SAN DIEGO STATE UNIVERSITY

Georgia

SDSU 251-06-2019
June 3, 2019

Magda Magradze
Chief Executive Officer
Millennium Challenge Account – Georgia

Dear Ms. Magradze,

Please find enclosed herewith the Final Report as deliverables for the Provision of Degree Accreditation and Institutional Support Initiative for Science, Technology, Engineering, and Mathematics, as required per the contract. The Final Report includes the following submissions:

- Progress Meeting and related minutes (Q3)
- Final Sustainability Plan for Post-Compact
- Enrolment Report and Budget for Fall 2019
- Final Post-Compact Work Plan

Please feel free to contact me if you have any questions.

Sincerely,

Halil Guven
Dean, SDSU-Georgia
San Diego State University
Address: 5 Kostava Street, 3rd floor
Tbilisi 0108, Georgia
Office: +995 32 2311611
Mobile: +995-555-768-269
Email: hguven@sdsu.edu

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SU-06-2019

SAN DIEGO STATE UNIVERSITY

Georgia

FINAL SUSTAINABILITY PLAN FOR POST COMPACT

JUNE, 2019

TABLE OF CONTENTS

1. INTRODUCTION

Georgia has a critical shortage of science, technology, engineering and mathematics (STEM) professionals, educated to current international standards, graduating from their institutions of higher education. To address this problem, the Georgian government through the Millennium Challenge Account- Georgia, with funding from the U.S. Millennium Challenge Corporation (MCC) contracted with San Diego State University (SDSU) to provide an American university education in Georgia focused on STEM disciplines that would improve human capital in the Georgian labor force. This type of preparation is intended to increase the number of high quality scientists and professionals for companies operating in Georgia, contribute to economic growth in Georgia, and enhance employment in companies requiring market-driven skills.

SDSU is approaching this project in partnership with Tbilisi State University (TSU), Ilia State University (ISU), and Georgian Technical University (GTU) – the three premier public universities in Georgia – to provide Bachelor's degrees in the country of Georgia. Using the facilities of these three universities, San Diego State University Georgia (SDSU-Georgia) focuses on STEM education to train an advanced workforce to meet the growing needs of Georgia. This program meets SDSU standards for curriculum, faculty training, and accreditation. As with all SDSU Bachelor's degrees, this program also includes general education to provide students with breadth in the liberal arts so necessary for an advanced workforce that will enhance the economy of the country. SDSU has been responsible for admissions, curriculum, quality of instruction, renovation of facilities, updating equipment and implementation of the program. In addition, SDSU-G is responsible for building capacity for the partner universities in STEM fields, and also to help them in acquisition of Accreditation Board for Engineering and Technology (ABET) accreditation.

SDSU established a STEM campus in Tbilisi, Georgia in 2014. SDSU Georgia admitted its first cohort of students in 2015. Currently there are more than 500 students (4 cohorts) studying at Georgia campus in six Bachelor of Science (BS) degree programs: BS Computer Engineering; BS Electrical Engineering; BS Chemistry/ Biochemistry; BS Computer Sciences, BS Civil Engineering; and BS Construction Engineering. By 2023, SDSU-G will graduate five cohorts and 600+ students in total. SDSU-G will have its first group of graduates in Summer 2019.

This report presents the summary of the introduction of accredited American STEM degree programs in Georgia, results achieved through capacity building activities at Georgian partner institutions, preparing qualified workforce for the labor market of Georgia, and challenges faced throughout the course of the project.

2. GOAL OF THE PROJECT

SDSU Georgia project will complete its fifth year of operation as five cohorts will be recruited by Academic Year (AY) 2019-2020. SDSU Georgia program has aimed to reach the following goals:

- Increase awareness of the importance of STEM education in Georgia and prepare highly qualified STEM professionals as SDSU Georgia program graduates
- Initiate reforms in STEM subjects in Georgia and introduce international accreditation concepts to the state universities in Georgia
- Build capacity through renovation / construction activities and faculty development

As SDSU-G enters its fifth anniversary in Georgia, and before the MCC Compact concludes in July 2019,

SDSU is re-visiting its sustainability and strategic growth plan for transitioning the SDSU-G program to full Georgian leadership after five cohorts (2019 freshman class graduation). SDSU projects that by 2023, all three partners will to be able to offer internationally accredited STEM programs, if they follow the road map offered by SDSU. SDSU's road maps includes formation of cross- organizational working groups at each partner university to plan and implement the transition process, including but not limited to planning for accreditation of partner university programs, and transition of program leadership to partner universities. These cross-organizational working groups are called "SDSU-G Program Transition Committees" and were formed by rector decrees of partner universities (TSU, GTU, and ISU). These transition committees are the focal point of SDSU-G's sustainability planning process, and include MCA/MCC observers and representatives from all three partner universities. Accreditation of Engineering and Computer Science degree programs in TSU, ISU, and GTU are sought from ABET, and certification of their Chemistry/Biochemistry programs is sought from the American Chemical Society (ACS).

3. NARRATIVE OF MAJOR ACTIVITIES

Prior to establishing campus in Georgia, SDSU solicited input from partner institutions and thoroughly evaluated existing and planned curricula in the target disciplines. Under consultation with the partner institutions, SDSU-G used a launch strategy that leveraged the first Compact Year:

- to establish a program office with appropriate recruiting and outreach capabilities, and a focus on constructing and renovating facilities, training faculty and staff, and implementing the educational programs in the subsequent years;

- to enhance existing relationships with partner institutions, and developing additional relationships with academic, industry, and government institutions to further enhance the quality and impact of the SDSU-G program.

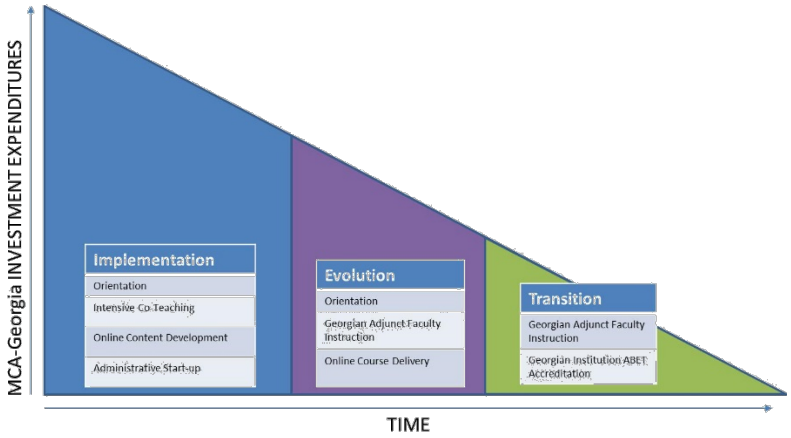

Figure 1. MCA- Georgia Investment Expenditures in time

During this initial "Implementation" phases of the program, the main focus was on identifying and collaborating with Georgian partner institution faculty to modify their course content, teaching mode, laboratory experiences, and assessment, to match SDSU and ABET/ACS requirements. During the "Evolution" phase, collaborating Georgian faculty adopted increasing responsibility for direct implementation and instruction of the approved curriculum. During this phase, collaboration through in-person co-teaching and online mentorship continued. **Figure 1** presents investment expenditures that

decline with program progress, as the responsibilities of the Georgian partner institutions take precedence.

In Compact Year 1, resource allocation was finalized to establish relevant technical laboratories across the three partner institutions, outfitting appropriate digital media, computer laboratories and teaching assets at TSU, ISU and GTU, and establishing a methodology for preserving partner institution budget allocation from the Government of Georgia (GoG) while simultaneously supporting the costs of the new program development and delivery. At the same time, existing partner university curricula was intensively evaluated, particularly to assess the courses that could potentially be accepted by the accrediting bodies as General Education courses.

In Compact Year 2 (Academic Year 2015-2016), SDSU-G started offering programs. Initially, three programs were offered: Chemistry/ Biochemistry, Computer Engineering, and Electrical Engineering. In 2016-2017 Computer Science program was added, and in 2017-2018 SDSU-G started offering Civil Engineering and Construction Engineering. The six programs correspond to accredited degree programs at SDSU home campus and have been selected based upon documented needs and demand from the Georgian partner institutions. The fundamental approach of the degree offerings was to assist the three Georgian partner institutions (TSU, ISU, and GTU) in adopting the existing accredited curricula from SDSU.

Faculty Development activities are conducted as a part of the capacity building strategy for SDSU-G project. Each semester, Georgian faculty nominated by their respective partner universities are selected to visit the home campus to build familiarity with SDSU curricula, develop teaching skills within specific courses that they might later assist with or teach in Georgia, develop laboratory skills, an understanding of SDSU's assessment practices, and to build collaborations with SDSU faculty, both in terms of teaching and research. During these visits, each of the visiting faculty members are paired with a faculty member in their discipline on home campus. The SDSU host serves in a mentoring capacity during the visit and afterwards, when the Georgian faculty starts teaching in the SDSU-G programs. First cohort of Georgian faculty visited SDSU home campus in summer 2014. There have been ten cohorts since.

The primary focus of the SDSU-Georgia program is on the undergraduate degree process. However, there are a number of faculty-to-faculty connections developing. Joint grant applications between SDSU main campus faculty and the faculty at the partner universities have been slowly evolving. Preliminary Memoranda of Understanding (MOU) with Tbilisi State University, Ilia State University, and Georgian Technical University have been executed to reflect the institutions' mutual commitment to execute collaborative projects, develop courses and academic programs, joint scientific and technical research programs, exchanges of teaching and research personnel, student exchanges, and other mutually beneficial activities that enhance academic, research or technical progress at the universities. The process of having partner university faculty visit San Diego has been very helpful in fostering these collaborations, which have also led to Fulbright applications (one has been successful so far and was recently completed). In addition, scholarly publications regarding the process of education and language development in Georgia are in progress.

Agreement on facility renovation and rehabilitation at partner unvisited was reached during an intensive visit by representatives from the partner institutions to SDSU from January 27-29, 2014. During these working sessions, collaborative ties were strengthened among identified institutional leaders. Resource allocation was confirmed and improved to establish relevant technical laboratories across the three partner institutions, outfitting appropriate digital media, computer laboratories and teaching assets at all three partner institutions, and establishing a methodology for preserving partner institution budget

allocation from the Government of Georgia while simultaneously supporting the costs of the new program development and delivery. Saunders Group Ltd., a Georgian-based construction engineering and design firm was engaged to validate and confirm, with appropriate site visits, that the proposed facility modifications were feasible and adequately budgeted. In addition, a construction contingency fund of 10% of construction costs and equipment contingency of 10% was set aside to address potential cost overruns, unforeseen financial market impacts, tariffs or other contingencies. Through the facility rehabilitation portion of the project, up to 9,000 square meters of classroom and laboratory spaces have been constructed and rehabilitated at Partner University facilities. This includes the newly constructed STEM building in partnership with ISU, with a total space of more than 4,000 m^2.

By law, students seeking admission to higher education institutions in Georgia are required to take the National Assessment and Examinations Center (NAEC) university entrance exams. Exams are organized in June-July and the results are reported in August of each year. Student recruitment for 2015-2016 cohort started in early 2015, but since Georgia has a centralized university entrance exam system, and a centralized university placement, recruitment strategy was confined to school visits only.

For the 2016-2017 Academic year (AY) SDSU-G introduced an "Early Application System" to create a hybrid recruitment model (American – vs – Georgian centrally controlled placement). The recruitment process used by SDSU-G includes the following stages of activities: In September, "*Apply-SDSU"* application is opened for the potential applicants for the next Academic year's admissions. Early deadline for submitting the application is January. Prospective students are asked to submit their high school grades in sealed envelopes. Applicants seeking financial assistance are asked to submit a financial data form documenting family finances (Yearly disposable income, home at its market value, other property, loans payable, declared ability to finance tuition, etc.). Applicants are then interviewed by a scholarship committee. After evaluating prospective students' academic results, SDSU Enrollment Services on home campus issues conditional admission letters to the early applicants by March. At the last stage, in April-May, the applicants who are academically and financially qualified are offered scholarship based on their financial information and the interview/academic results. Even though the applicants are selected and funded by SDSU-G before the NAEC exams take place, exams are the last step to admit them to SDSU-G and Partner University joint programs in September. SDSU-G determines thresholds for each required subject of the National exams every year.

SDSU Georgia used a multi-pronged approach to reach and prepare disadvantaged and underrepresented populations for success in the program. The following practices have been implemented: Early identification of interested disadvantaged students; Provision of preparatory English and STEM training to improve competitiveness; Needs-based scholarships and other student learning and support programs.

SDSU Georgia introduced American university culture concepts and practices that were previously unknown to the Georgian higher education system, including student life, smart classrooms, long-term associations, peer-to-peer mentorship programs, etc. General Education component for STEM degrees was also introduced and successfully integrated to facilitate quality instruction, academic rigor, and educational effectiveness. As part of introducing SDSU student life practices, SDSU-G organized and the student body elected its first Associated Student Chapter of SDSU-G in December 2017. This intended to help keep the finger on the pulse of student satisfaction. SDSU-G Associated Students Board of Directors (A.S.B.O.D.) has successfully connected with the SDSU A.S.B.O.D. to further their understanding of how a student body organization should function. SDSU-G supports the new initiatives of the board to stimulate the student life experience. The first board served until the end of 2018-2019 Academic year. In March 2019, the new A.S.B.O.D. was elected to serve for the 2019-2020 Academic

Year. Board Elections will be held every year, in March. SDSU Georgia will also hold its very first Commencement Ceremony in Tbilisi, Georgia, in June 2019.

Academic support, including textbooks, lab supplies and services such as student academic advisors, mentors and tutors, and opportunities for student experience development activities have all been specifically incorporated into the project and budget to include both group and one-on-one student services. These programs are implemented in close consultation with SDSU-Georgia, Partner Institutions, and the SDSU-Georgia student body.

In 2018, SDSU-G established a Career Development Center (CDC), aiming to equip students with good self-presentation skills, and market student skills to public and private partners. Students are trained in resume writing and job interviewing techniques by CDC staff and invited guests, MOU's are being signed with public and private partners to create employment opportunities for students, an Employment Relations Manager has been dedicated to communicate with public and private partners on student internships and employers, CDC website has been created to provide information on job openings and internships to students, as well as give potential employers access to student resumes. CDC organizes, annual job and internship fairs are being organized, and Professional development and CV workshops are being organized with interactive panels from leading industry professionals.

Tuition at SDSU-G programs was set to ensure the long-term sustainability of this innovative program, considering student financial assistance is a critical component of the SDSU-G tuition-based STEM undergraduate degree program. While some Georgian students seek higher education at foreign institutions and pay a premium in tuition and other associated costs, many families have limited resources to pursue internationally recognized programs and degrees, which carry significant costs in housing, subsistence, and other expenses. In order to attract high-performing yet financially disadvantaged students, a robust scholarship and financial assistance has been put in place for SDSU-G programs. SDSU-G established a Public Private Partnership Fund (PPPF) to generate resources to provide scholarship funds for successful, socially vulnerable students in the country. The objective of the PPPF fund is to generate resources to make internationally accredited STEM programs affordable for successful, socially disadvantaged or other vulnerable groups of students in Georgia. Total commitment of Private sector to SDSU Georgia programs is $3,289,836. Contributors include: LIST. Total commitment of Private sector to SDSU-G scholarship funds is $3,289,836.

Scholarships and Financial assistance grants are based on student merit and/or the demonstration of financial need. Students complete a financial assistance application to be considered for scholarship support, where they can provide information about their academic performance (merit) and need. Key factors in the needs-based determination are: a) whether or not the prospective student's family is eligible for pecuniary social assistance from the GoG Social Services Agency, and b) financial disclosure forms.

Compact Year 7 budget represents a single moment in time that captures projected steady state revenue from tuition. As noted in the Interim Proposal Technical Evaluation, the business model proposed establishes a provisional "reserve" of unobligated funds by Compact Year 7. These funds were leveraged to support the continued success of the program through four principal uses: (1) Establishment and development of new degree programs using the successful development model disciplines to be determined in collaboration with partner institutions based on capacity and demand; (2) Construction of new facilities to allow for program expansion; (3) Maintenance and repair of existing equipment and supplies required to maintain the currency of course offerings; (4) Improving student scholarship aid to ensure long-term access for socially-disadvantaged student groups.

ABET/ACS accreditation activities were initiated as part of capacity building objective of SDSU Georgia project. The initial goal of ABET/ACS accreditation activities implemented by SDSU-G with help of the Millennium Challenge Account Georgia was to ensure partner university programs would be in the process of applying for ABET or ACS accreditation by 2020. In this context, the core methodology proposed by the SDSU to facilitate the accreditation of the partner institutions' programs was to overlay SDSU's existing, and accredited, curricula onto the framework already provided by the partner institution. This is later named as the "First-track" ABET accreditation.

In the Compact Year 2, SDSU-G provided a follow up recommendation that it may be possible to consider additional pathways, a "second track", to facilitate the accreditation of programs at the partner universities that do not bridge through the SDSU-delivered programs first. The ABET Second-track is defined as the accreditation of existing Georgian language STEM programs at the partner universities.

SDSU-G proposed to assist partner universities to obtain ABET Second-track accreditation for a few of their existing Georgian language STEM programs ("pilot programs"), for which they already have a number of graduates working in the industry. Based on a preliminary assessment of this idea, SDSU-G determined that it may be possible to complete ABET Readiness report for the Second-track pilot programs by AY 2018-19, and potentially have ABET accreditation for pilot Georgian language programs in the AY 2020-21. ABET Committees were formed at the Partner Universities (PU's) to implement the ABET strategy. ACS Certification of TSU Chemistry / Biochemistry program is planned for 2021.

SDSU-G is currently entering the Transition Phase, during and after which SDSU-hosted faculty will serve in an advisory and evaluation role as the Georgian partner institutions pursue independent ABET and ACS accreditation for the modified curricula to be taught directly by the Georgian institution. Students of five cohorts will continue to be instructed by SDSU-G and receive SDSU degree, but after the last SDSU-G cohort graduates, the degree-awarding will be transitioned fully to the Georgian institutions. Upon their receipt of ABET/ACS accreditation, during the Transition phase, SDSU-G continues to provide support to partner universities, as needed.

Even though, the primary focus of the SDSU-G program was/is on the undergraduate degree process, a number of faculty-to-faculty connections also developed. Joint grant applications between SDSU main campus faculty and the faculty at the partner universities have also evolved. Preliminary Memoranda of Understanding (MOU's) with TSU, ISU, and GTU have been executed to reflect the institutions' mutual commitment to execute collaborative projects, develop courses and academic programs, joint scientific and technical research programs, exchanges of teaching and research personnel, student exchanges, and other mutually beneficial activities that enhance academic, research or technical progress at the universities. The process of having partner university faculty visit San Diego has been very helpful in fostering these collaborations, which have also led to Fulbright applications (one has been successful so far and was recently completed).

In March, 2019 MCA, SDSU Research Foundation, and SDSU Georgia with partner universities, completed partnership negotiations in Tbilisi Georgia. Main topics of the negotiations were: ABET track programs of the partner universities, future training needs assessment on number of issues, including: recruitment, fundraising, formulation of Board of Trustees, program funding, asset management, facility sharing arrangements with SDSU Georgia, program branding, partnership with SDSU Georgia, and insurance of assets and asset transfer.

On April 12, 2019, SDSU Georgia hosted a Post-Compact Planning Workshop in San Diego, California. The meeting was attended by the President of SDSU, Adela de la Torre and served as a brainstorming session of the post-compact operations to formulate future (post-2019) partnership opportunities

between SDSU, SDSU Georgia, Partner Universities, Successor Entity of MCA- Georgia and the Government of Georgia. Attendees included rectors of three partner universities, private sector representatives, and representatives of SDSU's STEM departments.

On April 13, 2019, SDSU, SDSU Research Foundation, and three partner universities signed Partnership Agreements, following the two-day Post-compact project implementation parameters negotiations in March. Partnership agreements set the ground rules for partnership for the period of July 1, 2019 to September 30, 2023.

4. MAJOR ACHIEVEMENTS

4.1 ABET Accreditation and ACS Certification

In February, 2013, the Millennium Challenge Account Georgia contracted with the ABET Foundation to provide consultancy services in order to assess STEM Programs and Design of Investment to Build Capacity for ABET Accreditation of Georgian universities. The purpose of the contract was to assess the capacity needs of relevant Georgian programs of study to deliver high quality accredited STEM bachelor degrees.

In December, 2013, the ABET Foundation provided information relative to the readiness of STEM programs at four Georgian universities for a review by ABET for possible program accreditation. Under preliminary evaluation by the ABET Foundation, Georgian degree programs presently exhibit: 1) A lack of consistent assessment of student learning and no mechanism to demonstrate continuous improvement process; 2) A lack of sufficient General Education; 3) Absence of an appropriate student guidance advisory that aids students with their curriculum and career matters; 4) The aging faculty members and their low involvement with professional organizations; 5) A lack of modern teaching and laboratory equipment in many discipline areas.

In response to the ABET Foundation's report, the core methodology proposed by SDSU to facilitate the accreditation of the partner institutions in the 45-month contract was to overlay SDSU's existing, and accredited, curricula onto the framework already provided by the partner institution.

The projection was that by the time the partner institution programs are eligible for consideration (e.g., have at least one graduate), nearly all of the first group of SDSU-Georgia programs will be transitioned to partner-institution instruction only, and thereby be appropriate to be submitted under a Request for Evaluation (RFE). It is projected that some programs could potentially be eligible and prepared to submit the RFE as soon as the end of CY5. Hence, by 2020 these programs should be in the process of applying for ABET or ACS accreditation. Some programs may have required a longer transition period depending on the speed of capacity building within that program.

The SDSU Georgia ABET report completed in September 2016, provided recommendations that it may be possible to consider additional pathways, a "second track", to facilitate the accreditation of programs at the partner universities that do not bridge through the SDSU-delivered programs first. In this context, the ABET First-track is defined as the process of overlaying SDSU's existing, and accredited curricula onto the framework already provided by the partner institution. The ABET Second-track is defined as the accreditation of existing Georgian language STEM programs at the partner universities.

In September 2016 SDSU-G proposed to assist partner universities to obtain ABET Second-track accreditation for a few of their existing Georgian language STEM programs ("pilot programs"), for which

they already have a number of graduates working in the industry. Based on a preliminary assessment of this idea during the CY2, SDSU-G determined that it may be possible to complete ABET Readiness report for the Second-track pilot programs by CY5, AY 2018-19, and potentially have ABET accreditation for pilot Georgian language programs in the AY 2020-21.

During the Fall 2016 and Spring 2017 semesters, the ABET committees of GTU and TSU worked closely with SDSU-G, under the guidance of our ABET Officer, Dr. Hashemipour, to fulfill the first-track and second-track tasks. ISU ABET committee was activated in Fall 2017 semester to work on a first-track program in Computer Engineering.

The MCA-Georgia has signed a contract with the ABET Foundation, which provided ABET Accreditation Readiness Assessment of STEM Programs for the SDSU-G partner universities in September 2017.

Partner University ABET committee representatives have attended two ABET symposiums in the U.S., organized by the Accreditation Board for Engineering and Technology Inc. for accreditation, assessment and global exchange of best practices in STEM education. The first symposium attended by 15 PU representatives took place on April 12-13, 2018 in San Diego, California. Upon return from ABET Symposium, ABET Foundation came for its second visit to Tbilisi in April, 2018.

Second visit of the Georgian Partner university ABET committee representatives for ABET Symposium took place on April 10-13, 2019, in Dallas, Texas, U.S. 13 representatives of three partner universities attended the symposium in Dallas.

ACS Certification of TSU Chemistry / Biochemistry program is planned for 2021. Currently, SDSU-G completed the 3rd year (junior year) of instruction in the TSU-SDSU Chemistry / Biochemistry program. SDSU-G continues building labs and having Georgian colleagues take over the teaching of the lectures and labs for the required courses. Each required course taught by the Georgian colleagues, and each major instrument (NMR, need elevator) installed is an ACS milestone. SDSUG started preparing for the independent standalone TSU Chemistry program certification on February 9, 2018 by asking a TSU rector's office to form a TSU ACS certification committee. First meeting of the TSU ACS committee took place on May 3, 2018 at TSU.

On May 4-5, 2018 ACS-SDSUG Student Chapter helped coordinate and sponsor a two-day International mini-Symposium at TSU. Second ACS Symposium will be held on May 31-June 1, 2019 where the Georgian Chapter of American Chemical Society will be presented for the first time.

In September 2018, a three-step process was introduced as metrics to track progress toward ACS certification:

- English Language Chemistry program approval by EQE
- Chartering a regional ACS Chapter – ACS Regional Chapter with 70 members has been established with members from SDSU Georgia, Tbilisi State University, Ilia State University, Georgian Technical University, and Batumi State University.
- Organizing an International Chemistry Research Symposium to take place on May 31-June 1, 2019.

Appendix 1 lists new U.S. Accredited programs offered by Georgian Universities in partnership with SDSU, starting from 2019 onwards.

4.2 Georgian Faculty Development and Instruction

As a result of successful Implementation and Evolution, faculty load shifted to Georgian-led sooner than determined in the original proposal. A total of 86 Georgian faculty was trained at SDSU, 57 of which have been teaching on SDSU Georgia programs. The total trained faculty includes faculty trained in ABET requirements, and some members of partner university administrations. The first group of faculty visited in the summer session of 2014, the second group of faculty visited SDSU during the fall 2014 semester and the third cohort of faculty visited SDSU during the Spring, 2015, semester. Two additional cohorts visited during the spring 2016 semester. The sixth cohort visited SDSU during the Fall 2016 semester. The seventh cohort visited in Spring 2017 semester. The eighth cohort of faculty visited SDSU during Fall 2017, the ninth cohort visited in Spring 2018. The tenth cohort of faculty visited San Diego in Spring 2019.

As of the 2019-2020 Academic year, absolute majority of courses taught to the student subgroups (Freshmen, Sophomore, Junior, Senior) will be transitioned to the Georgian faculty. Actual model of transition is given in **Table 1**.

Table 1. Transition Model of instruction

Academic Year	Freshman	Sophomore	Junior	Senior
2014-15				
2015-16	SDSU/G*			
2016-17	G/SDSU**	SDSU/G		
2017-18	G/SDSU	G/SDSU	SDSU/G	
2018-19	G***	G	G/SDSU	G/SDSU
2019-20	G	G	G/SDSU	G/SDSU
2020-21		G	G	G
2021-22			G	G
2022-23				G

Currently (Academic year 2018-2019) 70% of all courses taught at SDSU-G are delivered by the Georgian faculty. The balance of faculty responsibilities are being transitioned to Georgian faculty controlled as they gain experience in delivering and evaluating accredited degree programs.

4.3 Facilities Renovations and Equipment

SDSU Georgia has rehabilitated and constructed up to 9,000 sq. m. of partner university facilities for teaching and laboratory use for the priority of SDSU Georgia programs. Both the rehabilitation and construction meet local and international standards for educational facilities and MCC and IFC guidelines.

SDSU engaged Saunders Group Infrastructure Consultants in Tbilisi to secure accurate inspection and evaluation and cost management for the refurbishment and new construction works.

Compact Year 1 – Renovations were completed for smart classrooms, lecture halls, Computer, Physics, and Chemistry laboratories at TSU, Buildings 2 and 11, and Library Building, as well as Chemistry lab renovations at GTU, Buildings 2 and 8. Laboratory storerooms, technician and program offices, and required common spaces and facilities were also rehabilitated.

Compact Year 2 – Renovations were completed for meeting rooms, Library, program offices, as well as Chemistry lab, Digital Systems, Circuits, Computer lab at TSU.

Compact Year 3 - Renovations were completed for Chemistry labs, lecture halls, meeting rooms, Engineering Computer classroom, Digital Communications as well as Senior design labs, common spaces and program offices at TSU.

Compact Year 4 – New ISU STEM building was designed by ISU, in collaboration with SDSU Georgia, SDSU, and SDSU Research Foundation. The building is built on 1,115 sq. m. land plot, 4-story building and underground parking, with approximately 5,000 sq. m. of total space. The building will have Electrical and Computer Engineering, Civil and Construction Engineering labs, classrooms, library / lounge space, office and other required common spaces. Scheduled completion date of the construction, considering delays was March 5, 2019, but commissioning of equipment and testing of units installed commenced after project completion. Furniture Fixtures and Equipment is scheduled to be completed by May 30, 2019.

In 2018, SDSU Georgia installed a high resolution spectrometer Avance III HD 400 NanoBay Nuclear Magnetic Resonance Spectroscopy at TSU. Nuclear magnetic resonance spectroscopy is used to study the structure of molecules, the interaction of various molecules, the kinetics or dynamics of molecules and the composition of mixtures of biological or synthetic solutions or composites.

Table 2 gives total area of renovated / constructed spaces completed through SDSU Georgia Project.

Table 2. Areas renovated/constructed at Partner University facilities

Partner Institution	TSU	ISU	GTU
Classroom space (m^2)	951	587	291
Office space (m^2)	240	887	14
STEM laboratories (m^2)	1,438	844	262
Library (m^2)	78	144	0
Other (m^2)	716	2,056	158
TOTALS (m^2)	**3,422**	**4,517**	**725**

4.4 Increasing awareness of STEM Education and Recruiting Tools

As a recruiting tool for prospective students, SDSU-Georgia offers STEM Academies for high school seniors and juniors. Each STEM Academy is a customized event that includes lectures, workshops, demonstrations, and activities designed to excite students about science and engineering opportunities and provide examples of teaching styles at an American University. STEM Academies are offered at various locations throughout Georgia.

A STEM Institute is implemented immediately prior to the beginning of each academic year to assess incoming students and provide them with preparatory education in the sciences and mathematics required for success in the STEM degree programs. Appropriate sessions are tailored to meet student needs and qualified instructors are engaged to provide preparatory STEM courses.

The STEM Institute is provided to all Georgian students selected for enrollment in an SDSU-Georgia STEM degree program. Each student is given a series of placement (Calculus, English) exams during the program to determine their level of competency and need for additional education in one or more of the subjects. The program consists of three main assessment and preparatory education components. The first focuses on placing mathematics and science competencies into a context by using a project-based approach to illustrate how foundational courses on these topics relate to STEM careers. The second includes placement assessments to ensure students are targeted to appropriate introductory courses. The third focuses on student success skills in and American university, specifics of American Education and how it will differ from their high school experience, and other student life and academic programs implemented by SDSU Georgia.

SDSU Georgia introduced Remedial short courses for underachieving students in Math during winter break, starting 2019. Remedial courses will also include study skills seminars and targets to reduce failure/repeat rates for those students who take advantage of this offering.

SDSU Georgia's recruiting efforts employ several tools:

1. Presentations, info session visits to high schools in Tbilisi and regions of Georgia to raise awareness of STEM education and programs offered by SDSU Georgia. SDSU Georgia recruiting team visits 250-300 schools each recruiting season in Tbilisi and regions.
2. STEM Academies in Tbilisi and regions. SDSU Georgia holds 8 to 10 STEM academies each recruiting season to give attending high school students better understanding of importance of STEM education and opportunities on job market for STEM graduates.
3. Database of 12th graders interested in STEM. SDSU Georgia recruiting team communicates with students in the CRM database with important news and success stories of SDSU Georgia students.
4. Facility tours for prospective students and their parents.
5. STEM Parent Info Sessions organized in Tbilisi and regions each year to continue to sustain parent interest and demand for STEM education.
6. STEM Teacher info sessions, organized in Tbilisi and regions each year.
7. US Education Fairs in Tbilisi and neighboring countries of Georgia to recruit international students.
8. Alumni Fairs in the regions of Georgia.

Starting from 2019, SDSU Georgia recruiting team has started working with partner universities to train PU staff and help them implement their own recruiting tools for the STEM programs that will be transitioned to partner universities in the coming years.

Figure 2 presents the 2019-2020 Recruiting Timeline for the fifth cohort as an example.

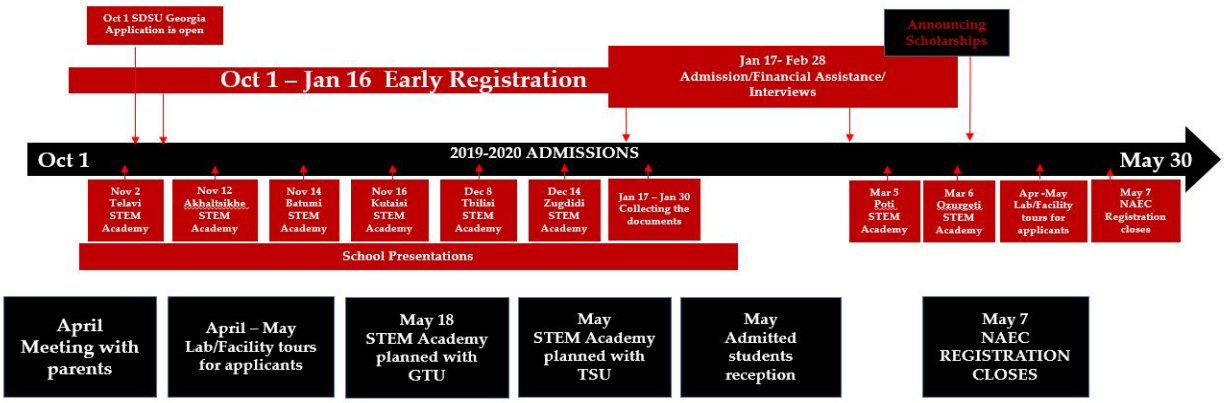

Figure 2. 2019-2020 Georgian Recruiting Timeline – Fifth Cohort

Regional recruitment campaign comprised of diversified programming reaches more than 300 public and private schools nationwide, including specialized science schools in Tbilisi and around the country. The information sessions are targeted to identify potential academically driven students with strong background in STEM, as well as students with diverse backgrounds, coming from low-income families, IDPs, minority groups, female students and other socially vulnerable categories. In addition to nationwide outreach and recruitment, SDSU-G has been able to outreach students across the administrative border in Abkhazia, which resulted in the first time enrollment of students from Georgia's occupied territory of Abkhazia.

SDSU-G has targeted its recruitment activities to reach and prepare disadvantaged and underrepresented populations for success in the program. SDSU-G has been able to raise funds to provide need-based scholarships for these disadvantaged groups, offer preparatory English and STEM training to improve their competitiveness and help them qualify English language requirement of the program.

SDSU Georgia countrywide recruiting campaign aimed to increase awareness of the importance of STEM education through school visits, media relation campaigns, and STEM events. Outreach goals have been determined as follows:

1. Increasing general STEM awareness through additional programming with the focus on parents, teachers and students, extended outreach to Grades 9 through 12.
2. Building on the success and outcomes of the initial partnership cycles (2014-2017) lead effective and results oriented full scale nationwide operation of outreach and recruitment.
3. Increasing the capacity of SDSU Georgia partners TSU, GTU and ISU to engage in effective independent STEM outreach campaigns through transfer of expertise through joint visits, outreach and recruitment efforts and with further scope of transfer identified in Transitional Committees established by SDSU Georgia.

Regional recruitment campaign comprised of diversified programming reaches more than 300 public and private schools nationwide, including specialized science schools in Tbilisi and around the country. The information sessions are targeted to identify potential academically driven students with strong background in STEM, as well as students with diverse backgrounds, coming from low-income families, IDPs minority groups, female students and other socially vulnerable categories. In addition to nationwide outreach and recruitment, SDSU Georgia has been able to outreach students across the administrative border in Abkhazia, which resulted in the first time enrollment of students from Georgia's occupied territory of Abkhazia.

4.5 Recruitment and scholarship data for the fifth cohort

The fifth and final cohort with four degree programs: Chemistry/Biochemistry, Computer Engineering, Electrical Engineering, and Civil Engineering will enroll 150 students for the 2019-2020 Academic year. **Table 3** shows how the quota is distributed between programs and partner universities.

Table 3. NAEC quota by Partner Universities and programs

Partner University & Program name	**Available spots # for 2019-20 enrollment (175 students)**
TSU	105
Electrical Engineering	10
Comp. Engineering	45
Chemistry/Biochemistry	50
GTU	30
Civil Engineering	5
Comp. Engineering	25
ISU	40
Electrical Engineering	20
Civil Engineering	20

SDSU Georgia has received 215 applications for the AY 2019-2020. Participation rate of female applicants is unchanged from the past trend at SDSU Georgia programs at 38%. Prospective students from regions is also at 31%, which is consistent with the past experience. The most demanded program for the fifth cohort is Computer Engineering with 50% of applicants, Chemistry/Biochemistry program has 24% of total, Civil Engineering – 16%, and Electrical Engineering – 10%. Additional data on the fifth cohort applicants is presented in **Table 4 and 5** below.

Table 4. Distribution of applicants by Gender, Region, and Social Vulnerability

Total	Submitted	Female	Male	Regions	Tbilisi	SV
215	197	81 (38%)	134	67 (31%)	148	38 (18%)

Table 5. Distribution of applicants by program

Program	Computer Engineering	Electrical Engineering	Chemistry/ Biochemistry	Civil Engineering
No. of App's	106	21	52	36

As of May 7, 2019 total number of applicants who have received scholarship to study on SDSU Georgia programs is 120. Average scholarship is 76%, which is expected to increase due to the fact that only 60% of the applicants have completed all steps required before receiving scholarship. Average interview score (on a scale of 100) for the pool of qualified applicants is 90.5. **Table 6** gives a more detailed information on numbers for each scholarship category.

Table 6. Scholarship categories for the fifth cohort

Scholarship Amount	50%	53%	60%	63%	64%	67%	70%	73%	75%	77%	80%	87%
Number of confirmed applicants	4	4	5	1	2	13	1	20	8	1	30	31

This information shows that scholarship categories are diversified and that most of the applicants (50% of the total) require a scholarship of 80% or higher.

4.6 Program Enrollment and Academic Performance

During the Fall semester of 2015, the first cohort of students began their studies, with a total of 81 students enrolled in the Fall, and 5 more students joined through mobility in Spring 2016, making the total count of Cohort 1 enrollment 86. In the Fall of 2016, the second cohort was added and began their studies. The second cohort admission consisted of 126 students, and 1 more student joined through mobility in Spring 2017, making the total count of Cohort 2 enrollment 127. In the Fall of 2017, the third cohort was accepted. Initial enrollment number for cohort three was 199 students. In the Fall of 2018, the fourth cohort of students was accepted. Initial enrollment number for cohort four was 230 students, of which 3 students deferred their status for a study abroad opportunity and did not enroll. As documented in past reports, some changes occurred, with a few students changing majors, universities or becoming academically disqualified. There are currently 530 students currently active at SDSU Georgia programs. **Table 7** shows student enrollment numbers by Major as of the end of Fall 2018 semester.

Table 7. Current Enrollment numbers by Programs, Cohorts, and Partner Universities

Major	**Number of Students (current)**				**No at:**			**No of women**	**No of men**	**No of Int'l Students**
	1st cohort	**2nd cohort**	**3rd cohort**	**4th cohort**	**TSU**	**ISU**	**GTU**			
Electrical Engineering	14	13	24	19	52	14	4	10	60	4
Computer Engineering	27	22	25	50	94	26	4	35	89	10
Chemistry/Biochemistry	16	24	28	59	127	0	0	83	44	0
Computer Science	1	32	44	75	151	1	0	41	111	4

Civil Engineering	0	2	19	17	1	0	37	15	23	2
Construction Engineering	0	2	10	7	0	0	19	8	11	0
Totals (semester start)	61	99	156	227	433	44	66	195	348	19
Disqualifications at the end of semester	1	2	4	0	5	1	2	1	6	0
Voluntary departures at the end of semester	2	2	2	1	4	2	0	2	5	0
Enrolled at the end of Fall 2018				1	1				1	1
New totals for Spring 2019	58	95	150	227	425	41	64	192	338	20

S/S=Social support, students with official government status in a social support category

TSU=enrollment via Tbilisi State University as partner university

ISU=enrollment via Ilia State University as partner university

GTU=enrollment via Technical University as partner university

Students at SDSU-G perform at or above the level of their peers on the main campus. Seeing as there are considerable data indicating the positive impact of active student life on the retention and success of students in demanding fields like STEM curriculum, SDSU-G supports American style student life of its students. SDSU-G sponsors student clubs which focus on particular disciplines and hobbies to provide extracurricular opportunities to students. SDSU-G partners with private sector to offer invited speaker series, organizes field trips to local industries, environmentally relevant sites, and arts and culture events. Average GPA for all three cohorts of SDSU-G students as of the end of the Fall 2018 semester is 3.09. Retention rate for Georgian students is 80%. 88% of the active Cohort 1 students are on target to complete their studies in 4 years, in challenging academic subjects.

Figure 3 presents a histogram of GPA performance across all four cohorts. This presents cumulative GPA, which for cohort 1 accumulates across 7 full semesters and the extended sessions, for cohort 2 – 5 semesters and the extended sessions, for cohort 3 – 3 semesters and extended sessions, and for cohort 4 is equivalent to the Fall 2018 semester because that is their only semester to date. A total of 21 students from cohort 1, 42 students from cohort 2, 59 students from cohort 3, and 81 students from cohort 4 are on Dean's List for the Fall 2018 semester, with a cumulative GPA of 3.5 or more.

A total of 26 students have achieved or maintain a perfect 4.00 GPA at the end of the Fall 2018 semester, of which: 1 is from Cohort 1, 1 from Cohort 2, 4 – Cohort 3, and 20 – Cohort 4.

A total of 4 students from Cohort 2, 9 students from Cohort 3, and 26 students from Cohort 4 have achieved a cumulative GPA under 2.0 as of the end of the Fall 2018 semester, and they were placed on academic probation. In order to maintain academic eligibility and work towards a return to good academic

standing, a student must achieve a GPA above 2.0 in subsequent semesters, and must bring their overall GPA above 2.0 within 3 semesters.

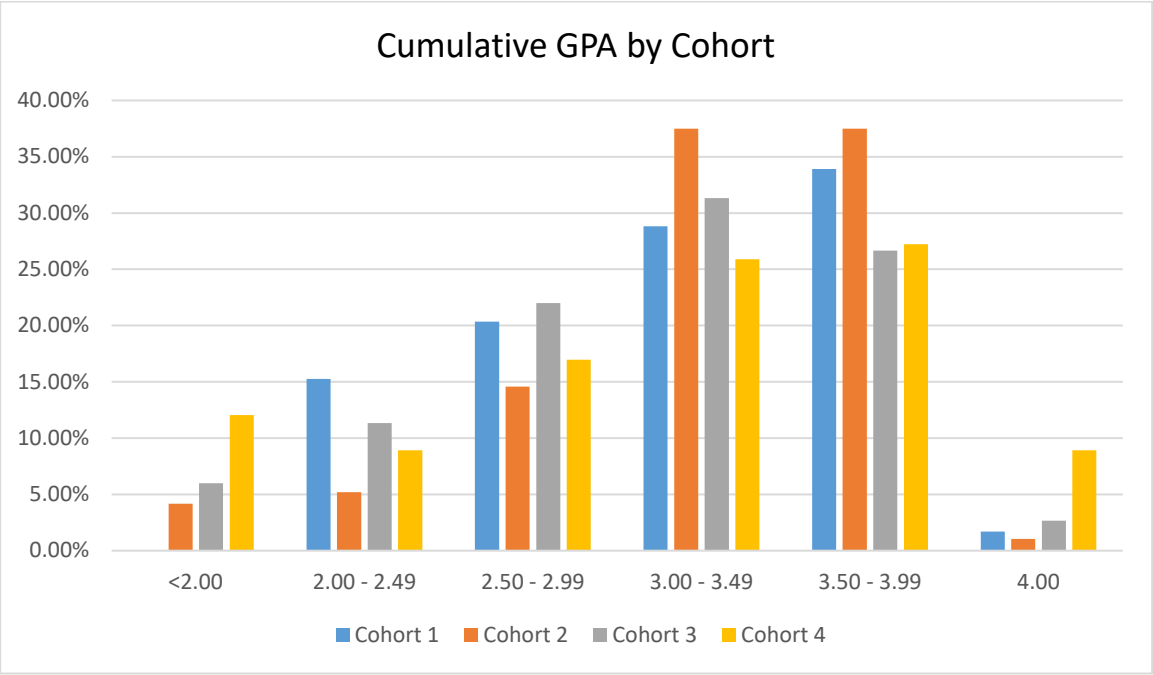

Figure 3: Histogram of Cumulative GPA performance for cohorts 1, 2, 3, and 4 at the end of Fall 2018

4.7 Student Learning and Support programs

Academic support, including textbooks, lab supplies and services such as student academic advisors, mentors and tutors, and opportunities for student experience development activities have all been specifically incorporated into the project and budget to include both group and one-on-one student services. These programs are implemented in close consultation with SDSU-G, Partner Institutions, and the SDSU-G student body.

4.7.1 English Language Academy

Because English is the language of instruction in the SDSU-Georgia Bachelor's degree programs, to enroll, students must pass the NAEC English Exam with a score of at least 68.5. In addition to the national exams, students who enroll in SDSU need to pass the TOEFL in accordance with SDSU requirements. Thus, a key objective of SDSU-Georgia is to provide an opportunity for students, including those from socially vulnerable groups who are likely to have less facility in English, to enroll in and successfully earn an internationally accredited undergraduate STEM degree. To this end, in addition to meeting the initial minimum NAEC English requirement, students must have a reasonable facility in speaking, writing, reading, and comprehending English language to be successful at SDSU-Georgia where all courses will be taught in English and will use textbooks written in English. Therefore, an intensive English Language Academy (ELA) has been established to support, preparation for enrollment in a SDSU degree program. All students are expected to achieve a minimal score of 70 on the TOEFL prior to the end of the first academic year of the SDSU-Georgia program. SDSU engaged a service provider in Georgia to initiate and implement English language support, which was overseen by qualified language instructors/administrators from SDSU. At

present, subject to continuing assessments, our plan is that supplemental GRDF funds would be used in CY2-5 to support ELA services. Based upon feedback from students the provision of English language support is an important complement to the recruiting efforts and is necessary for many students, especially socially vulnerable students. The program, its effectiveness, and future needs will be re-evaluated on a continuous basis, with particular emphasis on monitoring the requirements of the program in the changing environment of dual-language instruction anticipated at the primary school level. Because Georgia changed the primary foreign language instruction for Georgian public schools from Russian to English (in 2010), it is possible that the English language preparation needs of prospective university students may change significantly in the next four years eliminating or at least reducing the demand and need for English language training. Further, additional models for how instruction could be delivered, and whether it is effective to deliver to high school students given the enrollment procedures in Georgia, will be considered. The ELA program will be monitored to align services with the needs of the students and program objectives, especially as they relate to the socially vulnerable students.

The ELA program referenced above is expanded through the development of an English Language Development Center and integration of English language learning and support activities that connect with and contribute to our student life program. This effort was kicked off in Fall 2016, and it is progressing well. Currently, there are several well-functioning, and well attended, student clubs operating under ELDC. Further, the ELDC also engages students in tutoring of their peers in the development of written and spoken English skills, improving the English abilities of both parties. The project is modeled after but expands upon the Writing Center on the main campus in San Diego, and is able to borrow from the Writing Center and adapt that program to the needs of students in Georgia.

A Help Center program has been successfully implemented to assist students deficient in pre-Calculus, Calculus, Physics, and Chemistry classes. The Center employs student mentors and works with students to improve their study skills.

4.7.2 Academic Advising

SDSU Georgia offers academic advising and a special assistance to the freshmen students to ensure successful adaptation to the American University culture and academic requirements. SDSU Georgia employs several tools for this purpose: ELDC for English language help, help desks in specific lower division subjects, instructor office hours, psychological consulting services, remedial short courses, etc. Students are also offered individualized study maps based on the subjects that they are having trouble with.

4.7.3 Grant for Enrichment and Development of Student Experiences

SDSU Georgia is deeply committed to international education. Internalization is central to university mission and as an important aspect of internalization is gaining an international (study abroad) experience, SDSU Georgia offers support to its students to spend time on home campus to develop their student experiences. Programs are supported by the Grant for Enrichment and Development of Student Experiences (GEDSE) funds. GEDSE proposal was submitted to the Millennium Challenge Account Georgia on April 30, 2018, and subsequently approved on May 4, 2018.

GEDSE program funds are used to fund the following student development activities: Short-time funded summer research program on Home campus, semester-long funded Exchange program, and short-time funded visits for STEM Conferences and Competitions abroad.

Summer Research program piloted in the summer of 2018. The principal aim of the initiative was to offer unique first-hand experience of carrying out highly sophisticated research to academically qualified SDSU Georgia students and to motivate them to gain additional experience in their field of study. This project

also aims to prepare these students for their undergraduate research/senior project.12 SDSU Georgia juniors were selected to conduct research at SDSU home campus alongside professors in their field of study. Students chosen to take part in this session were granted full or partial funding to cover expenses incurred during their 4-10 week stay. Students were selected according to their academic performance, financial need, motivation and a clear interest in the topic of the research. A few examples of topics of their research include: Fall Detection and Prediction using machine learning (Computer Engineering), Quasidynamical symmetries in nuclear shell model (Electrical Engineering), Using Protein Design to Engineer a Scaffold for Regio-Selective C-H Functionalization (Chemistry/Biochemistry). Summer Research funding continues for the summer of 2019. For this year 11 students were selected to visit home campus to conduct their research, for four weeks.

GEDSE program also covers funding for exceptional students to visit SDSU home campus for a semester exchange. The exchange funding is available for the students who are able to demonstrate financial need and have maintained a 4.00 GPA by the end of their third semester. Since 2018, three students have visited SDSU home campus with full funding of GEDSE program.

Up to 10 students have also been funded to visit educational conferences and competitions in the U.S. and Europe.

4.7.4 Student Life

Student clubs focus on particular disciplines and hobbies to provide extracurricular opportunities to students. SDSU Georgia partners with private sector to offer invited speaker series, organizes field trips to local industries, environmentally relevant sites, and arts and culture events. There are considerable data indicating the impact of such student life activities in the retention and success of students in demanding fields like STEM curriculum. In addition, these activities offer networking opportunities that enable employers to see the high quality of the program and students, which enhances university-industry connections and leads to increased access to high quality careers after graduation.

As part of introducing SDSU student life practices, SDSU Georgia organized and the student body elected its first Associated Student Chapter of SDSU Georgia in December 2017. This intended to help keep the finger on the pulse of student satisfaction. SDSU Georgia Associated Students Board of Directors has successfully connected with the SDSU A.S.B.O.D. to further their understanding of how a student body organization should function. SDSU Georgia supports the new initiatives of the board to stimulate the student life experience. The first board served until the end of 2018-2019 Academic year. In March 2019, the new A.S.B.O.D. was elected to serve for the 2019-2020 Academic Year. Board Elections will be held every year, in March.

New structures to enhance university-industry collaboration in the form of events and advisory committees are also supported. Industry Advisory board provides faculty visibility on current needs and trends to improve curriculum development. Board members advocate for SDSU Georgia within their own organizations, as well as become engaged with SDSU Georgia and educated about the criticality of its STEM undergraduate programs.

4.7.5 Career Development Center

In 2018, SDSU Georgia established a Career Development Center (CDC), aiming to equip students with good self-presentation skills, and market student skills to public and private partners. Students are trained in resume writing and job interviewing techniques by CDC staff and invited guests, MOU's are being signed with public and private partners to create employment opportunities for students, Employment Relations Manager has been dedicated to communicate with public and private partners on student internships and

employers, CDC website has been created to provide information on job openings and internships to students, as well as give potential employers access to student resumes, annual job and internship fairs are being organized, Professional development and CV workshops are being organized with interactive panels from leading industry professionals.

Through the efforts of Career Development Center established in late 2018, SDSU Georgia students have already received acceptance from various prestigious universities, including:

- KU Leuven (Leuven, Belgium)
- Rutgers University (New Jersey, U.S.A.)
- Dartmouth College (New Hampshire, U.S.A.)
- Case Western Reserve University (Ohio, U.S.A.)
- University of Maryland, College Park (Maryland, U.S.A.)
- Carnegie Mellon University (Pittsburgh, U.S.A.)

4.8 Sustainability Plan (including sustainability risks)

The proposed Georgia 2020 collaborative is built upon a carefully planned, phased-in implementation process that simultaneously takes into account social and cultural conditions in the Republic of Georgia and inherent uncertainties in the development and implementation of such an ambitious and innovative program. The process also proactively integrates methodology to minimize potential obstacles or risks to successful implementation and long-term sustainable educational programs ultimately led by the Georgian partner institutions.

San Diego State University has a vision for an innovative degree implementation partnership that uses Academic-Industry-Government alliances to transition existing programs to independent internationally recognized ABET/ACS accreditation.

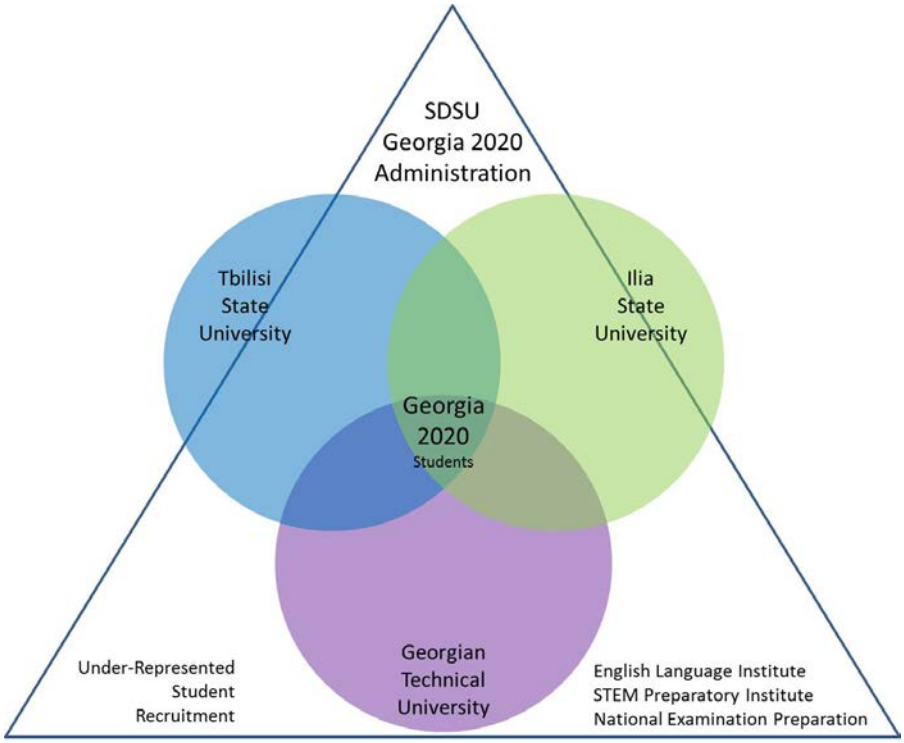

Figure 4. Conceptual design and relationship among the programs and target student populations.

Sustainability plan covers all respective sustainability pillars: Institutional Sustainability, Financial, Policy/Legal, Environmental, and Social.

Sustainability plan will include:

- Program transition plan and possible outcomes
- Comprehensive maintenance policy
- Tools for ensuring cohort growth
- Information on philanthropy commitments
- Information on Accreditation of the programs
- New facility sharing models.

Objectives of the Communications and Development Program Closure Plan include:

Objective 1: Raise public awareness and communicate the program results and success stories to internal and external audiences, program stakeholders, partners and public at large;

Objective 2: Support the career development and employability of SDSU Georgia students;

Objective 3 - Support the transfer of knowledge and best practices to partner universities.

5. CHALLENGES AND LESSONS LEARNT

SDSU-G was prepared for the challenges associated with three different partner institutions. Although, it has proven difficult to be able to synchronize the three universities, especially considering that two of these have had a long history of existence and different profiles. This led to increased competitiveness between the universities over the years. As a result, throughout the project the three state universities: TSU, ISU, and GTU have not been able to form a partnership with each other. No agreement has been reached regarding sharing of the spaces renovated through SDSU-G project for the collective use of all three university students. SDSU-G intends to continue being an intermediary in building future collaboration among the three institutions.

It has also proved a challenge for SDSU-G to identify qualified instructors for training to deliver the approved course material in English language. To mitigate this risk, a strategy has been developed to start collaboration between PhD students of partner universities, with mentors from SDSU. This will help identify more young qualified candidates to teach in Partner University STEM programs after the completion of SDSU-G project.

There have been questions regarding the capability of partner universities to handle/maintain the assets (laboratories, equipment, and facilities) adequately. As a solution, an agreement has been signed between parties that outlines asset transfer requirements as a part of the sustainability plan. Prior to transferring the assets to the partner universities, PU's have to develop a comprehensive maintenance policy. Asset transfer schedule will be updated on a yearly basis by SDSU. But as the transfer of the assets largely depends on the readiness of the partner universities, handing over of each item will be processed only when SDSU is confident that the specific partner university is capable of maintaining those assets.

There have been hardships associated with the readiness of high school graduates for the American University culture since the current K-12 education system in Georgia does not provide the high school

graduates with the minimum competence and critical thinking skills needed for their further studies. High schools are not equipped with science laboratories and availability of qualified teachers remains an issue. SDSU-G addressed this problem by providing additional preparatory classes for conditionally admitted students to better prepare them in science/English. SDSU-G organizes orientation events for freshmen to familiarize them with the specifics of American university culture, including the importance of continuous education, active student life, component of General Education subjects in STEM curriculum, and the multiple tools available to help their academic performance.

Georgian education system requires high school graduates to pass centralized exams organized by the National Assessment and Examinations Center (NAEC) in multiple required subjects, to be eligible to enroll at a Higher Education Institution. Because of this additional obstacle, SDSU-G was unable to use the same process for admissions as at SDSU. SDSU-G has been able to successfully modify the admissions process to accommodate this requirement, although NAEC exams creates an uncertainty with the admissions, as the exam results are not known until a week before the start of the Fall semester, and due to the issues specified above, some of the conditionally admitted applicants are not able to enroll at SDSU-G due to their NAEC scores.

Tuition for Georgian citizens, in public universities of Georgia is 2,250 GEL, which is around USD 840 per year, which is 8-9 times lower compared to SDSU-G annual tuition for Georgian students (USD 7500). However, this tuition represents a competitive rate for regional private institutions, many of which do not provide accredited degrees. Finally, SDSU typically charges additional fees for student life, library access, and supplies needed for the laboratory intensive degrees and courses proposed. These fees are incorporated into the proposed tuition for SDSU-G programs, with services comparable to those available to on-campus students at SDSU. Despite all this, it has still proven challenging for some families to cover this amount of tuition so scholarship funding had to be increased.

6. CONCLUSIONS

Overall, SDSU Georgia program was successful in three fronts:

- Increasing STEM awareness in Georgia and preparing highly qualified STEM professionals
- Initiating reforms in STEM subjects in Georgia and having accreditation concepts take root in the public universities in Georgia
- Facility renovation activities led to a construction of the first new state (public) university STEM building to be constructed in Georgia, since Georgia has gained its independence

The program will graduate approximately 600 STEM professional till 2023. By this time, it is expected that the Georgian partner universities will have their own ABET accredited STEM programs, in either Georgian or English languages. This will be the ultimate proof of building capacity in STEM fields in Georgia. Our Georgian partner universities will take over the role of graduating students from internationally accredited STEM programs in Georgia. It is expected that two such programs, both in Georgian and English languages, will be accredited by ABET as early as AY 2019-20.

In summary, SDSU-G helped start a transformation in STEM education in the Georgian higher education landscape. New structures are introduced to enhance instructional quality and effectives; continuous improvement processes are introduced as part of the international accreditation requirements; university-industry collaboration in the form of events and advisory boards and committees are established. Industry Advisory Boards typically provide faculty visibility on current needs and trends to improve curriculum development. Board members advocate for the university within their own organizations, as well as become engaged with the university and stay educated about the criticality of its STEM undergraduate programs. In addition, these activities offer networking opportunities that enable employers to see the high quality of the program and students, which enhances university-industry connections and leads to increased access to high quality careers after graduation. Above were demonstrated in Georgia, through the example of SDSU-G's presence and activities in Georgia.

SAN DIEGO STATE UNIVERSITY
Georgia

S SCIENCE
T TECHNOLOGY
E ENGINEERING
M MATH

Enrollment Report and Budget

June, 2019

MILLENNIUM CHALLENGE ACCOUNT GEORGIA

MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

Enrollment Numbers of four cohorts

	Enrollment of 2015 -16 (Cohort 1)		Enrollment of 2016-17- (Cohort 2)		Enrollment of 2017-18 (cohort 3)		Enrollment of 2018-19 (cohort 4)		Total	Total
	# of students at the Enrollment	As of May 2019	# of students at the Enrollment	As of May 2019	# of students at the Enrollment	As of May 2019	# of students at the Enrollment	As of May 2019	# of students at the Enrollment	As of May 2019
Georgian	83	57	116	88	182	144	225	221	606	510
International	3	1	11	7	17	6	5	6	36	20
Female	21	18	56	43	55	45	87	86	219	192
Male	65	40	71	52	144	105	143	141	423	338
Total	86	58	127	95	199	150	230	227	642	530

Enrollment Numbers by Programs

Program name	Enrollment of 2015 -16 (Cohort 1)	Enrollment of 2016-17-(Cohort 2)	Enrollment of 2017-18 (cohort 3)	Enrollment of 2018-29 (cohort 4)	Total
Electrical Engineering	20	18	29	19	86
Comp Engineering	48	35	37	53	173
Chemistry/Biochemistry	18	37	39	61	155
Comp Sci	0	37	50	75	162
Civil Engineering	0	0	25	15	40
Construction Engineering	0	0	19	7	26
Total # of students at the Enrollment	86	127	199	230	642

Current Numbers by Programs

Program name	Enrollment of 2015 -16 (Cohort 1)	Enrollment of 2016-17-(Cohort 2)	Enrollment of 2017-18 (cohort 3)	Enrollment of 2018-29 (cohort 4)	TSU	ISU	GTU	Total
Electrical Engineering	14	13	24	19	52	14	4	70
Comp Engineering	27	22	25	50	94	26	4	124
Chemistry/Biochemistry	16	24	28	59	127	0	0	127
Comp Sci	1	32	44	75	151	1	0	152
Civil Engineering	0	2	19	17	1	0	37	38
Construction Engineering	0	2	10	7	0	0	19	19
# of Students as of June 2019	58	95	150	227	425	41	64	530

SAN DIEGO STATE UNIVERSITY

Georgia

FINAL POST-COMPACT WORKPLAN

JUNE, 2019

Program Closure Plan developed by San Diego State University and

San Diego State University Research Foundation

1. Project closing strategy

The project closing strategy of SDSU and SDSU Research Foundation includes project closure plan which sets out the proposed approach to the project closure via listing specific actions to be taken for the successful completion of the project, and a plan for ensuring the sustainability of the results achieved.

This is the first draft of the Project Closure and Sustainability Plan presented to MCA-Georgia for consideration. The document will be finalized on the basis of feedback received on this draft.

2. Some activities to be carried out by San Diego State University and San Diego State University Research Foundation before the closure as a part of the closure and sustainability plan, such as:

a) Formation of the Transition Committees at the partner universities shall be completed by May 2018.

The mandate of the committees: As the program transition is the key aspect for sustainability, to ensure smooth completion of the transition process, SDSU initiated to form respective committees at the partner universities. The committees shall be uniting representatives from the key (project related)[1] services/departments of the universities and they shall be actively engaged in the implementation of the PCP activities requiring their input. Transition committees shall guarantee: timely information sharing with the ad hoc teams back at their organizations; monitoring of the works to be carried out before the end of the compact and compliance with the deadlines; involvement in the important negotiations on the maintenance of the assets after the transfer takes place, as a component of sustainability of the partner institutions; Also, one of the key roles conferred upon the transition committees shall be their engagement in the review process of the partnership agreements concluded between

[1] Committees shall unite: Academics (Dean, 1 overall coordinator, 1 academic from each program);
Administration representative (in charge of space allocation, facility maintenance, course scheduling, etc)
Finance – Budget – Operations (determination of tuition, costs, procurement-supplies, etc.)
PR (Community outreach, program awareness, PPPF issues, etc.
Recruiter/Admissions (STEM Academies, international recruitment, etc.)
HR (for faculty/staff, professional development, English language training for faculty, etc.)
Quality Assurance.

the three Georgian Universities and SDSU and SDSU Research Foundation. *(Please see more regarding the revision of the existing contracts in Section 3 Legal Requirements)*

Status: *The Transition Committees are formed and operational at all three universities.*

b) Training needs assessment conducted before December 1, 2018.

Training needs for the staff of the partner universities for sustainability purposes shall be identified by the SDSU and the topics agreed together with the transition committee members before December 1, 2018. Specific information on the trainings shall be available once the committees and SDSU representatives start having discussions and select topics which shall be beneficial for the partner institutions especially post SDSU-G.

Status: *Training needs are discussed at the Transition committee meetings, some of the trainings were already held, for instance regarding maintenance issues.*

c) SDSU-G Faculty Development Program Alumni Association Charter separate for each partner university shall be developed by February 1, 2019.

Association will have "chapters" in the three partner universities, members of the chapters will act as trainers to train other members of the faculty in their respective institutions.
The FADEPA members will help train additional members of their respective faculties, and it will also help develop and disseminate information and resources in support of university activities in sustainability and continuous improvement.
The FADEPA office will serve as the liaison office of SDSU BEYOND THE COMPACT CLOSURE AND BEYOND THE SDSU-GEORGIA CLOSEOUT. It shall be in charge of coordination between SDSU and the partner universities for student exchange, scholar exchange, research projects, etc.

Due to the argument of the partner universities about the possible complications related to the formation of the new legal person (even though non-profit) partnership agreements introduced a new wording, which reads that the partner university "through the transition committee, shall collaborate with SDSU-Georgia on forming a mechanism which shall make it possible for the partner university to have links with the SDSU home campus (after the SDSU-Georgia project is over in Georgia in 2023) for undertaking a variety of activities to support continued academic excellence, such as:….."

3. Legal Requirements

a) Existing agreement with MCA Georgia shall be reviewed and amended as necessary before June 30, 2018.

Status: *Done.*

b) Existing contracts with the three partner Universities shall be reviewed and any necessary changes introduced in September 2018, after the NAEC results shall be known/available and also ABET accreditation results. Such revisions are necessary mainly due to the purpose of sustainability, for instance one of the sustainability aspects is maintenance of the equipment procured within the frames of the contract and SDSU plans to include stronger language on maintenance in the current contracts. Another example for the importance of revision is extending the record keeping term of 3 years up to 5 years. Also, it is planned to make a reference to the ISU building construction related agreement in the existing partnership agreement with the Ilia State University and attach it as the annex to it. The revised contracts shall also cover the issue of facility sharing with the partner universities.

Status: *The Partnership agreements were signed on April 12, 2019.*

c) Memorandums for regulating post compact activities (July 1, 2019 – 2023) shall be negotiated and concluded with the partner universities before March 1, 2019.[2]

The memorandums shall be helpful to regulate issues such as record-keeping, maintenance of the assets, facility sharing, generally preservation of what has been achieved with the assistance of the MCC grant and sustainability of the programs. The partner universities shall also undertake responsibility to cooperate with relevant research organizations who carry out evaluation of the results achieved with the second compact.

The SDSU and SDSURF are considering to involve the Ministry of Education and Science of Georgia as a party of the memorandums.

Status: *It was decided during the negotiations between SDSU, MCA and MCC in March and April 2019 that there shall be a memorandum concluded between MCA successor entity, SDSU and its partner universities, MOF, MES, EQE and etc. for regulating post-compact period.*

d) Labor contracts of SDSU shall be reviewed and modified as necessary after the MCA SDSU agreement is updated.

[2] For the post SDSU-G period SDSU shall have only academic cooperation agreements with partner universities.

Relevant adjustments shall be made no later than March 2019 based on the employer's needs and overall needs in the process of the closure operations in 2019 and before post SDSU-G.

Status: *The labor contracts were revised, but not in the context of the closure operations.*

4. Record keeping

a) By March 1, 2019 a comprehensive register/list of the compact related documents shall be made and shared with MCA. After MCA-G identifies what needs to be handed over to MCA-G from SDSU, SDSU–G shall compile relevant documents and share with MCA-G.

Status: *This topic was discussed during the March and April meetings. The comprehensive list is not developed yet, as of May 2019.*

b) List of the types of records that shall be recommended to MCA-G to be retained by the respective government institution after the end of the compact shall also be prepared during the compact's last year and all relevant documents shall be handed over to MCA-G by July 1 2019.

5. Asset transfer, taxation and maintenance issues

a) Final Asset register comprised of three separate lists developed:
   i. List N1 including assets that have been already transferred from MCA-G to the SDSU-G with relevant transfer dates.
   ii. List N2 comprising all assets that shall be transferred from MCA-G to SDSURF
   iii. List N3 uniting assets to be transferred eventually from SDSURF to Partner universities.

The Register shall list exact names of the equipment, dates purchased, their value, warranty periods and insurance information (if applicable). Once all procurements are made the list shall be finalized (no later than 3 months prior to the Compact end Date).

b) Handing over the assets from MCA-G to SDSU-G shall be agreed with MCA-G and completed no later than the compact's end date of July 1 2019.

The timeline for handing over of the assets by SDSURF to the partner universities shall be available and presented to MCA-G and MCC by July 1 2019. The schedule shall be updated on an yearly basis by SDSU, as new items shall be put forward annually for arranging transfers. But as the transfer of the assets largely depends on the

readiness of the partner universities, handing over of each item shall be processed only when SDSU is confident that the specific partner university is capable of handling/maintaining the assets adequately.

Status: *The transfers shall be handled until the end of October 2019.*

c) As a part of sustainability plan, SDSURF will transfer the assets to the partner universities.
Prior to transferring the assets to the partner universities they have to develop comprehensive maintenance policy. Maintenance obligation shall be reinforced in the memorandums and also maintenance related document *(can be a policy document or even contract with service providers)* shall be annexed to the transfer agreements.

Status: The first transfer document was signed on April 12, 2019 with GTU (as of May 2019 waiting for an update from the university regarding the market research they are conducting concerning the insurance coverage).

The transfer shall be freed from taxes as the assets shall be transferred into the state ownership. Georgian Tax Code provides that unremunerated/priceless transfer to the state ownership is freed from taxes. Thus, SDSU shall be guided by article 168 (section 4, subsection "e") of the tax code once transferring assets received from MCA Georgia to the partner universities in state ownership (the provision of the tax code mentioned above refers to the assets and services provided free of charge). Each asset transfer agreement shall have two parties: 1). SDSURF and 2). The partner University (legal status: Public Law Legal Entity).[3]

6. Sustainability Plan (including sustainability risks)

a). Sustainability plan shall be delivered on April 15, 2019, however the draft shall be presented to MCA in June 2018.

The sustainability plan

I. shall cover all respective sustainability pillars: Institutional Sustainability, Financial, Policy/Legal, Environmental, Social.

[3] At present the government of Georgia reviews package of the changes in the tax code regarding the exemptions from taxes. SDSU looks forward to receiving feedback from MCA/MCC regarding the wording of the Section 5 subsection "d" of this plan and shall revise it accordingly.

It shall include:

II. program transition plan and possible outcomes
III. comprehensive maintenance policy
IV. the tools for ensuring cohort growth
V. information on philanthropy commitments
VI. Information on Accreditation of the programs.

The plan shall:

VII. introduce new facility sharing models.

7. **Communications and Development Program Closure Plan developed and agreed with MCA-G in January 2019** *(Please see the draft plan attached).* The objectives of the plan:

   Objective 1: Raise public awareness and communicate the program results and success stories to internal and external audiences, program stakeholders, partners and public at large;

   Objective 2: Support the career development and employability of SDSU Georgia students;

   Objective 3 - Support the transfer of knowledge and best practices to partner universities.

8. **Closeout operations budget**

   There is no specifically allocated sum in the budget of SDSU-G for the compact closure in 2019, however some activities such as for instance **outreach activities** have been part of the SDSU-G 2019 year plan and can be associated with the closure, relevant expanses shall be covered from the Communications budget. Any costs anticipated in excess of the existing communication budget will be estimated and incorporated into the budget request for cohort five to be submitted no later than June 30 2018.

   SDSU and SDSU RF conduct annual audits in accordance with the U.S. federal guidelines. These audits will suffice as part of the closeout function therefore no separate audit activity or budget is anticipated.

   SDSU-G for its closure in the year 2023 has closure budget equaling $312,168 allocated to cover the cost of key personnel needed to ensure an orderly closeout of the program. Any additions for specific activities required as part of the compact closeout plan will be estimated and negotiated as part of the cohort five budget to be submitted no later than June 30 2018.

9. **Risk Assessment** (risks that can cause delays in the process of implementing closure operations)

There are no risks identified at the moment apart from one and it concerns ISU new building. In case of delay of ISU new building construction works completion based on Article 9 SDSURF shall have fewer months for an exclusive access and use of the entire Building if not agreed otherwise. Article 9 of the ISU agreement currently reads: "SDSURF shall have an exclusive access to the entire building and shall be entitled to exclusive use of the entire space of the building for its academic purposes (except for the shared access and use of the parking garage per Article 9.2) until 1 July 2019 per the 45 –month enrollment period under the Collaborative Agreement, or longer as may be agreed between the parties.

Construction site details:
Land cadastre code: 01.14.07.010.023.
Address: Exit G. Tsereteli St. N1, Tbilisi, Cholokashvili Ave. N3-5, Tbilisi.
Phase 1 construction to be completed by April 30, 2018 (according to the agreement).
Phase 2 completed in 120 days after the act of acceptance into exploitation is issued.

The only measure for Construction completion delay risk mitigation can be regulating circumstances properly. And it can be done via amending existing contracts as required, setting new deadlines and revising other terms accordingly.