

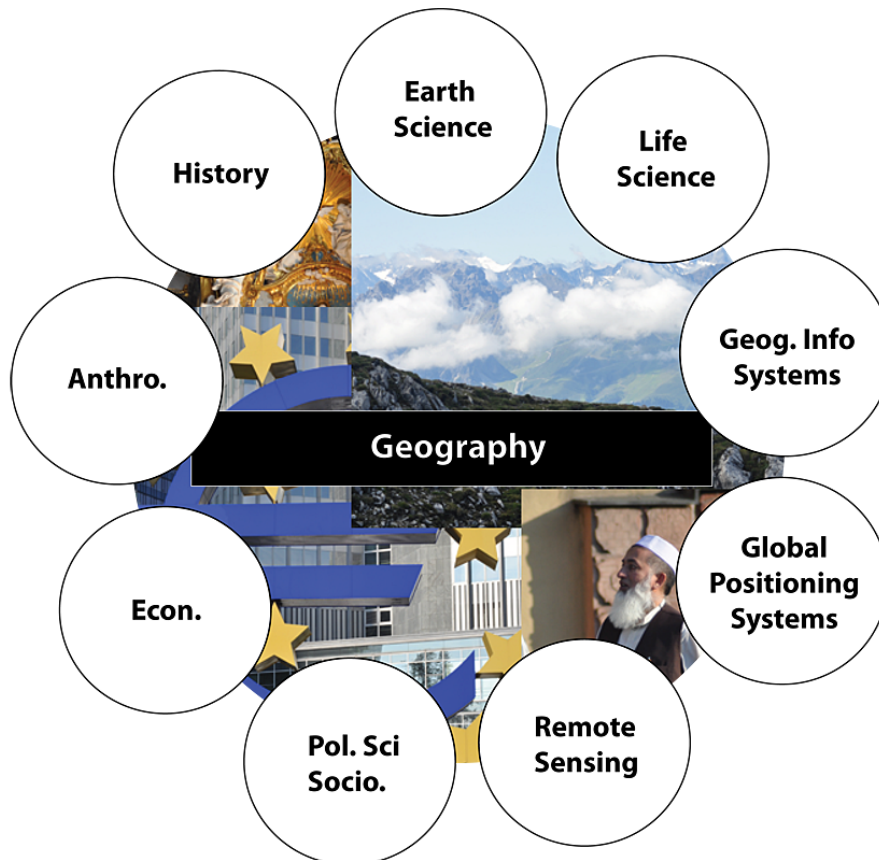
## 2019 Geography Department Program Review

Ideally, the writing of a Program Review Report should be a collaborative process of full-time and part time faculty as well as all other staff and stakeholders invested in the present and future success of the program at all sites throughout the district. The Program Review Committee needs as much information as possible to evaluate the past and current performance, assessment, and planning of your program.

**1) Relevancy:** This section assesses the program's significance to its students, the college, and the community.

1a) To provide context for the information that follows, describe the basic functions of your program.

The Geography Department provides general education and vocational courses for students in the cross-disciplinary areas of business & technology, social sciences, physical sciences and liberal arts. With a purpose to advance geographic literacy, Geography educates students how natural and cultural systems operate in a particular place. Similarly, Geography is the science of location: where phenomenon occurs and why they occur.



Geography is split into four (4) general areas: physical, human, regional and technical geography. The Geography Department provides applied geography courses, particularly in Geographic Information Systems (GIS) and "GeoSpatial" technologies for those who seek a technical career path into related to mapping and geographic analysis.

Physical Geography is the largest course offering and is a general science course encouraging critical thinking about the fundamental processes and patterns in the natural world. Students are encouraged to become engaged citizens aware of timely and significant environmental issues (e.g. global climate change) and natural hazards (e.g. hurricanes, earthquakes, floods and other natural events.) Supporting a core value in the College's Vision Statement, human (cultural) geography emphasizes respect & understanding of other cultures through a discussion of what diversity means. Similarly, students investigate timely population and migrations issues, current ethnic conflicts throughout the world, and synthesis of the global economy. Outside of the classroom, Geography students participate in field study classes. Overall, the Geography program supports the institutions goals to adapt to the complexity of an ever-changing global economy, foster citizenship in our community, and educate students on sustainable use of all resources.

1b) How does your program support the district mission, as quoted below?

“Sierra College provides an academic environment that is challenging and supportive for students of diverse backgrounds, needs, abilities, and goals with a focus on access, equity, student-centered learning, and achievement. The college is committed to practicing diversity, inclusion, and recognizes that a diverse and inclusive curriculum and workforce promotes its educational goals and values. Institutional learning outcomes guide the college’s programs and services, encouraging students to identify and expand their potential by developing knowledge, skills, and values to be fully engaged and contributing members of the global community. Sierra prepares students by offering Associate’s and transfer degrees, certificates, career and technical education, foundational skills, as well as lifelong learning and enrichment.”

Geography supports the district mission primarily through its educational framework directly in line with the district’s goals in the area of citizenship - ethics, diversity, sustainability, global awareness, and personal responsibility - which are all themes is geography courses.

Regarding students with diverse backgrounds, most geography course address global environmental and cultural challenges for a growing & diverse world population. Classes with cultural themes, such as World Regional or Cultural Geography address the current refugee crisis around the world, with a swelling & unprecedented number of people since WWII (approximately 68.5 million -- according to the UN Refugee Agency) who are fleeing political persecutions, conflict or hardship.

To help student achieve better grades, the Geography Department faculty emphasis student-centered learning with small groups and group presentations, which also provides an atmosphere of inclusiveness. Peer-to-peer learning among students of all backgrounds

appears to help retention as student get to know one another. Group presentations also help students learn how to collaborate.

In regard to technology and information competency, the mapping component of geography teaches students technical skills to master many scientific challenges of the day related to location and spatial relationships.

Please include an analysis of how your program supports ISLOs (Institutional Student Learning Outcomes): Communication, Technology and Information Competency, Critical and Creative Thinking, and Citizenship?

1c) Program offerings align with which of the following mission categories; check all that apply:

- X - Transfer
- X - Basic Skills
- X Career Technical Education
- X Personal Development/Enrichment
- X Lifelong Learning

1d) Please analyze your department's performance in supporting the mission categories marked in 1c above. Please provide evidence in support of this analysis, including data from the dashboard relevant to this evaluation; relevant data includes the equity and diversity goals of the department and College.

If any of the following apply to your program, please address them.

Degrees, certificates, and/or licenses your department has generated:

The alignment of these awards with the district's mission and/or strategic goals. (See the district "Awards Data File, available from Research and Planning, for your numbers).

Job placement or labor market information for your program's awards and licenses.

The contribution your program makes to student transfer.

Participation in basic skills programs.

- Geography has an Associates Degrees for Transfer (AA-T). Because this offering is new, this number should increase.

2014-15	2015-16	2016-17	2017-18
3	6	12	4

- The GIS program offers a *Skills Certificate* for students who complete the core sequence of basic to advanced courses. Most students can complete this certificate in 1 year. Students can customize the certificate to focus on certain themes, such as AutoCAD or computer programming.

The number of GIS skills certificate awards over the past 6 years:

2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
7	5	3	2	2	3

Geography has increased geographic literacy through teaching modern technology, such as *GeoSpatial* tools (GPS, GIS, Remote Sensing) and other means (e.g. Google Earth) in labs.

Recently (Spring 2017), numerous GIS internships opportunities have arisen due to our close collaboration with industry. While placement / employment data is difficult to track, the Geography Department can track anecdotal evidence of placement and opportunities based on email correspondence (both employers and former students) and social media. This data suggests students that complete our advanced GIS classes are likely to have an opportunity for at least an internship. Most (perhaps as many as 1/2) of our high achieving student who stay in touch have found jobs.

- For Personal & Lifelong Learning, a focus on advancing geographic literacy is discussed in part or whole in all geography classes (global climate change, landscape appreciations, awareness of the global economy, cultural appreciation of diversity, and sustainability.)

- To augment lectures and encourage review of lectures, Geography Professor Sean Booth over the past years has created nearly 40 class lectures in a studio and in the field. They are produced for students to improve success by providing them an opportunity to watch lectures again. They are found on YouTube searching "Sierra Explorer". Other instructors are needed to provide instructional videos.

1e) Optional Additional Data: Describe any other relevant contributions of your program to the district mission, goals, outcomes, and values not incorporated in the answers above. Examples include but are not limited to contributions to student equity and success, diversity, campus climate, cultural enrichment, community ties, partnerships and service, etc. Include specific data and examples.

See current jobs in geography & related fields in - Bureau of Labor Statistics - Occupational Outlook

Bureau of Labor Statistics - Occupational Outlook

<b>SOC Code</b>	<b>Job Title</b>	<b>2016-2018 Employment</b>	<b>Change from 2016 to 2026</b>
19-3092	Geographers	1,700	7%
19-3051	Urban & Regional Planners	36,000	13%
17-1021	Cartographers & Photogrammetrist	12,600	19%
19-2021	Atmospheric & Space Scientist	11,100	10%
19-1030	Conservation Scientist	34,200	3%
19-2041	& Forester Environmental Scientist	90,000	15%
53-2011	Airline &		4%
25-1064	Commercial Pilots Geography Teacher	124,800 5,500	11%
13-2021	Appraisers & Assessors	83,700	6%
41-9020	Real Estate Broker & Agents	422,000	11%
17-1022	Surveyors	42,400	10%
17-3031	Surveying & Mapping Technician*	60,020	11%
13-1161	Marketing Research Analysts	415,700	32%

\* In 2018, pay for Surveyors and Mapping Technicians = \$31 median/ with 10.3% increase in California, according to the Employment Development Dept. (EDD).

Other Department goals include:

- Participate and promote the two (2) day "People & Culture" Days -- in conjunction with other academic areas, such as ESL, social sciences, international programs, and student government. This event provides a sense of inclusiveness and pride about one's culture and heritage. Hundreds of students from all cultural backgrounds participate in this event by showcasing posters, setting up booths, and completing a passport exercise.

**2) Currency:** This category assesses the currency of program curricula as dictated by Title 5 and the currency of efforts in meeting accreditation standards as well as improving pedagogy and engaging in professional development.

2a) Curriculum: Comment on the currency of your program's curricula, including discussion of any recent or projected changes. Please describe your process and the criteria, including state and/or professional mandates, for evaluating and revising curriculum, including the use of SLOs.

As relevant, please address the impact of the development of MAPs, Interest Areas, and Guided pathways on curriculum and program planning and assessment

All or 100% of GEOG course curricula are current. Our last curriculum review was for the following courses: GEOG 95, GEOG 91A, GEOG 91B, GEOG 86, GEOG 85, GEOG 16, GEOG 15, GEOG 14, GEOG 12, GEOG 11 were approved at the end of 2013 and were effective in August of 2014. Next review will be 2019-20 with revisions to GEOG 1 regarding online compliance (which is technically not curriculum but distance learning requirements). GEOG 2, 3, 4, 5 will remain the same. GEOG 11, 12, etc. will be revised because students are not allowed to repeat even though GEOG 16, for example, went to multiple places on separate occasions (i.e. they were different trips). GEOG 16 - our field studies core class will remain except the department will mirror Earth Science's field studies approach with classes numbered like the following: GEOG 16a - to Santa Cruz, GEOG 16b to California Foothills, etc. Each course will be unique to allow students to take multiple field studies classes rather than be limited by the "no repeat" rules. This will likely improve enrollment & streamline a pathway to success & completion.

Courses in the GIS sequence will be revised also to streamline pathways to success and completion. Specifically, GEOG 91A and GEOG 91B - 1 unit - courses will be added to the *skills certificate* classes, with a focus on cartographic design rather than software applications. The set of GEOG 91A and GEOG 91B will be added to the skills certificate options to improve student's ability to complete the skill certificate in 1 year.

Regarding the interest areas & pathways, all faculty agree that GEOG is interdisciplinary and not accurately placed under the correct interest area of Earth & the Environment. It's clear that GEOG resides within at least 3 of the newly created interest areas (Earth and Environment, People, Culture and Society, and Applied Technologies) rather than just one interest area. We understand programs are required to be associated with just one area, however, this does not work for interdisciplinary departments such as GEOG. This is a problem for students may not find this interdisciplinary pathway. In the past we recommended "Global Studies" to the committees and now we suggest an Interdisciplinary Interest Area to address our concerns and likely other departments. Most critical is the stagnation in enrollment into the two other areas of geography. The cultural (or human) geography themed classes, such as World Regional GEOG and Cultural GEOG really don't belong under "Earth and Environment." That is, students may easily miss other components of geography that are more like people, culture and society. In addition to the human geography side of GEOG, students may also miss the technical & cartographic side of geography (GIS and *GeoSpatial* classes), which really don't belong in this interest area either. GIS is more associated with STEM or Applied Technologies.

Focusing on the GIS program and using several expert's opinions, such as GIS expert Marc Ball from the City of Roseville, says "we need to differentiate ourselves from [other local programs]. They have the more robust GIS Program... so then maybe SC needs a certificate that can be completed in 2 semesters... maybe 1 semester (crazy I know). That would be different, and that would stand out and appeal to working professionals needing skills quickly. Marc asked that GEOG 90, 93, 94 and others immersion classes perhaps could be completed each in 4 weeks or less? "This would be a big change and I know we would have challenges with computer lab space, and potentially professor availability but I feel there is a gap in getting skills real quickly and this would fit the need.

Scott Adrian, another GIS expert, participates in the Valley Vision [Information & Communications Technology](#) (ICT) Regional Advisory Committee and he said a common theme he hears from the business sector is that Community Colleges are too slow in responding to their needs. They need programs that kick students out quickly with necessary skill sets...a two year certificate program is too slow...not responsive enough.

Another approach to differentiate SC is to plug Project Management and Business Analysis skills into the GIS Skills Certificate Program. My assumption here is that SC already has PM and Business Analysis classes available.

Marc Ball continues, "as we talked about several years back a GIS Cooperative between Roseville and SC could be worth looking into again. With Roseville IT and SC in the same building here in downtown Roseville I could envision something really promising."

I mentioned the bottlenecks are staff, especially with just 1 full-time faculty by 2020. We do have access to the computer lab V318, however with more concurrent class on computer lab will be inadequate.

2b) **Student Learning Outcomes Assessment:** Analyze your program’s assessment of course outcomes, analysis of results, and improvements/changes made to the program as a result of this assessment. Please provide specific data and analysis in the space provided.

All GEOG class are now proficient or at Mastery after some unsatisfactory results in the past, such as student's understanding of how deltas work. The sample chart is taken from the Google Docs cumulative spreadsheet for all GEOG classes conducting the CSLOs.

Cumulative Data on GEOG 1 - Physical Geography for all classes shown

Sem	Secs	CSLO	(CSLO)	Succ	Topic	Results
Sp15	2	fluvial	CSLO 1	60%	stream deposit	Proficient
Spr15	1	Climate Controls	CSLO 4	60%	b.How is the Greenhouse Effect Related to Climate Change Science?	Proficient
Fall15	2	Tectonics	CSLO 2	80%	Landforms	Mastery
Spr16	2	Fluvial	CSLO 1	50%	Delta	Unsatisfactory
Spr16	2	Earth Layers	CSLO 6	70%		Mastery
Fall16	1	Climate Controls	CSLO 4	70%	Q. 45 What controls A climates? latitude	Proficient
Fall16	3	Climate Controls	CSLO 4	80%		Mastery
Fall17	3	Climate	CSLO 4	70%	Climate	Mastery
Fall17	3	Climate Controls	CSLO 4	70%	climate	Mastery





2c) Professional development: Please describe how your department's individual and group activities and professional development efforts serve to improve teaching, learning and scholarship.

Please describe your staff development needs based on this analysis.

The GEOG Department meets regularly twice a year, during flex week, to discuss all new developments for the upcoming semester, where information gathered by the Department Chair at the Department Chair flex meeting is shared and discussed, among any other departmental endeavors, such as the ongoing program outcome assessment. These meetings are used to share best practices in the teaching and discuss current student issues. It is also the forum where information is shared on programmatic and course level curricular changes.

- Geography & GIS Instructors meet with the GIS professionals from time to time, such as the City of Roseville with their frequent internship opportunities, to discuss instruction, job trends, job opportunities, and other meaningful input related to ISLOs - such as "Technology and Information Competency." Current discussion is how to differentiate Sierra College GIS program from American River College (ARC). The Dept. will continue to streamline the schedule and offer courses in a timely manner.

- Geography & GIS instructors often participate in the California Geographical Society conference held each year in California. Other conference and associations such as American Association of Geographers (AAG), Association of Pacific Geographers (APCG), ESRI User Conference (GIS software company), and other local seminars, conferences and gatherings are attended.

- Geography & GIS instructors are creating outside activities to help student success, such as video lectures, *Canvas* practice quizzes, etc. Much of this work requires additional research beyond normal class preparation to maintain accuracy, depth and interest in the subject matter, such as creating the *YouTube* videos.

Sean Booth has produced over 40 videos on *YouTube* as an extra study guide and for OL classes. Students who watch the videos comment they are very helpful.

Our financial needs are the same as last period, with no increase in budget except the GIS software should be folded into the GEOG budget rather than DIV. budget.

2d) Optional Additional Information: Please describe and explain any additional information that supports your **evaluation of your program's success**.

**3) Effectiveness:** This section assesses the effectiveness of the program in light of traditional measurements.

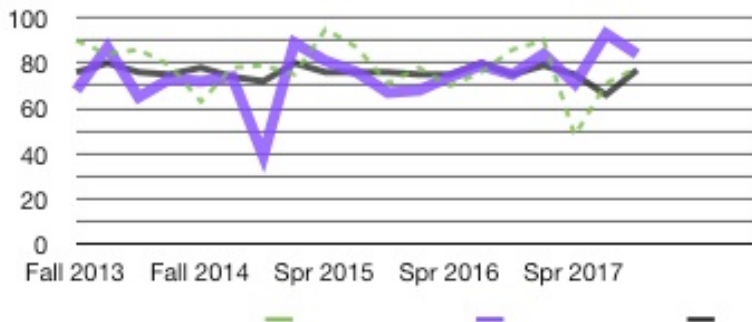
3a) Retention and Success: Assess and evaluate the three-year trends in your program's data contained in the DSR and analyze any relevant information found in the data dashboard related to retention and success. Please include the results of any relevant outcomes assessments, as appropriate. Address separately the data for on ground and online courses, as well as the data for the campus or centers at which you operate. Please describe any challenges experienced by your program; if you determine that you need to improve the program's performance, please describe how you plan to achieve this goal.

As relevant, please address your program's role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

Interest Area misrepresentation - as noted earlier, the new academic programs bundled into categories will likely impact the future Enrollment trends in the GEOG classes other than GEOG

1. Specifically, we anticipate declines in the cultural classes, which do not fit the Earth & Environment category accurately as they are more People, Society & Culture classes. Geography Success & Retention combined for all classes: 73.6 for average success and 87.6 for average retention, according to the DSR data. While in a slight decline over 3 years, this data is on par with District averages. Average Course Success / Retention for Science & Math Division equals 73-74% success & 85-88% retention. GEOG is slightly below the average for the Division average.

Below is an example of success & retention in GEOG 1 as tracked by the Rocklin Campus full-time instructor on the Rocklin Campus. Looking at graph, the thinner, darker line is the class average, which is steady with a recent increase. For success (thick, purple line), notice a big dips between 2014-15 but a recent increase in 2017. With new resources related to study guides, practice exams, videos, etc., student have likely improved with increased learning aids.



For Online class, the data is limited due to new offerings in GEOG 1 over the past 2 years by a new instructor. Recent data suggests perhaps as low as 1/2 do not succeed. Likewise, nearly 1/2 student often drop before the semester end. Even with limited data over the past year, there is room to improve success & retention. A large test bank will be provided at the end of the semester to allow student to practice.

Regarding the Guided Path initiative, GEOG has completed an easy pathway for folks in both Geography and GIS to complete their course work in two (2) years. The GEOG folks continue to work with counselors to make it easier for students to achieve a GEOG transfer degree. We hope this helps fill all GEOG classes, especially those in cultural and GIS.

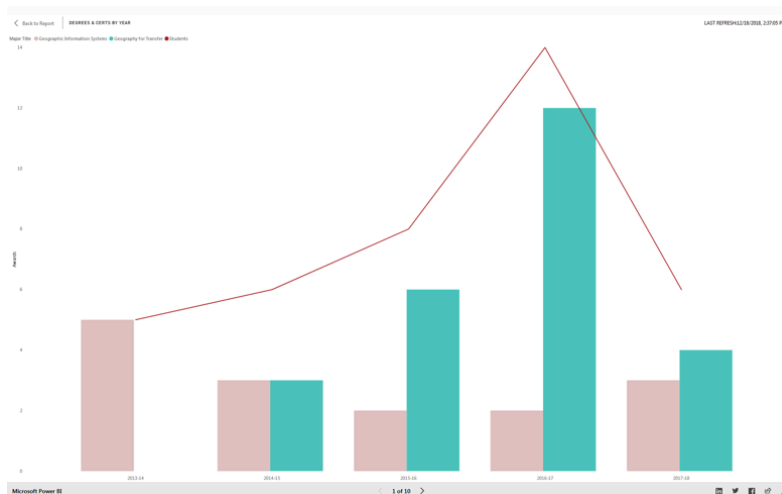
3b) Enrollment Trends: Assess and evaluate the three-year enrollment trends in your program's DSR data. In addition, analyze any relevant information found in the data dashboard related to these trends. Include an analysis of fill rates, wait lists, course cancellations, program completion, and classroom use. Address separately the data for on ground and online courses, as well as the data for the campus or centers at which you operate. Please describe any challenges experienced by the program; if you determine that you need to improve the program's performance in any way, please describe how you plan to achieve this goal. As relevant, please address your program's role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

## DEPT. STATISTICS REPORT (DSR) - Overall Statistics

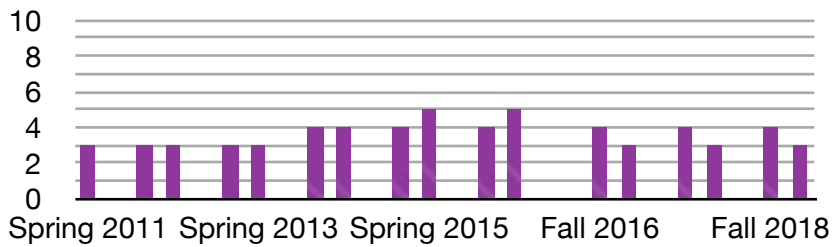
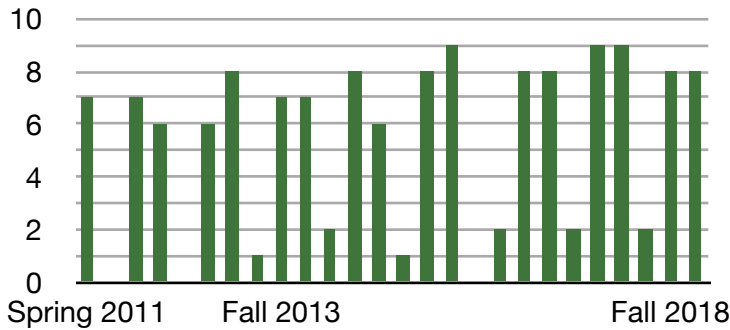
FALL 2017 Counts: 537 enrollments with 24 sections and 11 instructors

Percentage (%) Fill: Fall 2017 & Spring 2018 was roughly 3/4 or 75%

Degrees & Certificates: GIS remained steady at 2 - 4 each year while Geography for Transfer dropped from 12 in 2016-17 to 4 in 2017-18, which is more along the average in the past.



GEOG 1 enrollment from Spring 2015 declined from 279 to 231 students enrolled one year later. By Fall 2018 that number was up to 264 (with 9 sections). The results indicate stable enrollment. Below are the Departments own data represented in charts for the two (2) main classes by sections offered - GEOG 1 (top chart) and GEOG 2 (below it) in terms of total sections in the past few years.



GEOG 2, on the other hand has dropped dramatically from earlier numbers. In the Spring of 2015 - enrollment equaled 120 (with 4 sections) and by Fall 2018 declined to 57 (with 3 sections). Overall, GEOG 2 -Cultural Geography is about 1/3 enrollment (566 compared to 1506 for GEOG 1 - Physical Geography).

Others: All the other classes usually are just 1 section, such as GEOG 3 - California GEOG and now GEOG 4 - Weather & Climate.

3c) Equity: Analyze and evaluate your program’s performance in promoting and/or achieving equity for at risk students and equity in general [or “promoting and/or achieving equity and diversity]. Based on this analysis, describe any plans you have to sustain or improve the program’s contribution to student equity as a central component of student success.

Looking at the Race/Ethnicity dashboard, GEOG has largely White, followed by Hispanic/Latino, then Multi with approximately 5 percent African American / Black. Several classes usually have Veterans, as indicated by the 25 individuals. These smaller population of African American, for example, deserve some extra attention given some evidence these groups perform below average. Only ½ of the GEOG students are college ready. Lower exam scores in GEOG 1 reflect challenges in studying and reading the material.

Average Course Success & Retention for Science & Math Division equals 73-74% success & 85-87% retention on par with the GEOG Department. Continuing with general trends:

Highest or near highest group: 73 to 76% among White (which is the largest numbers close to 24,000 in raw numbers) and Asian ethnic group for Science & Math.

Lowest 57 to 45% for Science & Math among African-American (1300 folks) performing slightly better in sub-group of Earth & Environment at 59%.

Continuing with a large ethnic group among Hispanic / Latino (with over 6,200 folks) equals roughly 69%, which is lower in Science & Math at 61% -- but near the overall average in Earth & Environment at 67%.

Other disadvantaged groups at risk for success are "1st generation" (about 7,100 folks) with lower success at 68% and in the same ball park figure within Earth & Environment at 66%.

Geography hovers around 70% overall with around 85% retention (70/85%). However, looking at some lower achievers:

55/82% among African-American

65/85 among Hispanic / Latino

68/83% among Low-Income

3d) Optional information: Please describe and evaluate any additional relevant information supporting the evaluation of your program's success. Enrollment chart illustrates potential future declines (pink column) due to the MAP misrepresentation. In other words student perceive GEOG just under "Earth & Environment." We shall see in the future.

Department data collected from Spring 2014 to Spring 2019 appears consistent with DSR data in the chart to follow.

<b>All Campuses</b>									
<b>Semester</b>	<b>Geog 1</b>	<b>Geog 1L</b>	<b>Geog 2</b>	<b>Geog 3</b>	<b>Geog 4</b>	<b>Geog 5</b>	<b>Field Studies</b>	<b>GIS</b>	<b>Total</b>
<b>Spring 2014</b>	7	4	4	1	1	1	2	6	26
<b>Summer 2014</b>	2	1	0	0	0	0	0	1	4
<b>Fall 2014</b>	8	3	4	1	0	1	1	4	22
<b>Spring 2015</b>	6	2	5	1	0	1	1	4	20
<b>Summer 2015</b>	1	0	0	0	0	0	0	1	2
<b>Fall 2015</b>	8	3	4	1	0	1	1	3	21
<b>Spring 2016</b>	9	2	5	1	1	1	1	4	24
<b>Summer 2016</b>	2	1	0	0	0	0	0	1	4
<b>Fall 2016</b>	8	3	4	1	0	1	1	3	21
<b>Spring 2017</b>	8	2	3	1	0	1	2	4	21
<b>Summer 2017</b>	2	1	0	0	0	0	0	0	3
<b>Fall 2017</b>	9	3	4	1	0	1	0	5	23
<b>Spring 2018</b>	9	2	3	1	1	1	2	5	24
<b>Summer 2018</b>	2	1	0	0	0	0	0	0	3
<b>Fall 2018</b>	8	3	4	1	0	1	0	4	21
<b>Spring 2019</b>	8	3	3	1	1	1	1	4	22

3e) Analysis and Planning: Referring to the analysis in 3a-d, to your ongoing planning and assessment documents, and to any relevant information from section 2 above, please describe your program's plans to maintain or increase its effectiveness and analyze and evaluate your efforts to achieve these goals. As relevant, please address your program's role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

GEOG continues to monitor trend lines in the common areas of tracked data, such as success & retention and student course learning outcomes. GEOG now has baseline data numbers based on new data provided by the Sierra College research department (Dashboards). The challenge will be to

- 1) identify folks in class largely based on exam results and mid-semester performance
- 2) approach and assist mid-semester to help improve grades before it's too late
- 3) refer to counseling and other institutional service to intervene and help improve overall success among these groups.

Related to curriculum, GEOG will modify the GIS skills certificate optional classes and see if this improves students progress more easily through all the requirements looking at the number of certificates awarded in the future. Like Earth Science, we are in the process of restructuring our field studies classes to "counter the effect of the lack of repeatability they suffered" ... following the model of other departments (such as Biology & Photography).

**4) Resources:** This category assesses the adequacy of current resources available to the program and describes and justifies the resources required to achieve planning goals by relating program needs to the assessments above.

4a) Please describe the future direction and goals of your program for the next three years in terms of sustaining or improving program effectiveness, relevance, and currency. Include any relevant analysis of equity goals and the development of MAPs, interest areas, and guided pathways. Please incorporate analysis of any relevant outcome or other data in this description, including any data from the dashboard.

Overall, the department number 1 priority is to hire a new full-time instructor to provide quality education in Geography related to motivating student to complete their pathway in *Geography for Transfer* and to add diversity to the department faculty. A broad instructor pool will appeal to all types of students from all socio-economic, gender & ethnic backgrounds. Currently only one full-time instructor is available to teach many of the classes. Student have requested diversity in instruction and classes. With the near retirement of the NCC full-time faculty member, this community will be in need of instruction too. Part-time faculty is limited at the moment and expected to decline. The GIS program is also in great need of a full-time faculty member to streamline the schedule, provide expertise instruction & consistent curriculum, as well as mentor students for the Skills Certificate. Equipment & Facilities are also need... more specifics below.

4b) Please describe and justify any projected requests for additional staff, new or augmented technology/equipment, and additional or remodeled facilities necessary to support these goals. Please incorporate any relevant data related to SLOs, student success, and equity.

Equipment/Technology:



Carrying over from the previous program review 2016, lighting is poorly configured in the primary room due to no plastic covers to properly diffuse the lighting. Sewell Hall has new lighting in the halls and many classrooms. It's past due to replace those lights in the S-103 classroom be replaced with newer technology and covers. Regarding software, we request continued support for the GIS software from ESRI, the industry standard. While the Division provides the current funding, we believe the Department's budget should be augmented to fold that cost into the GEOG budget. Likewise, we request that the Department receive a *CalCard* to purchase supplies in the future. At the moment we used Biology staff, then get reimbursed.

Regarding distance learning, we request the District increase its Testing Center capacity for all departments. The Testing Center is woefully inadequate to deal with the large number of students requiring test proctoring. In fact, we feel many instructors hesitate to develop online material until they have the ability to assure student take the test fairly (with a host of issues from identity to sharing answers online).

As mentioned below, technology and equipment are probably not hindering the Departments key indicators, such as retention, success, and CSLO feedback. Rather, increased staffing & more classroom facilities we feel are key to success, especially hiring a full-time Geographer in the next cycle.

Facilities:

Geography's dedicated classroom S-103 has been upgraded to the newest smart classroom as November 2015. Yet the Department, like so many others, cannot grow without actual classrooms increasing. In the chart, exclusive means it is the department's room while shared is multi-department. **Lower values are better.**

Program	FTES	Exclusive	Shared	Total	Ratio
Earth Sciences	84	1	0	1	84
Bio Sciences	268	5	2	6	44.67
<i>Geography</i>	60	1	0	1	60
Chemistry	223	3	3	5.5	40.5
Astronomy	80	2	0	2	40
Physics	57	1	3	2.5	22.8

#### Details:

Using ESCI chart on FTES - to facilities ratio as shown in the table, GEOG also suffers from access to another classroom. (Note: shared = 0.5 value to achieve total summation). Note ESCI then GEOG have poor values, with most at 40 or lower while GEOG is at 60. In fact, S-103 (GEOG dedicated classroom) is not entirely *exclusive* and is partially shared with ESCI. (Note the data is from 3 years ago.)

#### Staff:

It should be noted that ESCI traditionally has had 3 full-time faculty members. (Note: Alex Amigo retired in the in 2019 temporarily dropping ESCI to 2). The related field of GEOG has only 1 full-time faculty at the Rocklin Campus. The primary Rocklin Campus faculty member has numerous duties in addition to teaching, such as Department Chair, GIS program, marketing, program review, etc., which can be taxing on the teaching duties. GEOG needs another full-time faculty member for staffing and quality control stability of the department as we expect several part-time by 2020.

#### Areas of need:

- GIS program & CTE funding
- Online development
- Physical Geography as well as the courses in Weather & Climate
- Physical Labs and Weather & Climate Labs

Currently the Department has no F/T staff teaching GIS (with the except of a 1 unit overview course - GEOG 85). In order to provide consistency in instruction as well as grow the GIS certificate program, the Department needs another full-time instructor. Likewise, comparing GEOG to Anthropology, this Dept. has only 2 (3 units) OL courses (and the GEOG 85 mentioned above).

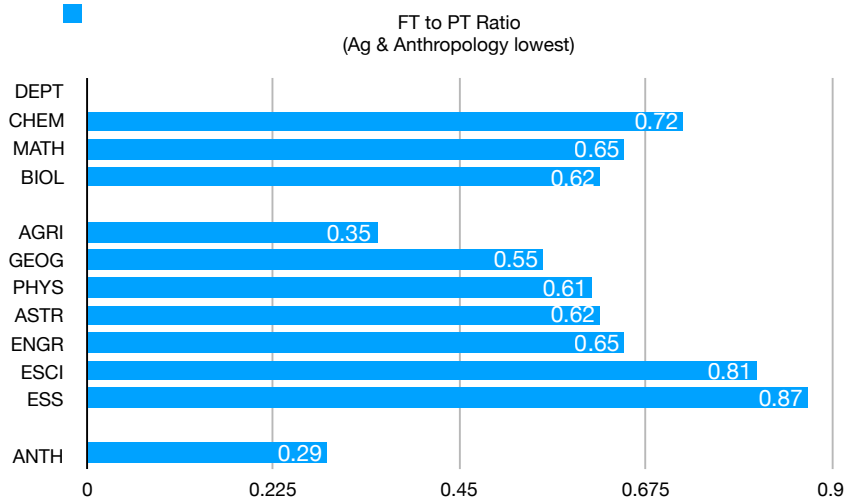
Finally much of the adjunct faculty teach Physical Geography and related courses such as GEOG 4 - Weather & Climate. This class has a higher level of expertise, which is likely not present at the moment. GEOG would like to growth these types of geography classes.

Using the most recent Dashboard data, the charts to follow illustrate the Full-time (FT) to Part-time (PT) ratio.

> See next pages for full charts.

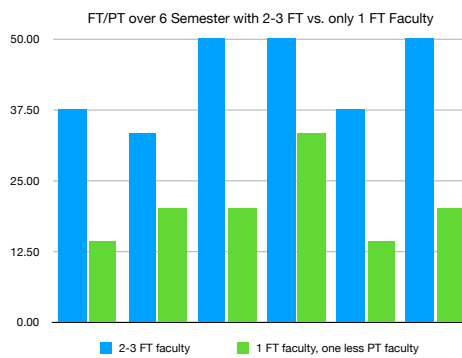
Cumulative Ratios - includes instructors from other department & other FT teachers

DEPT	Cumulative FT/PT Ratio	FTEF 2018-SPR	Sections 2018-SPR	Recent Hire
CHEM	72%	17.34	67	X
MATH	65%	50.46	180	X
BIOL	62%	26.56	94	X
AGRI	35%	3.36	18	X
GEOG	55%	4.13	26	
PHYS	61%	5.38	36	
ASTR	62%	4.52	29	
ENGR	65%	2.09	11	
ESCI	81%	4.89	31	
ESS	87%	1.64	11	
ANTH	29%	7.26	39	X
* skewed	Alex Amigo 1 OL	in Earth Science	not in GEOG Dept.	
	*Carol Cox	at NCC	100% NCC	
Source:	Feb 2019 Dashboards			



FT/PT details AND scenario of future with only 1 Full-time Instructor

Teaching Faculty	2015-fall (80)	2016-spring (40)	2016-fall (80)	2017-spring (40)	2017-fall (80)	2018-spring (40)	Average	Dashboard
<b>F</b>	3	2	3	2	3	3	2.7	
<b>P</b>	8	6	6	4	8	6	6.3	
<b>ratio</b>	37.50	33.33	50.00	50.00	37.50	50.00	42.11	54.59*
<b>F*</b>	1	1	1	1	1	1	1.0	
<b>P</b>	7	5	5	3	7	5	5.3	
<b>ratio</b>	14.29	20.00	20.00	33.33	14.29	20.00	18.75	
<b>*fewer instructors</b>								
<b>*decline for both full time &amp; 1 part time instructor</b>								
<b>Source: Dashboards</b>	raw numbers from	"Teaching Faculty"						*differs from simple raw number math



The second chart illustrates present staffing (tabular data) over the last 6 semesters. Using simply math of average Full-time (including Alex Amigo in ESCI - who is out of department & taught one or two GEOG 1 OL class), the average equals 2.7 F/T (see Average column). This top number divided by the average of P/T staff equal a F/T vs. P/T ratio, which is below the district goal of 50% FT/PT ratio. If you play out a scenario with only 1 F/T (in green or second paired column), then ratio drops to between 12.50% and approximately 30%

Even with some classes that may not be offered at NCC in the future -- let's say with a decline of one FT instructor and one PT instructor overall, the projected FT/PT ratio is very low (about 20%). This clearly illustrates a future need for a full-time instructor replacement by 2020.

4e) Please check the appropriate boxes in the chart below indicating the general reasons for the resource requests described above (please check all that apply):

Function >	Maintainance	Development	Growth	Safety	Outcomes	Other
	X - Instruction	X GIS	X		X	

5a) Based on the analysis above, briefly summarize your program’s strengths, weaknesses, opportunities, and challenges.

Strengths - The Department continues to remain consistent with the District's core mission teaching key concepts in geography & geographic literacy: citizenship, respect for diverse populations, increase awareness as to the importance of sustainability, elaborate on global connection in the emerging world economy, and to direct students toward technical, high paying jobs related to Geospatial technology. Geographic literacy and critical thinking skills help students succeed in both their academic and career paths. To augment the learning experience, the Department continues to encourage instructors to use meaningful & innovative teaching tools, such as movie clips, graphics & charts, in-class exercises, presentations, hands-ons assignments, and peer-directed activities. To tap into emerging technologies and student needs, instructors are encouraged to build online resources, online videos, online study guides and practice tests. In short, numerous resources are readily available for those students and faculty is tracking the potential impacts on success & retention.

Weaknesses - The Department needs another full-time faculty member to grow the GIS program and increase the breadth of geography classes in the Department - specifically teaching specialized GIS classes, weather & climate ones, world regional, and perhaps new ones. Finally the GIS Skill Certificate needs revisions by 2020 to streamline the course options, especially the additional units component.

With the new Interest Areas, the branch of Human GEOG is not under People, Culture & Society. Faculty members agree this completely misses the interdisciplinary focus of GEOG, lumping the department entirely into Earth & the Environment. This interest area serves physical classes -- but not cultural classes and likely will impact enrollment and course offerings.

We have only 3 main offerings (GEOG 1, 2, 3) and now GEOG 4 – Weather & Climate. Details: GEOG 3 is only offered once per year. GEOG 1 is approximately double GEOG 2 in offerings. So, to continue to offer GEOG 1 over GEOG 2 exacerbates this problem. The Department would like to diversify its class offerings for the transfer degree students.

5b) How has the author of this report integrated the views and perspectives of stakeholders in the program? Staff / Faculty & outside experts have had inputs into this review.