sites easily and some cannot make it at all is markedly uneven. Please recognize that this is an opening in the conversation and not a done deal--much needs to be addressed in the reorganization and the associated budgeting processes to be able to actually make a change like this. In the meantime and in addition, we would encourage the G/GS SAC to explore virtual options for fieldwork to provide accessibility for all students.

A one-time budget to get the lab equipment to parity for all the campuses seems viable, in as much as these are generally non-consumables that would last years and years before needing to be replaced. It also makes sense within the one college model post-reorg, the whole underlying idea of which is to make for a similar experience for all students regardless of campus. The first step for that would be to get a decent inventory / request list from each campus. The hurdle I see there is that the lab techs are not skilled in rock and mineral recognition, so there would likely need to be faculty involvement in the creation of that inventory. Another hurdle, obviously, is that you would need to be allowed on campus to do this, and that is not likely very soon either. Once there is a single budget for G/GS across the college under the reorg, and you have a list of specific needs in order to bring the campuses to parity, discussions can begin with the new Program Dean for physical sciences and the new ACP dean for Science, Computing, and Engineering.

Please as you have that conversation consider also that we have centers at Newberg and Hillsboro that would love to take on science classes. Are there G/GS lab classes that are *not* materials intensive that might work there? Or could there be a portable set of lab supplies that could be moved from place to place?

You are absolutely right that the current system for scheduling OL courses is not flexible enough to accommodate last minute changes in demand. With luck, that and other scheduling issues will be addressed in the reorganization to a one-college model (so that you have one dean going forward, and possibly one day even a faculty department chair) and with the new Ad Astra scheduling software.

Finally, with regard to academic integrity and homework sharing sites such as Chegg and CourseHero, we recognize that there can be no single solution to this problem. In short, while the college is aware of and working to address this issue, it's not at all clear how to solve it at a systemic level. The G/GS SAC is encouraged to engage with faculty peers, with the TLC, and with our online office to continue exploring assessment options that may look very different from those historically used to assess student learning. Assessments that are contextualized,

especially if local and current, are less susceptible to Chegg or similar platforms and, in addition, these can engage students who may not easily identify as a STEM student.

**4. Recommended next steps:**

Proceed as planned on program review schedule

Follow up conversation needed with SAC, Dept Chair(s) and Dean

Follow-up conversations are needed in order to bring many of your recommendations into reality. These conversations should include the new program dean over G/GS and the new ACP dean over Sciences, Computing, and Engineering, in consultation with the current science deans and SAC chairs. Here we suggest SAC chairs rather than FDCs, as there is currently no FDC at PCC with a G/GS background.

G/GS was not the only SAC to request a winter term SAC day. Please bring that suggestion to the EAC as well.

**5. Additional comments/questions:**

We want to thank the G/GS SAC for all your hard work in support of PCC students. We know this past year has not been easy. We recognize that since your SAC is spread out over four campuses that you may not have received the same message on a consistent basis, and that scheduling has been difficult. We believe that once the reorganization is complete, that your new Program Dean and ACP Dean will work together to provide a more consistent voice. In the meantime, please know that all your divisions deans will do the best they can to support you.