Comprehensive Program Review Report

Program Review - Geography

Program Summary

2023-2024

Prepared by: Christopher Krause

What are the strengths of your area?: The Geography program continues to be one of the most popular offerings in the science and social science divisions. Many students enroll in GEOG 001 (Physical Geography) and GEOG 001L (Physical Geography Lab) seeking general education and transfer credit as these courses are classified as a physical science. Similarly, many students who enroll in GEOG 002 (World Regional Geography) are seeking general education and transfer credit as this course is classified as a social science. Since Spring 2017, GEOG 002 has been a major requirement for the Associate in Arts in Elementary Teacher Education for Transfer major, one of the most common majors on campus.

Between the 2017-18 academic year and the 2022-2023, enrollment in geography courses increased ~29% from 104.8 FTEs to 135.5 FTEs. For the first time, the enrollment in geography courses surpassed the pre-COVID peak. There were 116.6 FTEs in the 2019-2020 academic year. Enrollment is highly concentrated in GEOG 001 and GEOG 001L which account for ~57% and ~10% (respectively) of the department's FTEs. Enrollment in GEOG 002 accounts for ~25% of the department FTEs. Enrollment in MET 001 accounts for ~8% of the department FTEs.

Excluding the 2022-2023 academic year, overall student success rates in geography courses have remained fairly consistent during most the past six academic years ranging from a low of 84.0% in the 2017-2018 academic year to a high of 89.9% in the 2020-2021 academic year. This past academic year (2022-2023) saw a dramatic decline in success rate: 77.7%.

What improvements are needed?: This year more than in the past, it was important to disaggregate the student success data in an effort to better identify potential causes behind the observed decline in success rate.

The first disaggregation that was examined was by course. Though declines were observed in every course, only the decline in GEOG 002 was statistically significant ($p<0.05$ with a chi-squared test). This decline was nearly 18% dropping from 89.6% in 2021-2022 to 71.9% in 2022-2023. Many different disaggregations of these GEOG 002 courses were examined. The most significant difference was found between face-to-face students (80.0% success rate) versus online students (68.1%). Further investigation determined that the online late-start sections had the lowest success rates (at least in part because of a high proportion of students withdrawing from the course). In the future, online courses will not be offered in the condensed, late-start schedule. Additionally, instructors of online courses will be encouraged to set expectations early in their courses about the necessary time and time management required to succeed in their course.

Disaggregations were also examined for all the department's courses combined (GEOG 001, GEOG 001L, MET 001, and GEOG 002). Several disparities were identified (shown in order of the greatest disparity to the least disparity):
- African-American students (61.9%) versus white students (82.3%)
- African-American students (61.9%) versus Hispanic students (77.1%)
- first-time students (66.7%) versus continuing students (78.2%)
- students receiving AAC services (68.1%) versus students not receiving AAC services (78.8%)
- student athletes (69.3%) versus not student athletes (78.5%)
- Pell recipient (80.6%) versus not Pell recipient (75.4%)

Taken together, these disparities suggest that additional support such as study guides and/or out-of-class tutoring should be provided to all students to make success more equitable. For example, I wonder if geography having a supplemental instructor like many of the other courses in the science division would be beneficial. Additionally, existing student support structures on

campus should be better utilized (such as collaborating with student athlete academic advisors).
Describe any external opportunities or challenges.: In this upcoming spring semester (spring 2024), Introduction to GIS (currently ESCI 055) is scheduled to be offered at the Tulare campus. Historically, it has been challenging for this course to make minimum enrollment. Therefore, work started months before the schedule was released to advertise and market this course. After meeting with the articulation office, it was determined that this course will almost certainly not transfer to other institutions. This unfortunate reality led to a re-focusing of our recruitment efforts on non-traditional students such as businesspeople and government officials looking to upskill.

During the 2022-2023 academic year, a second nationwide search was conducted for an additional tenure-track geographer. The applicant pool was much larger than the previous year and after two rounds of interviews, the hiring committee ultimately offered the position to our preferred candidate. The candidate accepted the position and was hired. Unfortunately, a few weeks later this candidate rescinded their offer to continue with the position. Fortunately, the division was able to hire an adjunct later in the summer before the Fall 2023 semester began which minimized the number of cancelled courses. Another nationwide search is about to begin. To maximize the potential of success, the job search has begun months before the previous job search and the division is being much more aggressive in our advertising efforts. Another additional full-time tenure-track position will allow the department to greatly expand our course offerings to better met student demand.
Overall SLO Achievement: Reporting of SLOs has been inconsistent in past years. There appears to be a misalignment of SLO assessment and reporting. Guidance has been sought out from the Curriculum & Outcomes Assessment Coordinator and will be implemented after the software transition.

SLOs are being assessed both through in-class assignments as well as out-of-class exams. Across the different geography courses, the majority of students are demonstrating satisfactory achievement to the course outcomes.
Changes Based on SLO Achievement: In future semesters, more authentic assessments should be developed which require the students to apply their geographic understanding to analyze and address real-world scenarios. Presently, students are asked to do so during in-class discussions but they are not currently formally assessed in this way. Additionally, assessments developed for the course SLOs will be shared among all instructors teaching the course so assessment will be consistently reportable among all course sections.

This kind of change was already proposed in curriculum updates to MET 001.
Overall PLO Achievement: NA
Changes Based on PLO Achievement: NA
Outcome cycle evaluation: It appears that geography courses may be out of cycle with assessment likely needed in all geography courses. Guidance has been sought out from the Outcomes & Assessment Committee Co-Chair.

Action: 2023-2024 IF-AT Assessment Cards

Purchase IF-AT cards for formative and summative assessments.

Leave Blank:
Implementation Timeline: 2023 - 2024
Leave Blank:
Leave Blank:
Identify related course/program outcomes:
Person(s) Responsible (Name and Position): Christopher Krause
Rationale (With supporting data): The Immediate Feedback Assessment Technique (IF-AT) is an assessment technique where students indicate their answers to multiple-choice questions on a card that looks similar to a lottery scratch-off ticket. Whenever a student answers a question correctly, they get immediate confirmation because they will see a star on the IF-AT card. If the student does not see the star, then they learn immediately that they did not answer the question correctly. Importantly, they now have the opportunity to answer the question again until they discover the correct answer (with the potential to earn partial credit). Research completed by other users of this system have shown that students have greater retention of the assessed material when they immediately get the feedback of what the correct answer was. Feedback from COS students currently using this system in GEOG 001 and MET 001 courses has overwhelmingly been positive. The longitudinal impact of this system on content mastery has not yet been assessed but will be throughout its use this semester.
Priority: High
Safety Issue: No
External Mandate: No
Safety/Mandate Explanation:

Program Review - Geography

Adjustment to Base Budget - Purchase IF-AT cards for formative and summative assessments. (Active)
Why is this resource required for this action?: To continue utilizing the IF-AT system (and the corresponding benefits it provides to students), these IF-AT cards will need to be purchased regularly for use in formative and summative assessments.
Notes (optional):
Cost of Request (Nothing will be funded over the amount listed.): 2250

Link Actions to District Objectives

District Objectives: 2021-2025
District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.
District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.
District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.
District Objective 3.1 - Reduce equity gaps in course success rates across all departments by 40% from 2021-2025.

Action: 2022-2023 Sycamore IM 201 Lab Conversion

Convert Sycamore IM 201 from a classroom to a computer lab.

Leave Blank:
Implementation Timeline: 2022 - 2023
Leave Blank:
Leave Blank:
Identify related course/program outcomes: 1 Perform applications and activities related to the global distribution of the worlds major climates, ecosystems, and
physiographic (landform) features.
2 Perform applications and activities related to basic concepts of physical geography in the analysis of real-world variations in environmental patterns.
3 Perform applications and activities related to the atmospheric, geomorphological, and biotic processes that shape the Earths surface environments.
4 Perform applications and activities related to the size, shape, and movements of the Earth in space and their importance to environmental patterns and processes.
5 Perform applications and activities related to the scientific method and practical experience using the tools and concepts of physical geography (laboratory
Person(s) Responsible (Name and Position): Christopher Krause
Rationale (With supporting data): The Physical Geography Lab (GEOG 001L) courses have begun to use specialized geospatial technologies. These technologies facilitate students' learning in ways not possible with paper maps alone. Finding an available computer lab elsewhere on campus has proved to be quite challenging and has limited when the course can be scheduled. Historically, this has led to the course because offered in a different computer lab each semester for the past 3 semesters. Understandably with the course moving to a new location each semester, Tech Services has been unwillingly to install the desktop suite of geospatial technologies we have licensed. Therefore, student instruction has been limited to the online versions of the technology which lack some of the functionality of the desktop software. If Sycamore IM201 was converted into a computer lab, GEOG 001L would always be scheduled in there so it would be much easier for Tech Services to install and maintain the desktop version of the software in this one specific lab. Additionally, the lectures and labs could be taught in this room back-to-back, which would not only be easier for the students but would allow the instructor to further assist students before/after class rather than them packing up to move and setup in another room. Other geography courses taught in this space would also benefit from this conversion because geospatial technologies could be used to supplement their class instruction.
Priority: High
Safety Issue: No
External Mandate: No

Program Review - Geography

Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2023 - 2024 10/13/2023

Status: Action Discontinued

Other classrooms have been converted into computer labs making it easier for the geography department to find an open computer lab for our GEOG 001L physical geography lab course. The availability of these computer labs borrowed from other departments may change in the future, but for now we are tabling this action.

Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Facilities - Converting Sycarmore IM 201 from a classroom into a computer lab (Active)

Why is this resource required for this action?: The science division does not have a computer lab. As new technology becomes available to implement into the classroom, Geography Astronomy, and Earth Science depend heavily on other department/divisions for lab space.

Specifically, The geography department has transitioned into the digital age and our incorporating geographic information systems (GIS) into our Physical Geography Lab course (GEOG 001L). This semester, we began offering this course at each campus for the first time ever. Historically, only the Physical Geography lecture (GEOG 001) was taught at the satellite campuses. Across the board, we have seen an increase in GEOG 001L enrollment as we have offered more sections of it. We are also near 100% in all our GEOG 001 sections as well.

With the increasing demand for GEOG 001L, we are planning to offer at least two sections per semester here in Visalia (while continuing to offer one section at the satellite campuses). This past three semesters, it has been quite a burden to find computer lab availability to teach GEOG 001L. In fact, I've taught in 3 different computer labs these past 3 semesters and it looks like I'll be teaching in yet another different computer lab in the spring. Since we are bouncing around to different classrooms each semester, IT does not want to install any of the desktop software since it would need to be installed again in a different computer lab the next semester. Therefore we have been limited to online based GIS tools.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 175000

Link Actions to District Objectives

District Objectives: 2021-2025
District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.
District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.
District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.
District Objective 3.1 - Reduce equity gaps in course success rates across all departments by 40% from 2021-2025.

Action: 2023-2024 Purchase Earth, Moon, Sun Physical Models

Purchase physical models that show the dynamics of the relationship between the Earth, Moon, Sun.

Leave Blank:

Implementation Timeline: 2023 - 2024

Leave Blank:

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Identify related course/program outcomes:

Program Review - Geography

Person(s) Responsible (Name and Position): Christopher Krause, assistant professor of geography
Rationale (With supporting data): These models will help correct students' misconception that seasons are the result of the distance between the Sun and the Earth but rather has to do with the Earth's tilt impacting the intensity of solar radiation throughout the year.
Priority: High
Safety Issue: No
External Mandate: No
Safety/Mandate Explanation:

Resources Description

Equipment - Instructional - Class set (10) of United Scientific Earth Sun Planetarium (Active)
Why is this resource required for this action?: This equipment will be used to teach students about the reason why Earth experiences seasons.
Notes (optional):
Cost of Request (Nothing will be funded over the amount listed.): 750

Link Actions to District Objectives

District Objectives: 2021-2025
District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.
District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.
District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.
District Objective 3.1 - Reduce equity gaps in course success rates across all departments by 40% from 2021-2025.

Action: 2022-2023 Annual Subscription of ESRI Site License

To maintain student's access to modern the cutting-edge geospatial technologies, we are requested a renewal of our college's site license with ESRI.

Leave Blank:
Implementation Timeline: 2021 - 2022, 2022 - 2023
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Identify related course/program outcomes:
Person(s) Responsible (Name and Position): Francisco Banuelos and Christopher Krause
Rationale (With supporting data): Many of the student learning outcomes for geography courses can be taught with the help of geospatial technologies. For examples, GEOG 001 SLO #1-3, GEOG 001L #1-2, and GEOG 002 #1. These technologies also prepare students to engage with and interpret real geographic data, the likes of which they will continue to encounter well after their time in school through the news media, government sources, etc.
Priority: High
Safety Issue: No
External Mandate: No
Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2023 - 2024 10/13/2023
Status: Action Completed
Geography's base budget was augmented by $2,500 annually to provide for future renewals of ESRI site licenses so our students will be able to learn through the use of cutting-edge geospatial technologies.
Impact on District Objectives/Unit Outcomes (Not Required):

Program Review - Geography

Update Year: 2022 - 2023 10/14/2022
Status: Action Completed
n Fall 2021, the division invested into acquiring a site license for Esri, a leading geospatial technologies comapny. These technologies are already being used to supplement instruction in all geography courses and provide students the opportunity to interact with more modern forms of geographic data than the existing inventory of paper maps could provide. The impact of implementing these new technologies has not yet been fully assessed since their adoption was so recent but success rates in the GEOG 001L course have increased from 87.7% in the year prior to this adoption to 91.2% in the first academic year after adoption.
Impact on District Objectives/Unit Outcomes (Not Required):

Update Year: 2022 - 2023 10/14/2022
Status: Continue Action Next Year
We received one-time funds during the 2021-2022 year. We are requesting on-going funding to maintain the subscription.
Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Adjustment to Base Budget - Annual site license for Esri geospatial technologies. Last year (2021-2022), we received one-time budget to purchase the subscription. This proposes augmentation to the base budget. (Active)
Why is this resource required for this action?: These geospatial technologies allow students to integrate and apply their geographic understandings in modern and innovative ways.
Notes (optional): This is a reoccurring cost of $2,500 annually.
Cost of Request (Nothing will be funded over the amount listed.): 2500

Link Actions to District Objectives

District Objectives: 2018-2021
District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objectives: 2021-2025
District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.
District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.
District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.
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Action: Growth Position

Over the past decade, geography has offered on average 25.6 LHE. This course load has historically been taught by a combination of one full-time faculty member, retired Dave Howell, an assortments of adjuncts, and often times Eric Hetherington teaching a section of Physical Geography. For a variety of reasons, the individuals who had been adjuncting are now unable to do so. Securing replacements adjuncts has proven to be quite difficult. One of the most limiting factors is that no nearby institutions offer a graduate level geography program. A growth position would facilitate a wider applicant pool as individuals from further away would be more likely to apply for a full-time position than an adjunct one. Having a second full-time geographer would allow the department to provide additional sections of courses to better support the general education program with GEOG 001 (Physical Geography), GEOG 001L (Physical Geography Lab), and GEOG 002 (World Regional Geography). Academic counseling has expressed a specific need to offer more GEOG 002 sections as it is a requirement for elementary education majors (the third largest major on campus). GEOG 001 & GEOG 001L continue to be quite popular courses filling every section offered (often overcapacity even). With an additional faculty member, providing these courses at the satellite campuses in Tulare and Hanford is planned. These courses have successfully been offered there before but this semester due to lack of adjuncts a course was unable to be offered in Hanford. The addition of another geography faculty would also allow flexibility to Eric Hetherington to teach more geology courses by

relieving him of teaching a Physical Geography section (unless he would like to continue doing so). Lastly, with the foreseen growth of the geography program with a second full-time geographer, recruiting enough students to make enrollment for an introductory geographic information systems course would be much more likely. This course (ESCI 155) is already on the books (thank you Larry Owens and Dustin White) but has struggled to meet enrollment. As more students get engaged in geography through general education coursework, there will be a larger pool of students who could consider enrolling in this course.

Leave Blank:

Implementation Timeline: 2021 - 2022, 2022 - 2023

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Identify related course/program outcomes:

Person(s) Responsible (Name and Position): Francisco Banuelos, Ryan Freose, and Christopher Krause

Rationale (With supporting data):

Priority: High

Safety Issue: No

External Mandate: No

Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2023 - 2024 10/13/2023

Status: Continue Action Next Year

During the 2022-2023 academic year, a second nationwide search was conducted for an additional tenure-track geographer. The applicant pool was much larger than the previous year and after two rounds of interviews, the hiring committee ultimately offered the position to our preferred candidate. The candidate accepted the position and was hired. Unfortunately, a few weeks later this candidate rescinded their offer to continue with the position. Fortunately, the division was able to hire an adjunct later in the summer before the Fall 2023 semester began which minimized the number of cancelled courses. Another nationwide search is about to begin. To maximize the potential of success, the job search has begun months before the previous job search and the division is being much more aggressive in our advertising efforts. Another additional full-time tenure-track position will allow the department to greatly expand our course offerings to better met student demand.

Impact on District Objectives/Unit Outcomes (Not Required):

Update Year: 2022 - 2023 10/14/2022

Status: Continue Action Next Year

During the 2021-2022 academic year, a nationwide search was conducted for an additional tenure-track geographer. The applicant pool was relatively small and after two rounds of interviews, the hiring committee ultimately decided to declare a failed search. Fortunately, the division was able to hire an adjunct later in the summer before the Fall 2022 semester began. This minimized the number of cancelled courses. Another nationwide search is already underway. To maximize the potential of success, the job search has begun months before the previous job search and the division is being much more aggressive in our advertizing efforts. Another additional full-time tenure-track position will allow the department to greatly expand our course offerings to better met student demand

Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Personnel - Faculty - Growth faculty position (Active)

Why is this resource required for this action?: Geography courses are very popular within the general education program and we have been unable to offer enough in-person sections to meet student demand because of the unavailability of in-person adjunct instructors.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 120000

Program Review - Geography

Link Actions to District Objectives

District Objectives: 2018-2021
District Objective 1.1 - The District will increase FTES by 1.75% over the three years
District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years
District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025
District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.
District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.
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