

# 2020 Student Services Program Reviews



## CAN Program Review (Student Services) - STEM Center (Fall 2021)

### STEP 1: Annual Updates

#### 2020-2021

**1. Major Accomplishments & Challenges (500 Word Limit):** Over the course of the GANAS grant (Oct. 2016-Present), the STEM Center has achieved several major accomplishments. First, the Embedded Peer Instruction Program (EPIC) currently covers 14 STEM courses: Math, Physics, Computer Science, Biology, Chemistry, Engineering and Environmental Science. A QED study using PSM found that students who participated in EPIC for Calculus 1 had statistically higher success rates than a comparison group of students who did not participate in EPIC (83% vs. 64% respectively). The STEM Peer Mentoring Program was begun and has since been merged with the basic skills tutoring to provide peer support to students across the campus. The Faculty Learning Program (FLP) was piloted with STEM faculty and has been institutionalized to enable faculty from all disciplines to partake in this professional development experience. The STEM speaker series continues to evolve and bring professionals from diverse backgrounds and disciplines to speak to students. The STEM transfer program aided 78 STEM students to transfer to 4-year institutions as STEM majors (majority Cañada home campus). A job shadow program was created and implemented twice, providing career exploration, exposure to STEM professionals and STEM workplaces and preparation for STEM internships to 34 STEM mostly minority STEM students.

One of our major accomplishments was in response to our greatest overall challenge – COVID-19 and the shift to the online environment. In less than a week, the tutoring and peer mentoring programs created, advertised and implemented online tutoring and peer mentoring services. The speaker series has shifted to a more interactive format, allowing students to interact with the speakers during the sessions. The job shadow moved online and allowed students to make virtual visits, via zoom, to STEM workplaces and meet with STEM workers. The University Relations Manager provided crucial follow-up with STEM students who were trying to decide where to transfer in the fall of 2020, connecting them to people and resources at 4-year universities. Finally, the STEM team partnered with the Learning Center, Eso Adalante, the counseling department and Promise to offer a virtual three-day mini-bridge COLTS-CON program. This conference-style event included a STEM track when declared STEM majors or those interested in learning about STEM majors participated in STEM-focused workshops, sample classes with discipline faculty and panels with continuing STEM students. This was offered to students synchronously and asynchronously, allowing even students with limited time for extracurricular activities to participate.

Although we successfully transitioned our services online, we still are experiencing many of the same challenges that we experienced prior to COVID-19. First, we struggle with increasing participation in our programs. Research shows that Latinx and other minority and/or low-income students are less likely to participate in academic programming than their more affluent peers without intrusive invitations. Second, we continually strive to align our programs with other programs and departments on campus. As our students, particularly Latinx and other minority students, have limited time to devote to their education outside of class, it is particularly important that we align our services and streamline processes and supports for students.

**2. Proposed Changes:** We are actively working to improve STEM Center activities and programs. We are doing several things to improve participation in our activities and events. First, we are working on how we can be more effective with our messaging. As many students are “living on their phones,” we want to make sure we do not bombard them with messages to the point that they don’t read any of them. We are working to combine messages and map out timing so that fewer but more impactful messages are sent to students. Second, we are working to build faculty awareness and buy-in. A recent survey of students who participate in tutoring revealed that the number one reason that students sought out tutoring was because a faculty member recommended it. We have created a faculty resource page with links to our activities, a weekly announcements section, a form that allows a faculty member to let the STEM team know when they recommend a STEM resource to a student so we can follow up to make sure the student gets connected. We plan to continue to build out this page and develop stronger connections and

lines of communications with faculty. We want to take a critical look at our STEM programs and activities through an equity lens, ensuring that we address any barriers to participation. For example, we noticed that because all of our STEM speakers spoke in English, many beginner ESL students were unable to benefit from this activity. So, we piloted offering a STEM speaker in Spanish. This was well attended by ESL students, Latinx STEM students and Spanish-speaking community members. Finally, we are looking for creative ways to weave our programs together, both within STEM and in partnership with other departments and programs on campus. This will enable us to have a greater impact with students as well as streamline and improve programs and activities across campus.

**3. Impact of Resource Allocations Process:** N/A - This is our first time submitting a program review.

**4. SAOs and SLOs:** The Service Area Outcomes (SAOs) for the STEM Center are the GANAS/INSPIRES/TRABAJO/MESA grant goals. These are:

- 1) Increase the success rate for underrepresented students in foundational courses that are key to STEM pathways.
- 2) Decrease the time to transfer by increasing the success in STEM pre-requisite courses with pre-semester and in-semester academic and study-skill assistance for students.
- 3) Strengthen relationships and articulation with 4-year universities.
- 4) Increase STEM students' self-confidence, motivation and career knowledge through: classroom visits to job sites, job shadowing and internships
- 5) Increase the number of economically disadvantaged, first-generation and minority students who successfully transfer to four-year institutions as STEM majors

The three service area outcomes or grant goals are assessed annually with established programs and will be measured annually for new programs. The measures and outcomes are aligned with each of the SAO or grant goals.

- 1) Increase the success rate for underrepresented students in foundational courses that are key to STEM pathways.
  - a. At least 50 students per year completing Extended Academic Orientation for STEM program and the STEM Success Course.
  - b. At least 100 students per year participate in the Difference-Education Intervention
  - c. At least 50 students per year completing Pathways to Calculus course.
  - d. At least 10% total increase in success rates in the trigonometry-pre-calculus math sequence, an incremental increase of 2% each grant year.
- 2) Decrease the time to transfer by increasing the success in STEM pre-requisite courses with pre-semester and in-semester academic and study-skill assistance for students.
  - a. Develop the EPIC Program and implement in at least 12 foundational STEM courses.
  - b. At least 100 students participate in EPIC sessions for foundational STEM courses.
  - c. At least 5% increase in success rates in STEM courses supported by the EPIC program.
- 3) Strengthen relationships and articulation with 4-year universities.
  - a. Updated STEM course articulation agreements for at least three partner universities every year.
  - b. At least 100 students participating in GANAS University STEM Days every year.
  - c. At least 100 students attending the weekly STEM Speaker Series, with at least seven presentations every semester.
- 4) Increase STEM students' self-confidence, motivation and career knowledge through: classroom visits to job sites, job shadowing and internships
  - a. Conduct 5 classroom visits to workplaces per year
  - b. Conduct job shadow program for 30 students per year
  - c. Increase the number of students placed in internships by 5 students per year.
- 5) Increase the number of economically disadvantaged, first-generation and minority students who successfully transfer to four-year institutions as STEM majors
  - a. At least 10% increase in the number of Hispanic and low-income students transferring successfully to a four-year institution as STEM majors.

**5. SAO/SLO Assessment Results and Impact:** The SAO assessment results summarized here are from the GANAS grant year 3 (10/18-9/19) as these are the last year for which results are currently available.

- 1) Increase the success rate for underrepresented students in foundational courses that are key to STEM pathways.
  - a. At least 50 students per year completing Extended Academic Orientation for STEM program and the STEM Success Course.
    - i. In August 2018, 45 students participated in the Extended Orientation program. This activity was held as a track, offering STEM-specific workshops, within the larger Colts-Con summer bridge program which was open to all incoming Cañada students. In order to analyze the effects of the orientation, we looked at the academic achievement of all Colts-Con participants, compared to an equivalent group of students who did not participate in Colts-Con. We found that students who attended Colts-Con had a higher success rate (73% vs. 58%), retention rate (89% vs. 83%) and fall-spring persistence rate (95% vs. 84%) than

students who did not attend Colts-Con. All differences are statistically significant.

b. At least 100 students per year participate in the Difference-Education Intervention

i. 176 students listened to the Difference-Education panels. Analysis of the August 2018 Difference Education Intervention participants' (treatment group, n=71) GPA and a comparable student control group GPA found that participants in the treatment group had higher term GPAs in the fall 2018 semester as well as higher cumulative GPA at the end of spring 2019 semester. However, non-parametric Mann-Whitney U, as well as parametric t-tests, suggested that this increase in term and cumulative GPA is not statistically significant (p-value=.175, could not reject the initial hypothesis). Considering the very small sample size and the statistical analysis difficulties and uncertainties associated with it, at this point, we refrain of making any rm conclusions about the impact of the Difference Education intervention on student GPA, but we are looking optimistically toward the next iteration of the intervention because we recruited more participants. In year 3, we partnered with Promise to hold the intervention during their welcome day.

2) Decrease the time to transfer by increasing the success in STEM pre-requisite courses with pre-semester and in-semester academic and study-skill assistance for students.

a. Develop the EPIC Program and implement in at least 12 foundational STEM courses.

i. EPIC courses were developed and implemented in 14 STEM courses in the following disciplines: math, computer informational systems, physics, chemistry and engineering.

b. At least 100 students participate in EPIC sessions for foundational STEM courses.

i.

c. At least 5% increase in success rates in STEM courses supported by the EPIC program.

i. At least 5% increase in success rates in STEM courses supported by the EPIC program. This is the average over 14 EPIC courses with numerous professors. Detailed analysis comparing equivalent students within a Calculus 1 course revealed that those students who participated in EPIC tutoring showed 83% success rate compared to 64% success rate for non-participating students in that course..

ii.

3) Strengthen relationships and articulation with 4-year universities.

a. Updated STEM course articulation agreements for at least three partner universities every year.

i. Updated STEM course articulation agreements for at least three partner universities every year. Cañada focuses on course-to-course articulation within STEM majors at our six main transfer universities and then on a case-by-case basis at other universities as issues arise. The GANAS University Relations Manager works closely with students, the STEM counselors and the college Articulation Officer to identify courses that need to be articulated and coordinate the successful articulation of the courses. In 2018-2019, two STEM course articulations in computer information systems were completed with the University of Santa Cruz and two are pending (math with UC Davis and Biology with UC Santa Barbara).

b. At least 100 students participating in GANAS University STEM Days every year.

i. 47 students attended university visits during the 2018-2019 academic year.

c. At least 100 students attending the weekly STEM Speaker Series, with at least seven presentations every semester.

i. 294 unique students attended the speaker series between 10/1/18-9/30/19.

4) Increase STEM students' self-confidence, motivation and career knowledge through: classroom visits to job sites, job shadowing and internships

a. Conduct 5 classroom visits to workplaces per year

i. N/A – program just beginning

b. Conduct job shadow program for 30 students per year

i. 20 students participated during spring break 2019.

c. Increase the number of students placed in internships by 5 students per year.

i. N/A – program just beginning

5) Increase the number of economically disadvantaged, first-generation and minority students who successfully transfer to four-year institutions as STEM majors

a. At least 10% increase in the number of Hispanic and low-income students transferring successfully to a four-year institution as STEM majors.

i. Due to limitations of the transfer databases for UCs and CSUs, we are unable to pull out the number of these students who transferred as STEM majors. Thus, we handed out a paper survey in spring 2019 to students in classes identified as generally enrolling students in their last semester before transfer and then kept in touch with these students to ensure that they actually began at a four-year university in fall 2018. Through this method, we identified 75 students that transferred in a STEM major in fall 2019. Of these, 21.3% are Hispanic. In fall 2018, 35% were Hispanic. This decrease may be due to limitations in the data collection methodology as it relies on human interaction to collect the data. We are still refining our methodology to improve the accuracy of this measure.

**Annual Update Status:** In Process

# CAN Program Review (Student Services) - STEM Center (Fall 2021)

## Goal Description: Institutionalize Academic Support Services – Tutoring and EPIC Programming (in conjunction with the Learning Center)

All STEM tutoring and EPIC programming are grant-funded. This grant is set to expire on September 30, 2021. We have the funding to pay for the EPIC Coordinator's salary through this date. Last fall, we submitted a position justification for this position, which was rated highly, but ultimately not funded at that time. We currently have funding for student tutors through September 30, 2021, however, we are limited in the courses we can support because of the restrictions of our funding source.

**Goal Status:** 1 - New (PR)

**Estimated Completion Date:** 09/30/2021

**Who's Responsible for this Goal?:** David Reed, Ameer Thompson, Georganne Morin, Julian Taylor, Josue Alcaraz

**Please select the college goals with which your program goal aligns.:** Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

**Please select the college strategic initiatives with which your program goal aligns.:** Improve Student Completion, Implement Promise Scholars Program, Implement Guided Pathways, Implement Guided Pathways, Institutionalize Effective Structures to Reduce Obligation Gaps

## Resource Requests

### College funding for an EPIC coordinator, student tutors and EPIC leaders.

**Status:** New Request - Active

**Type of Resource:** Non-Instructional Personnel

**Cost:** 300000

**One-Time or Recurring Cost?:** Recurring Cost

**Critical Question: How does this resource request support closing the equity gap?:** Tutoring services are a core component to academic support for students and vital to support student success and completion in an AB705 environment.

**Critical Question: How does this resource request support Latinx and AANAPISI students?:** Evaluation of Canada College's EPIC and tutoring services have shown that Latinx and other minority students who use the services achieve greater course success than peers who do not participate in EPIC and tutoring.

## Goal Description: Institutionalize Retention Support Services – Retention Specialist, Peer Mentoring and COLTS-CON

All STEM student support services are grant-funded. This grant is set to expire on September 30, 2021. However, institutionalization is built into the grant funding. Currently, the GANAS grant pays for 25% of the Retention Specialist. The ESO grant (Learning Center grant) pay for the coordination of the STEM and basic skills peer mentoring program. This position is funded until December 31, 2020 when the ESO grant expires. A combination of ESO and STEM grants have paid for COLTS-CON for the past two year. To continue this vital FYE experience, college funds will be needed to pay for at least half of the expenses for COLTS-CON as we are losing half of the funding with the expiration of the ESO grant and for the full program expenses beginning in August 2022.

Funding for the student peer mentors expires in December 2020 for basic skills peer mentors and September 2021 for STEM peer mentors. College funding is needed to continue these programs.

**Goal Status:** 1 - New (PR)

**Who's Responsible for this Goal?:** David Reed, Ameer Thompson, Georganne Morin, Candice Johnson

**Please select the college goals with which your program goal aligns.:** Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

# CAN Program Review (Student Services) - STEM Center (Fall 2021)

Please select the college strategic initiatives with which your program goal aligns.: Improve Student Completion, Implement Promise Scholars Program, Expand Cohort Bridge Programs, Implement Guided Pathways, Implement Guided Pathways, Promote a Climate of Inclusivity, Institutionalize Effective Structures to Reduce Obligation Gaps

## Resource Requests

**College funding for the STEM Retention Specialist, Learning Center/STEM Center Peer Mentoring Coordinator, Student Peer Mentors and food and supplies for COLTS-CON.**

**Status:** New Request - Active

**Type of Resource:** Non-Instructional Personnel

**Cost:** 361000

**One-Time or Recurring Cost?:** Recurring Cost

**Critical Question: How does this resource request support closing the equity gap?:** Canada PRIE evaluation has shown that students who worked with a STEM retention specialist had statistically significantly higher persistence than peers who did not work with a STEM retention specialist. A Canada PRIE evaluation of COLTS-CON showed that Promise students who attended COLTS-CON had statistically higher rates of success, retention and persistent than Promise students who did not attend COLTS-CON. Studies have shown that college-based peer-mentoring programs, especially during the first year, can help students feel more connected and integrated to the college which increases student retention and their likelihood of graduating.

**Critical Question: How does this resource request support Latinx and AANAPISI students?:** Many of our Latinx and other minority students are often the first in their families to attend college. These students face obstacles that their more affluent peers do not face. These include lack of professional role models (especially in STEM fields) and the need for targeted support to navigate the transition from high school to college as well as to connect to and fully utilize college resource. COLTS-CON, retention specialist and peer mentors provide this crucial support to increase Latinx and other minority groups' success, completion and/or transfer to a four-year institution, particularly in a STEM field.

## Goal Description: Institutionalize STEM Transfer Services - University Partnership Manager and Transfer Activities

GANAS University Partnership Manager will increase capacity and STEM student transfer rates by (a) developing relationships with the many STEM programs and transfer student support programs, resulting in a comprehensive map of STEM transfer student resources and opportunities at 4-year universities in Northern California; (b) developing and organizing a series of "GANAS University Explorations" workshops and "GANAS University STEM Day" field trips experiences for students; (c) expanding support for STEM majors to consider and apply to UC and other selective universities; and (d) developing a weekly STEM Speaker Series.

Grant funding for the University Partnerships Manager, University Visits and the STEM Speaker Series will expire on September 30, 2021. The goal is to secure college funding to continue these activities beyond the end of the grant.

**Goal Status:** 1 - New (PR)

**Who's Responsible for this Goal?:** Ameer Thompson, Georganne Morin, Rance Bobo

**Please select the college goals with which your program goal aligns.:** Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

**Please select the college strategic initiatives with which your program goal aligns.:** Create an Alumni Network, Partner with 4-Year Colleges and Universities, Implement Guided Pathways, Implement Guided Pathways, Promote a Climate of Inclusivity, Institutionalize Effective Structures to Reduce Obligation Gaps

## Resource Requests

**College funding for University Relations Manager, transportation for university visits and facilities and snacks for STEM speaker series.**

**Status:** New Request - Active

**Type of Resource:** Non-Instructional Personnel



# CAN Program Review (Student Services) - STEM Center (Fall 2021)

**Cost:** 200000

**One-Time or Recurring Cost?:** Recurring Cost

**Critical Question: How does this resource request support closing the equity gap?:** In 2017, nearly half of Latinx and 1/3 of African American undergraduate students began their higher education trajectory in community colleges (US). Providing targeted programs, activities and support to increase the rate of Canada students, particularly Latinx and other minority students transfer to 4-year universities, will help to close the equity gap in US higher education.

**Critical Question: How does this resource request support Latinx and AANAPISI students?:** At Cañada College, an analysis of student characteristics and academic variables associated with STEM transfer students shows that 81% of students who have completed between 60 and 90 transferrable units transferred to a four-year university while only 31% of students who completed 90 units or more transferred. The study concluded that STEM-specific support services impact students' successful transfer, and recommended that students receive guidance on transferring before and during the optimal transferable credit range of 60 to 90 units. Latinx and other minority students, in particular, are often first-generation college students and benefit specifically from transfer-related workshops, university visits, motivational speakers and a warm hand-off to a four-year university by the University Relations Manager.

## Goal Description: Institutionalize STEM Center Administration

Grant funding for the STEM Center Project Director and Assistant Project Director end on September 30, 2021. In order to continue to coordinate, evaluate and manage the administrative and budgetary functions of the STEM Center, we seek to secure college funding for these two positions

**Goal Status:** 1 - New (PR)

**Who's Responsible for this Goal?:** Ameer Thompson, Georganne Morin, Marcella Grant

**Please select the college goals with which your program goal aligns.:** Organizational Development - Focus institutional resources on the structures, processes, and practices that invest in a diverse student population and prioritize and promote equitable, inclusive, and transformative learning.

**Please select the college strategic initiatives with which your program goal aligns.:** Expand Cohort Bridge Programs, Enhance Marketing, Implement Guided Pathways, Implement Guided Pathways, Promote a Climate of Inclusivity, Institutionalize Effective Structures to Reduce Obligation Gaps

## Resource Requests

### Funding for STEM Center Project Director and Assistant Project Director

**Status:** New Request - Active

**Type of Resource:** Non-Instructional Personnel

**Cost:** 300000

**One-Time or Recurring Cost?:** Recurring Cost

**Critical Question: How does this resource request support closing the equity gap?:** Providing funding for the STEM Center Project Director and Assistant Project Director will allow the STEM Center to streamline, evaluate and effectively manage the STEM Center programs and activities. Effective oversight of these programs will allow us to continually improve programs, making them more responsive to student needs. In addition, it will allow us to connect with and effectively support faculty and other departments and programs, again making the STEM resources more effective in increasing student success, retention, persistence and completion.

**Critical Question: How does this resource request support Latinx and AANAPISI students?:** Latinx and other minority students specifically benefit from the activities and supports provided by the STEM Center. By providing these intrusive academic and social supports, we are able to meet the specific needs of these students, leading to their success.