



THE PHOTOS ARE PART OF THE 2017 CALENDAR PROJECT, SHOT BY SDSU GEORGIA STUDENTS

# GENERATION STEM

STUDENT NEWSLETTER  
ISSUE #4,  
APRIL 2017



SAN DIEGO STATE UNIVERSITY  
Georgia



## IN THIS ISSUE:

### STEM NEWS:

MIND OVER MATTER  
PEPPER IS IN GEORGIA

### SDSU NEWS:

NEW DEGREE PROGRAMS  
NEW CAMPUS

### SUCCESS STORY:

STUDENT PROJECTS  
- QUARK, MURTSKU, ELDC



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## EDITOR'S LETTER

My name is Maka Buchunteli, I am the chief-in-editor of the newsletter - "Generation STEM". Together with the editorial team we proudly present you the 4th issue of the publication.

"Generation STEM" is a student managed newsletter of San Diego State University Georgia. Four issues, both in English and Georgian are published annually.

An enviable list of academic achievements makes San Diego state University Georgia a special place. This is proved by many stories this newsletter recounts of SDSU-G students' success and their creative, ambitious, and innovative projects.

In the newsletter you will also find news about what SDSU Georgia is offering to its current or future students. Additionally, we'll introduce you the newest discoveries and achievements of STEM fields.

It sounds engaging, doesn't it? Then, enjoy reading it!



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### CONTENT

ABOUT US 2-3

SUCCESS STORY 4-11

SDSU NEWS 12-17

STUDENT LIFE 18-21

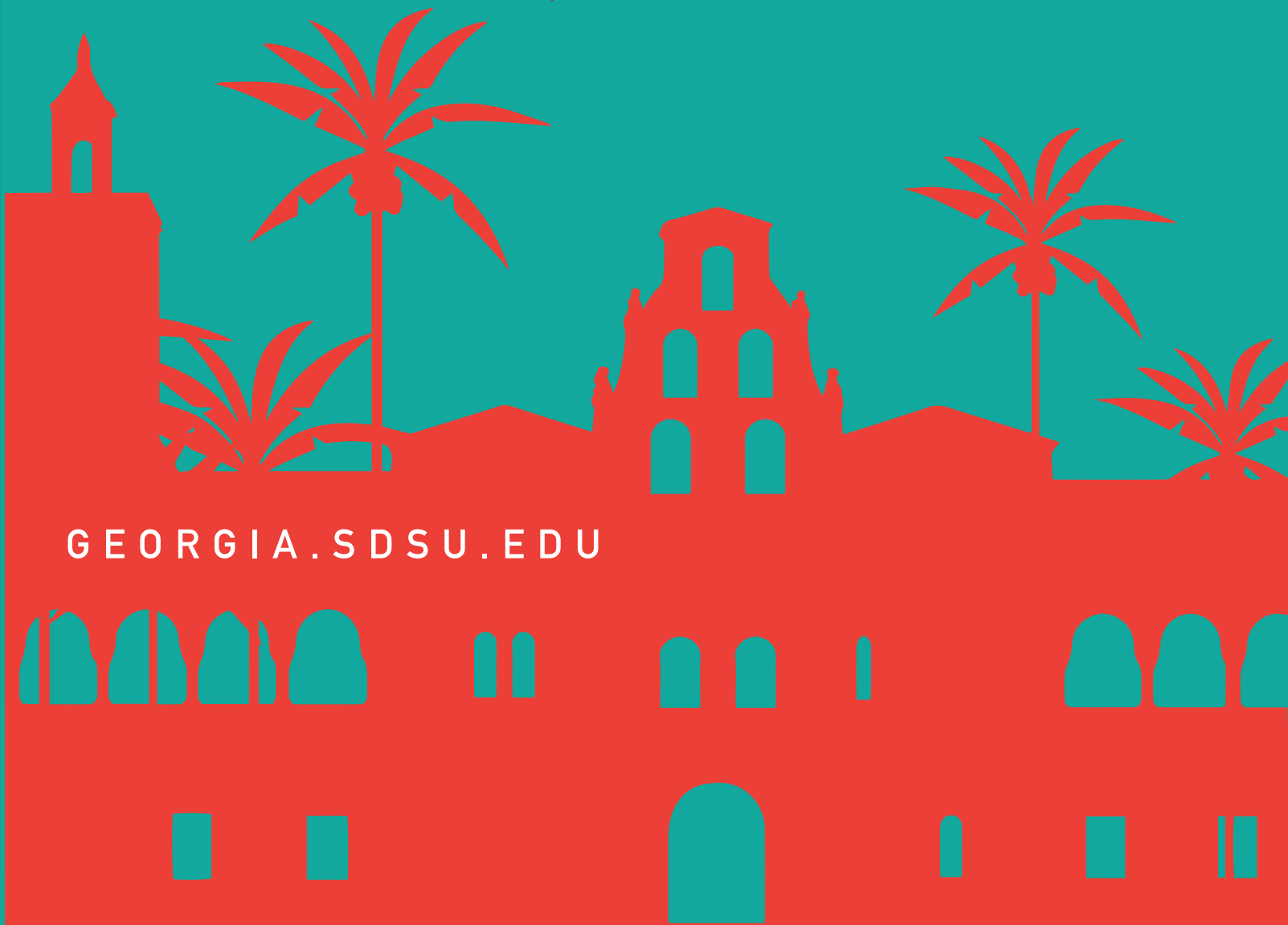
STEM NEWS 22-26

# NEW DEGREE PROGRAMS AT SAN DIEGO STATE UNIVERSITY GEORGIA

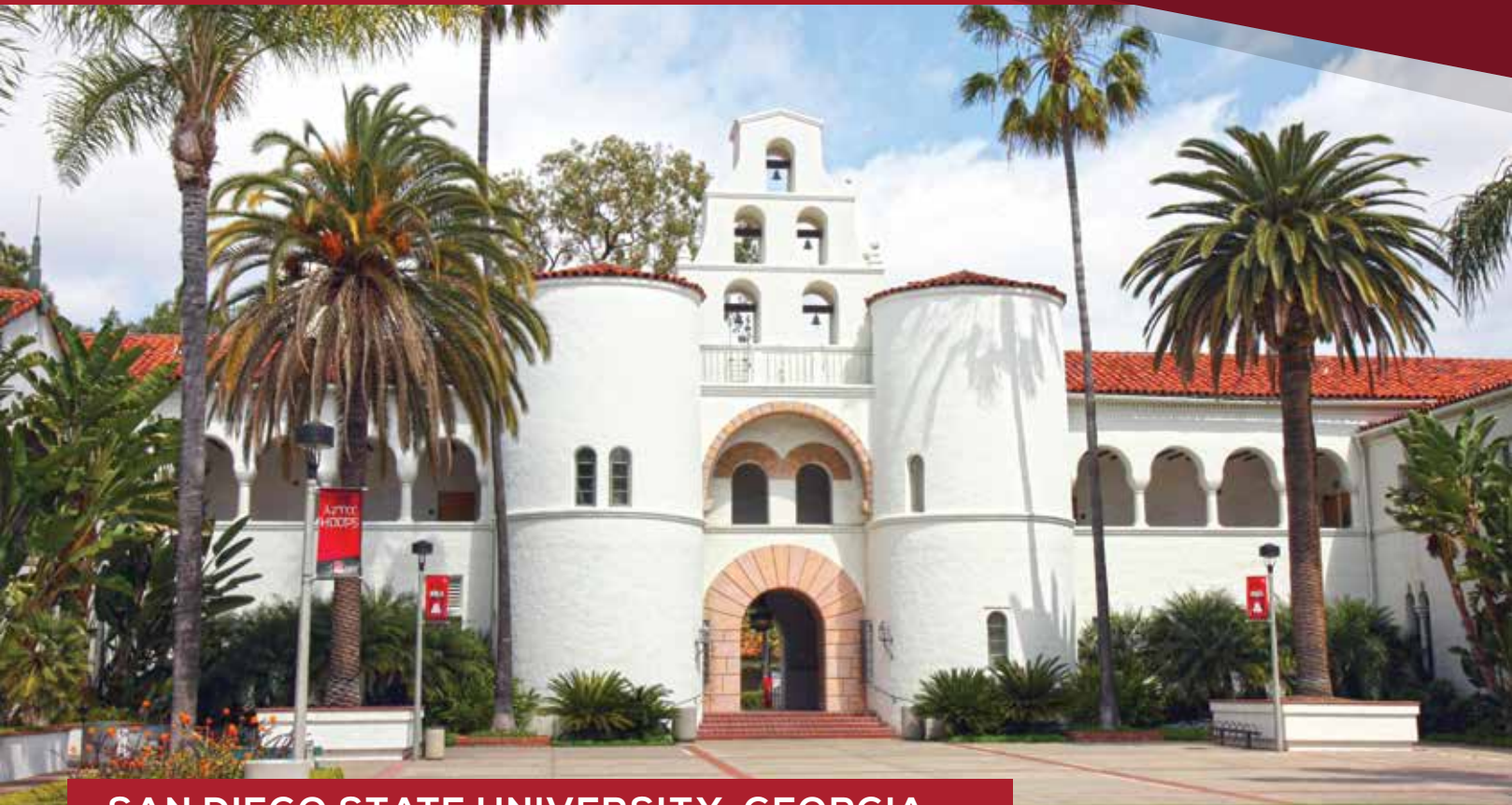
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## SAN DIEGO STATE UNIVERSITY-GEORGIA

San Diego State University (SDSU) Georgia, known as SDSU Georgia, is a branch of San Diego State University, located in San Diego city, California, USA. San Diego State University, with its long history and more than 40 000 students, is considered to be one of the biggest and oldest higher education institutions in California.

The university first appeared in the Georgian educational system in 2015 and since then, it's offering internationally accredited Bachelor of Science programs in the fields of science, technology, engineering, and mathematics (STEM). These programs enable Georgian students to receive a high quality STEM education and earn an American degree in their homeland.

The aim of SDSU Georgia is to foster the development of the fields of natural sciences and technology and contribute to the production of highly-qualified and consummate professionals in Georgia.

### **FROM 2017 ACADEMIC YEAR SDSU-GEORGIA IS OFFERING 6 STEM BACHELOR DEGREES IN:**

- ▶ Construction Engineering
- ▶ Civil Engineering
- ▶ Biochemistry
- ▶ Computer Engineering
- ▶ Electrical Engineering
- ▶ Computer science

These programs will prepare students for successful careers in the fields of natural sciences and technology. Auditoriums, equipment in the science and computer laboratories, as well as curriculums with which students study, meet the criteria of San Diego State University of the USA.

At SDSU Georgia, the courses are delivered in English by SDSU faculty from USA, as well as Georgian faculty who have been trained in SDSU, California, USA.

SDSU Georgia Students have a unique opportunity to spend one or two semesters in SDSU, California, USA, familiarise with the American culture and get education there.

# STEM



## WHY STEM

Getting education in STEM fields (Science, Technology, Engineering, Mathematics) has many principal advantages. The key subjects in STEM are physics, chemistry, biology and mathematics. STEM subjects are often interrelated and dependent on many other disciplines. Education in STEM fields is critical to a country's economic development in the 21st century.

Worldwide in our time, because of the increasing role of technologies in human's life, the demand on STEM field specialists are amazingly high and fast-rising. It's also known that, our country, sadly, at the current stage, suffers from being critically in short of STEM professionals. Exactly, for the reason, the representatives of the fields are specially high-demanded and high-paid work force on the market.

So why STEM? STEM education is a strong weapon that with new discoveries and innovative projects, enables the humankind to change the world to a better place to live in.

## WE ARE AZTECS!



The Aztec people were certain ethnic groups of central Mexico, who dominated large parts of Mesoamerica from the 14th to 16th centuries. Some of the characteristics of the society were the "fighting till the end" nature and equal rights among the commune members; in the society of Aztecs, girls, as well as boys, not only could but were required to attend schools and got education. That's why, we the members of the big family of San Diego State University consider ourselves as the descendants of Aztecs and loudly declare: We Are Aztecs!





## NEW AMERICA

Taking part in the exchange program gave me the opportunity to continue my studies in the United States. Here, during the study period, I have found a new America, which is reflected in the fact that my views about America changed radically. First of all, I have learned the value of time, as a result of studying diligently to achieving success and live independently. I am glad that I met a lot of new friends including Victoria Garcia, Claire Zimerman, Cindy Kim, and many others, with whom I spend my free time studying about American culture and landmarks. After a busy day, spending time with them and visiting nice places, is one of the excellent ways to relax. I was particularly impressed with the San Diego Museum of National Art and History. Excellent is the bright Disneyland, and beautiful Balboa park, San Diego Bay, and the sparkling Pacific coast. In short, here are gathered together, unique cultural sights and museums, world-famous theaters and breathtaking gardens.

No one can ever dream a better place to study than California. At eight ongoing lectures, laboratory works, and thousands of the homework mitigates the beautiful landscape of mountains and ocean coast, which surrounds the city. I want to say how warmly, friendly and attentive the people are, and toward to each other. No words can describe the emotions that I feel when our university basketball team plays in Viegas Basketball arena.

I got used to American lifestyle and rhythm, and if I will have a chance, I will continue my study and work of this great country. This is a country where the air is saturated with the scent of the ocean and the mountains. Here everything smells like the gold, and still plenty of people arriving to succeed, which means that the Californian fever has not finished yet. Finally, if someone asks me where I would like to live, I would immediately say in California.

## INVENTION "QUARK"

## WINS AT MAKEATHON

Organized by Industrial Innovations Laboratory-FabLab, in November 2016, in Tbilisi-city there was held a creative-technological contest – Makeathon, at which the winners became our students Lana Rekhviashvili, Ana Lomashvili and their friend, Ekaterine Dadiani, with project "Quark".

### QUARK-A MODERN GUIDE

While entering an unknown space, many people find it difficult to at once find the right auditory, meeting room or book in a library. San Diego State University-Georgia's students have made it possible to solve the problem. Their invention – "Quark" is a ball that helps us with navigation. It lets us easily find the desired thing or place. Using "Quark" is so simple:

we enter the place or thing's parameters after which the ball leads us to the destination place.

To make it easier the communication with user, Quark changes its color depending on which state of fulfilling the order, it is: if it is waiting for the order, its color is blue, after receiving the order, it gets green, when it reaches the aimed place or thing, it gets red and finally, when the user comes with the place as well, the ball gets transparent. After fulfilling the order, Quark goes back to the charging platform waiting for a new order.

One of the creators of Quark, Lana Rekhviashvili mentions that most importantly, Quark helps us when we got into an absolutely unfamiliar environment. Quark lets us easily find exhibits at museum or books at library. The superiority of Quark is that it will be available for everyone in the future.

The prototype of Quark is ready and the users of the product already can confidently travel through an unknown environment. With the name of San Diego State University Georgia's students, at Makeathon there was presented one more interesting project-ELDC (Electronic Dance Music Clothes) which deserved much of appreciation at the contest.



# ELDC DANCING T-SHIRTS

THE AUTHORS OF EDMC ABOUT THE PROJECT

Our product represents a kind of music visualizer, which will be implemented into clothes and accessories. With the way of LED (Light-Emitting Diode) light strips, that will flash and twinkle respectively to the music rhythm, frequency and amplitude, the music visualizer will perceive the music entered from outside and transfer it into colorful visualization.

DAVID JANELIDZE



By the way of various audio equalizers everyone has had experience with visualizers like the one by us. But differently from other models, in case of our model, the music is provided not from mp3 file referenced by the user, but it perceives the sound from outside and makes it synchronized on our T-shirts. This might be an entirely new word in the industry of fashion!

MIKHEIL KUKHASHVILI

We are often asked: "but don't clothes like this already exist?" actually, it's not so...there don't exist clothes with the same formulation of abilities. There exists just lightning T-shirts and not the kind that can perceive music and visualize it...our project is only at the very beginning stage but we have big plans with it, despite our busy studying time-tables, we're going to find time and work on refining it.

ALEKSANDRE TOIDZE

## ACCORDING TO NATIONAL ASSESSMENT AND EXAMINATIONS CENTER (NAEC),

### EACH YEAR THE #1 RANKING STUDENTS CHOOSE TO STUDY AT SDSU-GEORGIA



It has already become a tradition for our university that the #1 ranking student on the National Exams chooses to study at SDSU Georgia. Previous year, it was David Soselia and this year it is Tamo menteshashvili. In SDSU Georgia Tamo will study with full scholarship.

Tamo is 18 year old future computer scientist. She graduated from the #24 gymnasium in Rustavi city and was always fascinated with math and sciences. That is why her attention was easily gained by SDSU Georgia, when the US University entered the Georgian educational system in 2015, equipped with modern laboratories, promising high quality American education and degrees in STEM fields.

- I was in the 11th grade when I heard about San Diego State University's Georgian campus, and realized that it was the place where I wanted to continue studying. I already knew that this university has very high requirements and so I worked hard during the whole year to be properly prepared for the exams. I am glad that I achieved my goal and became a SDSU student with best grades.

#### **-When and why did you decide to study computer science?**

- By the way, I made the decision quite late, but, for sure, I always knew that it would be a STEM field.

In the 11th grade, I participated in a Science Olympiad organized by Tbilisi State University's (TSU) Faculty of Natural Sciences, after which I attended a presentation about San Diego State University. It was the first time I heard about this university. To tell the truth, at first, I chose the University, and only after that - the program to study at.

#### **-What are your nearest future plans?**

- All I want right now is to become a successful professional and I'll plan the rest according to the situation.

#### **-What would you advise to your peers, pupils, students and young people in general?**

- Love what you do and do what you love; There doesn't exist a formula of success, just believe in yourself and everything will be fine.

## HIGHEST RESULTS AT TOEFL EXAM

At SDSU-Georgia courses are taught in English. For this reason, each student of the university is required to pass the internationally accredited TOEFL English language test before starting the academic year. All the students are obliged to prove that they meet the language requirements needed for studying STEM (Science, Technology, Engineering, Mathematics) disciplines and that they can easily face the studying materials provided in English.

In the TOEFL test, a freshman of SDSU-Georgia, 18 year-old future biochemist Elene Aslanikashvili got impressively high results - she earned 99% of the test evaluation, while worldwide the average score taken on the TOEFL exam doesn't exceeds to 67%.



**-Elene, did you expect such high results on the test?**

-Not really, even more, I was not even sure that I would overcome the passing score... When I learned about my scores, I got so excited! First thing I did, I called my aunt, who was waiting for my call the most.

**- Tell us, how did you learn English so well?**

- I studied it at school. In addition, I'm a big fan of movies and watch them often. Also I like reading books and learning song texts by heart, I think this helped me a lot in learning the language.

**- When did you hear about SDSU Georgia first and why did you decide to enter the Biochemistry program?**

- I was at Buckswood summer school when my friend told me about the University. I got excited with the opportunity of getting an American education without leaving the country.

As for my professional choice: Jules Verne made me fall in love with science... at school my favorite subjects were: biology and chemistry; furthermore, my grandma was a biochemistry teacher and probably this fact had some influence on my decision as well. I believe that biochemistry is the best choice for me.

**-Did you find yourself in Buckswood summer school as a result of winning a contest?**

-Yes, when I was in the 11th grade, I took part in the English language National Olympiad, I got to the 3rd level of the Olympiad and as a result, they sent me there. The Buckswood summer school itself was amazing and I'm still missing it.

**- What would you advise the students who are preparing for the TOEFL exam, what's your formula of success?**

-Don't treat learning a language as homework, try to read books and watch movies in English, so that the learning process will get more diverse and interesting.

Elene took 10/10 in English language test at the school final exams, so called "CAT", and 99/100-at the National Exams. In addition, she owns a golden medal for perfect attendance at school, has 100% National tuition grant, works at the SDSU-Georgia's English Language Development Center (ELDC) and is one of the four smart young students who got scholarships from SDSU-G's partner companies in 2016. Elene became TBC bank's scholar student.

# MURTSKU

**SIMPLE AND FAST  
WAY TO STUDENT SUCCESS**

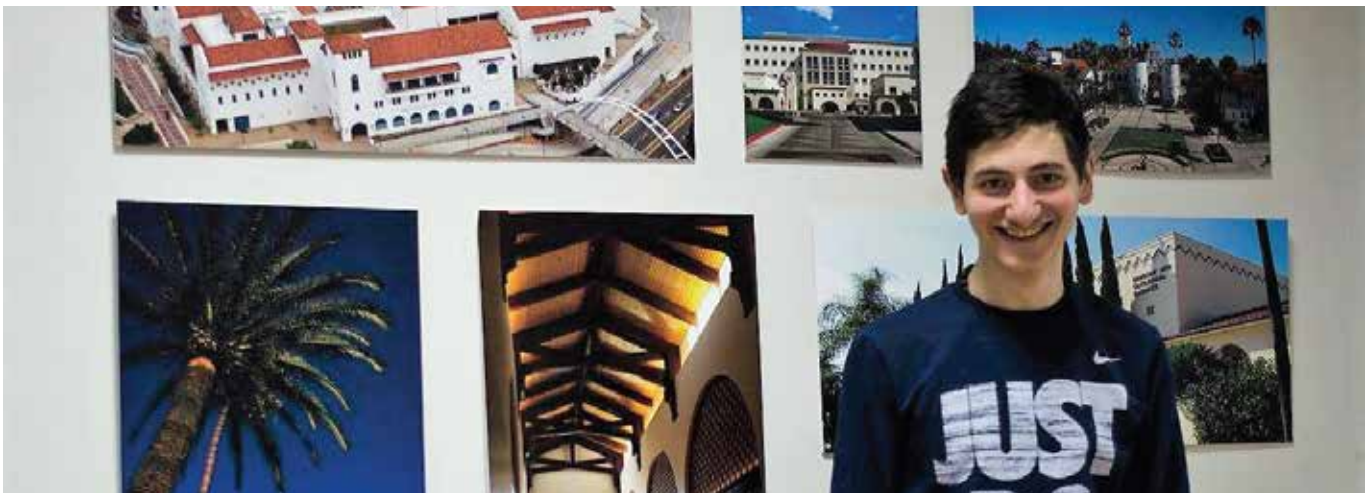
**A Georgian educational web page for students, created by SDSU Georgia student, got very popular on the internet**

School final exams, known as "CAT" (Common Admission Test) play important and deciding role in a student's life and requires hard work. Thomas Mikava, a freshman at SDSU-Georgia, studying on a computer science program, created an innovative web page "Murtsku" and streamlines to students the tough road of gaining education. As Thomas mentions, he came with the idea of Murtsku, after successfully passing final exams in 11th grade; he wanted to find out a smart and simple



way to student success. After many hot summer days spent working, a website with a very strange name - "Murtsku" appeared in the Georgian Internet space. Besides just being creative, the name has a meaning. Thomas wanted to bring something Georgian into the big Internet space and in the webpage name he included letters: „ჭ“ - "ts" and „ყ“ - "k", that are characteristic of Georgian language.

By practicing tests on "murtsku.com" students are able to prepare online for each exam, whether it's CAT or National Exams. In the very beginning, "Murtsku" was not too popular, but when the exam time gets closer, the number of users registered on it reached 30 000! Now it exceeds 100 000 visitors. This statistics were unexpected even for the author of the project. For now, in developing and perfection of "Murtsku", 25 people are involved, who absolutely tirelessly and voluntarily lead students to success. When I asked Thomas what were his plans for future, he shortly answered: "I want the level of education to get higher as much as it's possible, not only in Georgia, but in the whole world. To support the idea I try to do my best".



# SDSU

## GEORGIA STUDENTS WIN IN A HACKATHON

On the 28-29th of January, Hackathon "Smart City" was held at the Caucasus University of Georgia. At the Hackathon, during two days, participants divided into groups of two or three people, were contesting each other in finding an innovative and technological solutions to different problems associated with the city development. The contest aimed to create projects that would make our city a better place to live in.

About 20 teams were participating in the Hackathon, 3 of them were from San Diego State University Georgia.

At the end of the "marathon", 4 ideas were named as winners, among whom were Luka Lomtadze and Nika Alavidze. Luka and Nika are sophmores of SDSU Georgia, Luka studies Computer Engineering and Nika is a future electrical engineer. At the Hackathon they presented a mobile application "VaᄁaR".





„VamaR” is a mobile wallet-application, which connects to a customer’s bank account and in an automatic mode offers her notifications-when and what the use needs to pay. For example, if she gets on a bus, a notification comes on the phone, informing her that she can buy the ticket by just clicking on button. The app works as well at taxes, restaurants, parking or gas stations. The application guesses what and how much you should pay and gives you the opportunity to pay the bills in the smartest way, by accepting on the notification. The SDSUG students deserved a prize for winning in a nomination: “The most original idea”.

## SUCCESSFUL STUDENTS CHOOSE SDSU-GEORGIA

Ana Tavartkiladze is one of the seven students from Batumi, who have started studying in Tbilisi, SDSU-Georgia, after successfully passing the National Exams in 2016.

The reason, why SDSU-Georgia was interested in Ana’s abilities, was her successful participating in Chemistry Olympiad, where she took the first place.

Ana, who finished school with receiving gold medal, was always keen on Chemistry and her big interest in this subject made her an active participant of annual Olympiads and competitions. In 2015, Ana took the first place in Chemistry Olympiad, conducted by Ministry of Education, Sport and Culture, in Autonomous Republic of Adjara; In the year of 2016, she became one of the 20 students, who overcame all the difficulties and became participants of the third level in National Chemistry Olympiad. Additionally, she was awarded with the first-level diploma for writing the report about global warming, in environmental protection and ecology section of 69th education conference.



Delightful offer from San Diego State University-Georgia to study there with the scholarship was an honor for me and my family. I became more motivated to try my best and study hard. Today, I am here, at University, which, I think, will give me the chance to become a successful scientist, to do my bit to make the world a better place.







## SDSU-G STUDENTS AMONG THE FINALISTS OF EURASIA MOBILE CHALLENGE

In January, 2017 within the company-"MAKE YOUR MARK"-by Beeline, a technology competition-Eurasia Mobile Challenge was conducted.

The contest intended to involve youth of Europe and Asia in developing modern digital technologies and create new successful mobile applications.

In the contest 8 countries were participating, from each of them 3 teams should have been selected for the final. Among the 3 semifinalists from Georgia, there got an application "Persomedic", created by our own Giga Vashakidze and David Soselia. "Persomedic" is a medical platform, which aims to connect patients and doctors. The app query users their symptoms, suggest them the appropriate discipline doctors and ensures to inform and set the appointment with the chosen ones.

"diagnosing your health problems by searching the symptoms on the internet, stands out as one of the critical issues nowadays; someone, having troubles with health, goes to the internet, writes her symptoms and looks for the treatment there. As a result, unfortunately mostly, they're wrongly diagnosed with some acute diseases. Based on the information they start "curing" themselves and in most cases, sadly, it ends up with fatal consequences"  
- Giga Vashakidze.

"Our application offers 3 main features to users: the first one is a chatbot, which speaks to the consumer and then analyzes the conversation to identify the disorders and pick out the right doctor. The 2nd one is a database of doctors, placed according to the previous patients' ratings. This

ensures to increase rivalry among doctors and in addition, helps a customer to find the best professional. The 3rd one is a way of communication, which enables the user to get in touch with doctor and if needed, make an appointment"  
- David Soselia.

Among the finalists Giga and David were the youngest ones. To meet the 23 finalists, they went to Yerevan on 24-25th of January. There their app deserved much appreciated; investors from Italy and Spain already got interested in "Persomedic" and now they're negotiating.



## AN INNOVATIVE WEB-PAGE, WHICH IS ALREADY POPULAR AMONG FOREIGN TOURISTS

Mikheil Chkheidze is a sophomore studying on a computer engineering program, at San Diego State University Georgia. In October 2016 he created a webpage „Conversational Georgian Made Easy,” that offers interested foreigners the opportunity to study basic Georgian.

According to the statistics published by the United Nations, It is known that, Georgian is among the few other languages that will most likely be forgotten in the future 50 years or less. The reason for this is the Internet where the vast majority of the information is in English.

The UN recommendation suggests that the only way to solve this problem is the language computerization. These languages should be placed on the Internet as much as possible and the strong translation systems should be formed – systems, which are able to instantly, correctly and properly translate any information from any language to Georgian. SDSU student’s website may play a great role in the survival process of the Georgian language.

Web page features a variety of useful materials, such as videos, documents, exercises, knowledge exercises that help you to test yourself independently. The website already has hundreds of users and their number is increasing every day. According to the author, he is working on improving the site and the in-depth training program is planned to be offered to the webpage users in the near future.



## SAN DIEGO STATE UNIVERSITY GEORGIA’S NEW CAMPUS BUILDING

In 2017, SDSU Georgia in corporation with Ilia State University, starts building a new campus on Cholokashvili avenue in Tbilisi. The 4 story academic building will be shared between SDSU-G and Ilia State University. The first 2 stories will be occupied by SDSU-Georgia, while the last 2 ones will be used by Ilia state University (ISU).

The Multi-functional, fully adapted, international standard, educational building will be located over 4 000m<sup>2</sup> space, equipped with the newest technologies; there SDSU-G will host additional classrooms, working spaces and high-level electrical and computer engineering for SDSU Georgia students. The project was presented to society on 19th of December of 2016, at ISU.







The presentation was attended by the deputy assistant secretary of the USA - Benjamin Ziff, dean of ISU, executive director of millennium challenge account, secretary of Georgia's education and science minister, SDSU-G current students and media " Teaching / getting education is one of the main priorities of the USA. In this building there will be created new laboratories and will function two new bachelor degrees of Constructive and Civil Engineering, all this will allow will increase the number of opportunities for students to get Education in fields such as engineering and formal sciences"-announced the deputy assistant secretary of the USA - Benjamin Ziff

## NEW BACHELOR DEGREES

Starting from 2017, San Diego State University Georgia will offer two new internationally accredited bachelor's degree programs – in construction engineering and civil engineering.

**Civil Engineering** program places emphasis upon the mastery of a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences. Woven through the pattern is a continuing study of the social sciences and humanities, because engineering graduates must expect to find their best expression as leaders, conscious of the social and economic implications of their decisions

**Construction Engineering** program at SDSU reflects a collaborative effort between the construction industry and the university to provide effective and vigorous workforce development. The program has a core educational curriculum emphasizing the theory and practice of construction engineering and management of construction enterprises.

### WE ASKED THE MINISTER OF EDUCATION AND SCIENCE OF GEORGIA, ALEKSANDRE JEJELAVA TO COMMENT ON THE NEWS:

"Our country experiences a shortage of qualified specialists in the engineering field, therefore we have to employ foreign engineers in different infrastructural projects; for that reason, I am very excited about the STEM degrees offered by San Diego State University in Georgia. There is no doubt that these programs will play a huge role in developing the economy and infrastructure of our country. Also, this is a great opportunity for the students to get employed by highly-paying companies."

By 2017-2018 academic year, students in Georgia will have a chance to apply to six different programs at San Diego State University Georgia campus: computer engineering, electric engineering, construction engineering, civil engineering, computer science and chemistry / biochemistry.

Join us and become leaders in your desired STEM field!



# ORIENTATION SEMINAR STEM INSTITUTE 2016

San Diego State University Georgia held a week long orientation seminar - STEM Institute for its new students. The new cohort consists of 130 students, 43% of them - girls. SDSU Georgia has accepted students with different backgrounds, from Tbilisi, regions of Georgia and also international students from 5 countries. The professors, who were invited from USA, held this seminar with Georgian colleagues.



At the end of the STEM Institute, the students presented their final projects to the Dean of the SDSU Georgia program Dr. Ken Walsh and the representatives of Millennium Challenge Account Georgia and Millennium Challenge Corporation.

# CONVOCATION 2016-17

In 2016-2017 academic year, 130 new students enrolled in SDSU Georgia. On September 27th, 2016, San Diego State University Georgia hosted a ceremonial event - Convocation at the National Parliamentary Library.

The event was attended by the Minister of Education and Science of Georgia Mr. Alexander Aleksandre Jejelava, H.E. Ian C. Kelly – US Ambassador to Georgia, Dr. Nancy Lee – Deputy Chief Executive Officer, MCC, Magda Magradze - CEO, MCA Georgia.

Especially for the event, a delegation of SDSU professors were visiting the ceremony. American professors gave motivational speeches and congratulated the freshmen on starting their academic pursuit.





## PUBLIC PRIVATE PARTNERSHIP FUND LAUNCHED BY SAN DIEGO STATE UNIVERSITY IN GEORGIA

In the modern world, the knowledge of science, technology, engineering, and math (STEM) are the keys to economic growth. Almost all of the fastest growing occupations depend on STEM fields. Currently Georgia has a critical shortage of STEM professionals who have been educated to existing international standards. To foster the STEM education and the economic growth of Georgia, the US Government and the Millennium Challenge Corporation and Millennium Challenge Account - Georgia, has invested \$30 million to help develop Georgia's first U.S. university degree program: San Diego State University Georgia. The university offers internationally accredited Bachelor of Science Degree programs. SDSU students will earn American degrees after graduation.

San Diego State University Georgia announced the launch of the Public-Private Partnership Fund (PPPF) in November 16, 2016. The major goal of the program is to generate financial resources to make the programs of SDSU-G affordable for talented and successful young people through scholarships. The aim of the fund is to use the financial resources gained from the public and private partnerships for the development of students' projects and studies. Apart from that, Georgian students will also have a chance to participate in special exchange study visits to the main campus in San Diego California. In return, SDSU will offer trainings to the staff of Public and Private Partnership Fund's partnering organizations and companies, who will be able to offer work placements and internships to the students of SDSU Georgia.

The Public Private Partnership Fund launch ended with the announcing of students who received scholarships from the public and private companies.



### ELENE ASLANIKASHVILI

Got the scholarship of TBC bank. Elene is a freshman who studies Biochemistry. She believes that science can solve the problems that world faces today. Her dream is to contribute to the world with her knowledge and experience and solve the problems of hunger and inequality.



### THOMAS MIKAVA

Got the scholarship of TBC bank. Elene is a freshman who studies Biochemistry. She believes that science can solve the problems that world faces today. Her dream is to contribute to the world with her knowledge and experience and solve the problems of hunger and inequality.



### DAVID BAKURIDZE

Got the scholarship of TBC bank. Elene is a freshman who studies Biochemistry. She believes that science can solve the problems that world faces today. Her dream is to contribute to the world with her knowledge and experience and solve the problems of hunger and inequality.



### MAKA BUCHUNTELI

Got the scholarship of The Walsh family. She studies Computer Engineering and she is interested in Artificial Intelligence and psychology. She believes that practice makes everything perfect.

## THE GUEST OF SDSU GEORGIA IS NASA CHIEF ENGINEER TRICIA MACK



The U.S. Embassy Tbilisi, together with San Diego State University – Georgia brought NASA Engineer Tricia Mack to Georgia, TBILISI, September 16, 2016. She met with SDSU students, pupils who are interested in math and natural sciences and learnt them how she launched her career. Today, in our rubric- “interview” we will present this woman.

At first, this interview was published in magazine -National Geographic Georgia in December issue.

### **Today women are successful in various fields; are they active members of space research?**

Woman is not foreigner for NASA, however, few women work there. In early years, when I had started my job, if I told something aloud, surprised members of control center looked at me, caused by woman’s voice, but gradually they were accustomed to it.

### **When and why did you interested in space?**

Growing up in Rochester Hills, Michigan, both my parents were teachers so education was important in our family. Like my coevals, I have never wanted to be an actor, singer or model...I was interested in engineering. In 8th grade we started to learn Earth Science. The first topic was about oceans. I had been inspired by this topic when I came back home and announced my parents that I would be an oceanographer. In a week, teacher gave us new topic-volcanoes. Automatically I forgot oceans and decided to be a volcanologist. This decision also was changed in a week. The next topic was space. It captivated me so that this impression is not depreciated me till now.

### **Was it difficult to achieve your goals?**

It would require all my labor, learn and extra efforts. After graduating from the school, I attended the University of Michigan and started to study Aerospace Engineering. Thereby, I connected my two interests with each other: space and engineering. At that time, NASA only hired permanent employees from their co-op program, so I knew that I had to secure a co-op position to fulfill my dream. I applied through my university...and I wasn’t selected. This was the first—though not the

last—time in my career where I needed a backup plan. Sure, my school didn’t pick me to co-op, but that didn’t stop me. I contacted NASA and convinced the operator to give me the phone number of worker, who was hiring probationers. When I contacted him, I said openly: In spite of the fact that I did not win the competition, I would work there. He told me: “Okay, bring us your documentations and we will see what can be done”. After three weeks, they called me and said that I had been hired. I still remember how I was dressed in, which phone I was standing with and what kind of weather it was.

### **Did your expectation about NASA coincide with reality?**

Firstly, I wanted to be an astronaut, but it was proved that I had some problems of vision and solar radiation first of all can cause vision damage. However, I am so happy today, because I am working in Mission Control Center and I am part of them. I accepted a permanent offer and spent the next 14 years in the Extravehicular Activity (EVA) or “spacewalk” Group where I worked my way up to an instructor and flight controller then finally to the Systems Group Lead.

### **What is your duty at NASA now?**

Today I am NASA liaison to Orbital AKT, which launches NASA resupply mission to space station.

### **What was the biggest challenge you faced in NASA?**

Cosmic station periodically is provided with cargo, which is transported by special electronic installation. Very expensive and complex robot, constructed by Canadian scientist, which has many other functions except taking cargo, is controlled from the station. One day this “hand” was damaged, and simultaneously, every research was interrupted. I have been instructed to repair the robot with my team for two weeks. Since that time we were not going out of the work place. Everyone was poring over this process and after directing the last instruction, the robot put in motion. Everyone kept silent. I untied earmuff and said to myself: “Thank you, robo”. Finally, everybody was relieved and applauded this success.



## SDSU-G AZTEC STUDENT CO-OP IS NOW AVAILABLE IN GEORGIA!

The Second Annual SDSU-Georgia Holiday Cookie Party was held in December of 2016. At the party, the new SDSU-G Aztec Student Co-op held their official presentation and offered special souvenirs to the guests.

"This is the first University shop in Georgia, where customers can buy SDSU souvenirs such as: shirts, cups, hats, gifts and other things with SDSU logo on them. This shop offers innovations made by SDSU-G students"- says Aztec Co-op team's assistant-manager Hanieh Moein. Hanieh is a freshman and studies Computer Engineering at San Diego State University Georgia. SDSU-G hosted Cookie Party for the second time. At the event students, teachers, and partners of San Diego State University gather before Christmas and have fun. They are hosted with cookies that are made by students.

At the second Annual SDSU-Georgia Cookie Party sophomores who were recognized on Dean's list and freshman as Star Performers were revealed. On this day the finalists and winners of SDSU-G photo competition: "A Picture is Worth a Thousand Words" were given prizes.

SDSU-G members of the art club team were playing on musical instruments at second Annual Cookie Party.



## VISIT AT TSEROVANI

On January 26th, MCC's director Jenner Edelman and SDSU-G students visited an IDP settlement in Werovani, Gori, to talk with students potentially interested in STEM disciplines. Inside the Peace Corps' traveling book mobile, three SDSU G students spoke about their experiences at SDSU-Georgia, why they are pursuing STEM, and why the IDP students should as well!

After the talk, the SDSU and IDP students worked together to make various circuits from kits donated to the book mobile. For many, it was their first experience with circuits and electrical engineering in general and because of that they found the activity so entertaining and worked enthusiastically.

The meeting was intended to make the school students interested in STEM fields.



„I believe there are students in this room who will change the world on a global scape“

—  
said the Minister of Education and Science of Georgia, Aleksandre Jejelava

## STEM ACADEMY IN BATUMI, KUTAISI, AND TBILISI

San Diego State University Georgia hosted a free seminar, STEM Academy, for 12th graders interested in STEM fields. This year, in addition to Tbilisi, STEM Academy was held in Batumi and Kutaisi too. The purpose of STEM Academy is to inform high school graduates about the achievements made in Chemistry, Biology, Physics, Mathematics, and Engineering. Students also get useful information about the education system in the USA, the importance of international accreditation, and many other topics in an interactive manner.

11TH and 12th graders are free to attend STEM Academy and get a chance to receive information about the latest achievements in STEM fields from internationally acclaimed Professors. STEM Academy is visited by both the professors from San Diego and Georgian partner Universities, who have been trained on the main campus of SDSU.

With the help of Center for International Education, school kids from Batumi and Kutaisi had a chance to attend the STEM academies, too. The seminars were attended by more than 100 11th and 12th graders interested in STEM subjects.

Registration for STEM Academy is available on San Diego State University Georgia official website at: [GEORGIA.SDSU.EDU](http://GEORGIA.SDSU.EDU)

## AMERICAN (US CITIZEN) STUDENTS FROM SAN DIEGO STATE UNIVERSITY REQUESTED AN ENDURANCE OF THEIR EXCHANGE PROGRAM

Its been almost three years that San Diego State University exists in Georgia. Approximately 250 Georgian and international students study here on STEM degrees. There are ten American exchange students among them, who arrived in Tbilisi, earlier in September. Their goal was to spend a semester on Georgian campus.

This is the first occurring occasion, when American students are given a chance to visit another campus of their own university, through participating in exchange program. The learning system, syllabuses and courses on Georgian campus are identical to those in California.

The students from the US who arrived here in September addressed the University administration with a letter. They asked for the continuation of their exchange program, so that they have ability to spend one more semester on Georgian campus.

We got interested in reasons which made American students decide to stay and asked this question to Samantha Crawford, Taylor Inouye and Gonzalo Tucker/

“We are lucky to get a chance to live in Georgia. I am delighted that I will spend a second semester here as well. Most of



students in America chose UK, Australia, Spain and other leading countries for studying and getting knowledge. I chose the country, which has a contrasting culture. And I am really satisfied with my choice.” – states Taylor Inouye.

“I wished to study in a country with different culture and traditions, and I managed this successfully. I am really happy that I got a chance to study in Georgia. The learning process has been productive. Openhearted and direct relationships with the professors, which we possess, guarantee the high level of education” – says Gonzalo Tucker.

“The atmosphere is really pleasant. Things that I got to love, except the quality of the education, are Tbilisi and its lifestyle. It is very contrasting and different from ours.” – explains Samantha Crawford.

Students plan to come back to Georgia even after graduating.

“Some of us wish to work for international organizations; that’s why we decided to study abroad, in the less traditional and popular place. We wanted to adapt to distinct culture and environment. Moreover, we wanted to learn to live independently on our own. We believe that spending more time in Georgia will help us in building (creating) both: personal and professional relations. Also it will give hand in

becoming more autonomous and it will be helpful achieving success in foreign, unknown environment. We even consider starting to work here in the future.” – explains Taylor Inouye.

Georgian students have a chance to participate in exchange program as well. They get unique chance to spend a semester or a year at San Diego State University California campus. Seven students from Georgia are just spending their semester in US. They will return to Georgia in the end of December.



**Nana Mghebrishvili**  
AMBEBI.ge

## SCIENTIST’S BLOG

Tamar Kerdikoshvili is an 18 year-old coming biochemist. She is a freshmen, studying on Biochemistry program, at the SDSU-Georgia.

A short time ago Tamar created a “Scientist’s Blog”, where , she daily places news from STEM fields and also suggests the readers interesting discussions about different still unrevealed, absorbing topics in science.

Tamar’s web-page activated not long ago and it already functions successfully.

**-Tamar, why did you decide to enter the biochemistry field and what can you tell us about the “Scientist’s Blog”**

-why biochemistry?-I’ve thought about that many times before and here’s my answer: biochemistry is a fundamental science, without which life would be impossible even to imagine. Everything that we see or feel is chemistry.

Regarding the blog: I always wanted to have a blog, but I used to think that I did not have the enough knowledge and experience for that...it’s a big responsibility to publically declare your opinion, but finally, I still created the “Scientist’s Blog”. There, besides my points of view about different issues and questions in science, I share daily STEM news and provide all the information in both, Georgian and English language.



I believe, that sharing knowledge and ideas by the way of blogging is one of the best modern ways to gain education.



# THE FIRST COMIC BOOK IN GEORGIA BY STUDENTS "FATAL ERROR"

The comic book "Fatal Error" is an outcome of collaboration between U.S embassy in Georgia and San Diego State University-Georgia. The author of the idea is the cultural attaché of the U.S embassy in Georgia - Damian Wampler. It's known that comic books are an integral part of American culture, while in Georgia, it is not such popular, even more, the "Fatal Error" is one of the first comic books in Georgia. With this project, Mr. Wampler wanted to encourage the tradition of writing comic books in Georgia.

In order to execute the willing, Mr. Wampler suggested partnership to the "Empower Women" club at San Diego State University-Georgia and the members of the club did not hesitate to take the challenge with big pleasure.

"Fatal Error" tells us about the social problems and the non-forcible ways, they might've been solved in. working on the book started in March of 2016, under the guidance of members of the club: Mariam Gagua, Bela Beradze and Kesi Katsitadze. While working on the project a competition was announced, and 2 painters - Nino tsxadaia and Gaga Tumanishvili, and 2 writers - Mariam Agdgomelashvi and Tornike Gvtisiashvili were chosen. Later, the team conducted a survey according to which the biggest social problems in Georgia had been identified, these are: family violence, Russia-Georgia political relation and computer games.

Based on the information, the work on the comic book began. The comic book team attended the trainings conducted by American and Georgian professionals. Among whom there were: the comic book "Marvel's" painter - David Mack , "DC" comics writer Van Jensen and a Georgian comic book "Amiran's" author- Nikoloz Khomasuridze. The process lasted about 4 months and finally, the book presentation held at a Book Gallery - Biblusi, on 23th of September, 2016.

"Fatal Error" tells us a story of two school students Nika and Qeti, who run away from unwanted reality and try to hide from it into the virtual world of computer games; there they meet numerous adventures.

The comic books were handed to schools in Georgia's regions and the students got the opportunity to familiarize with a new literary work.





On December 18, 2017 Tech Park hosted a marathon type event – Creathon. More than 100 participants of the project worked on designing concepts about different creative ideas and competed with each other. There were three directions in which the participants were encouraged to work: Logo design, website concept and short video idea.

The Creathon was attended by the Minister of Education and Science Alexander Jejelava who declared his support towards such events.

“We came here at 8:30 in the morning and will leave at about 2 a.m. This was fun! We gained so much experience and met so many new interesting people,” say Creathon participants from SDSU Georgia.



# CREATHON

2016



## ENGLISH LANGUAGE CLUB

During the just concluded semester, the English Language Development Center(ELDC) opened its doors to the students of SDSU Georgia. It is founded by our very own English professor, Mr. Hassan Autman and co-founded by Amanda Black and Nino Jojua.

The English Language Development Center, located at Tbilisi State University library building, is a place where students can go and get help from their peers and teachers on various homework assignments. The ELDC encourages students that don't have English as their first language to master both, writing and speaking skills in English. The ELDC also provides jobs for some of the students that are better in English so that they would be able to assist the teachers in helping their peers. So far 5 SDSU-Georgia students work there already.



*"I feel excited because I'm part of the staff here at ELDC. Here I have compensation and working hours in agreement with my studying schedule. Additionally, I like assisting my friends in preparing their homework so much"* - states Anano Turkiashvili, a freshman at SDSU-Georgia, studying on computer science program, one of the members of ELDC staff.

## INTERNATIONAL DAY OF THE GIRL CHILD

Since 2012, October 11 is considered as "International Day of Girl Child" by the United Nations Organization. With joint initiative of SDSU Georgia and Millennium Challenge Account (MCA), SDSU-Georgia's "Empower Women" club members and a representative from the MCA visited Komarov #199 physics and mathematics public school in Tbilisi to celebrate the day and encourage and support girl children worldwide.

The "Empower women" club members introduced SDSU Georgia to the school girls of the physics and mathematics school and shared with them the experience of starting and continuing studying at SDSU Georgia. In addition, the students also discussed the priorities that American University offers to students in Georgia.

As a result of the meeting, the 11th October turned out to be one more funny, nice and productive day in the history of both: the Komarov #199 physics and mathematics public school and San Diego State University Georgia.





# Science and Innovation Festival 2016



On September 17-25, "Science and Innovation Festival 2016" was held in Tbilisi at the exhibition center "Expo Georgia". The festival was organized by the Ministry of Science and Education of Georgia.

That was the first time when this type of event took place in Georgia. Within a week, the event was loaded with exhibitions, public lectures, conferences, trainings, workshops, open door events, the latest scientific publications, outdoor events and project presentations.

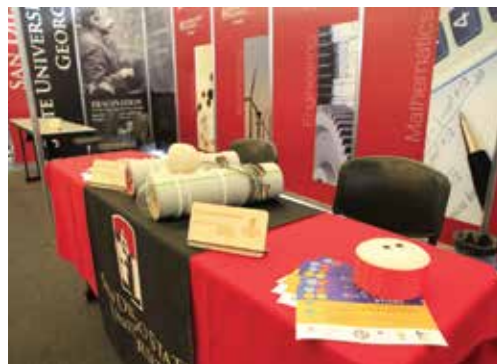
At the science festival SDSU-Georgia and its students were actively involved. On the innovations exhibition SDSU-Georgia's students presented their inventions from computer/electrical engineering and computer science fields; on the other hand, Biochemistry sophomores of SDSU-Georgia attracted the visitors' attention by demonstrating colorful and interesting chemical reactions at the Funny Science Hall. The latter was especially popular among kids. The little ones were cautiously watching to the engaging and colorful show of chemistry.



Furthermore, within the festival, for the first time, there was held a science photo competition, at which SDSU-Georgia student, Nika Alavidze took the first place, with picture: is there emptiness?!"

From now on, Science and Innovation Festival, as well as science photo competition will occur each year.

"It is a great honor for us to host such an important event and take part in ground breaking of one of the most important traditions for Georgia and Caucasus region"-claims the team of the exhibition center "Expo Georgia"





## PEPPER IS ALREADY IN GEORGIA

Born in 2014, Japanese robot called Pepper clearly represents the important achievements of the artificial intelligence industry. The robot is very ambitious. Pepper wants to travel around the world. Georgians were looking forward to see the robot and 8 months ago humanoid visited the country. Since the day of meeting with Pepper, hosts have been trying to make a plan, which will be useful for the robot to be valuable member of the society. Professional trainers and programmers are still working hard to achieve this goal. Lizi Mamisahvili, Lela Tvaliashvili, Giorgi Aphtsiauri and Maka Buchunteli - students of San Diego State University-Georgia, are among the people, who want to do a bit for improving the skills of the humanoid. What will be the new abilities of him? Everything depends on the "new parents" of the robot. Pepper is the first humanoid robot capable of recognizing the principal human emotions, such as joy, sadness, anger or surprise. How can he do all these special actions? 4 directional microphones located on Pepper's head, one 3D camera and two HD cameras enable him to identify movements and recognize the emotions of the interlocutors. By perceiving and analyzing your emotions and learning to get to know you, Pepper is able to adapt his attitude to suit your own as closely as possible. Thanks to his emotional intelligence, robot is a joyful host for every guest, who comes in the GeoLab(innovative laboratory, where Pepper lives).

Pepper is not only the host for the guests of GeoLab, but he often visits the important events, such as "Devfest Tbilisi", Christmas party and etc.

The main features of Pepper are his humane, autonomous, interactive and progressive characteristics. The group of new trainers, professional programmers, students of SDSU-Georgia and other active participants will help Pepper to become a valuable member of the society. 6-month activities will be captured on the documentary film. During the process of improving the robot, Pepper will encourage every participant of the project with his favorite phrase: "Don't worry, be happy!".



Information about Pepper is retrieved from <https://www.ald.softbankrobotics.com>





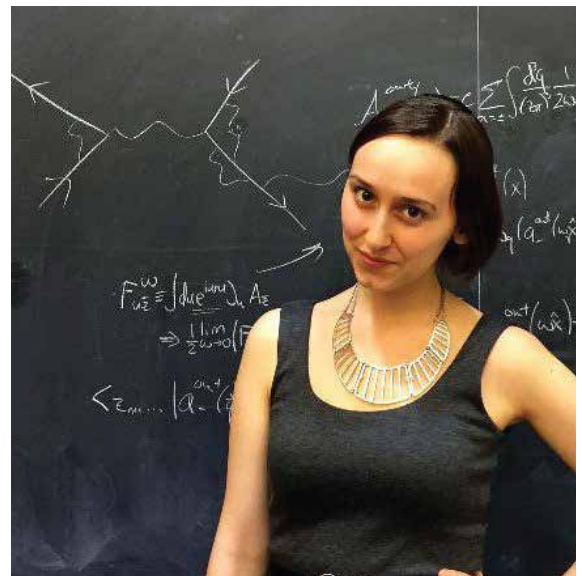
## A 22 YEAR-OLD PHYSICS GENIUS WHO'S CALLED THE NEXT ALBERT EINSTEIN

Sabrina Gonzalez Pasterski was only 14 years old when she stepped foot into MIT's campus offices seeking approval one morning for the single-engine plane she built.

Fast forward eight years and the 22-year-old is now an MIT graduate and Harvard Ph.D. candidate interested in answering some of the most complex questions in physics.

The first-generation Cuban-American woman has already received job offers from Jeff Bezos, the founder of Amazon.com, and aerospace developer and manufacturer Blue Origin. NASA has also shown interest in the young physicist. Pasterski's study seeks to explore black holes and spacetime and she is particularly concentrated on explaining gravity through the context of quantum mechanics.

She Graduated from MIT with a grade point average of 5.00, the school's highest possible score. Her adviser, Harvard professor Andrew Strominger, who is publishing a paper with famed physicist Stephen Hawking, has high words of praise for Pasterski.



Sabrina has also been granted thousands of dollars from various National or international Science Foundation around the world to support her studies and work.

And the upcoming project by Sabrina, on which she is working right now, may change the world...

"Physics itself is exciting enough. It's not like a 9-to-5 thing. When you're tired you sleep, and when you're not, you do physics"

-Sabrina Gonzales Pasterski.

## THE FIRST WOMAN WHO WON THE MILLENNIUM TECHNOLOGY PRIZE

The Millennium Technology Prize is one of the world's most prestigious science and technology prizes. In 2016, for the first time in the history of the Millennium Technology Prize, the person who got the award was a woman, biochemical engineer Francis Arnold, who launched the field of "directed evolution."

The Directed Evolution replaces less efficient and harmful technologies and in many areas of industry it is no longer necessary to rely on non-renewable raw materials. Thanks to Francis Arnold, today it is possible to create proteins with useful properties, that would not develop without the human intervention. Arnold's method produces random mutations in DNA, that produces proteins with new properties, from which the researcher can choose the useful ones.



"Directed evolutions allow us to circumvent our inability to explain how mutations affect protein behavior, much less to predict beneficial ones. The most beautiful, complex, and functional objects on the planet have been made by evolution. We can now use evolutions to make things that no human knows how to design. Evolution is the most powerful engineering method in the world, and we should make use of it to find new biological solutions to problems," says Francis Arnold.

Apart from a huge advance in her career, the award gave Francis Arnold the opportunity to highlight the gender gap in STEM (Science, Technology, Engineering, Mathematics) careers and to become the role model for women who wish to pursue their careers in STEM fields. Arnold believes that women should be encouraged to use their talents in mathematics and science, rather than be discouraged by the clichés. "I hope that my getting this prize will highlight the fact that yes, women can do this, they can do it well, and that they can make a contribution to the world and be recognized for it," says Francis Arnold.

## MIND OVER MATTER: ROBOTIC ARM CAN BE CONTROLLED WITH MIND POWER

*With this new invention, the mind truly masters the body!*



A team with the University of Minnesota created a robotic arm that users control with their minds alone. This research could help millions paralyzed or suffering neurodegenerative diseases regain a sense of autonomy.

The system uses a non-invasive technique called electroencephalography (EEG) based brain-computer interface. Effectively, it takes weak electrical activity and turns those pulses into action. An EEG cap containing 64 electrodes converts those electrical impulses and thoughts into action.

"This is the first time in the world that people can operate a robotic arm to reach and grasp objects in a complex 3D environment using only their thoughts without a brain implant," said Bin He, a biomedical engineering professor and lead researcher on the study. "Just by imagining moving their arms, they were able to move the robotic arm."