MANDATE PER EO 128

- Undertake science education and training;
- Administer scholarships, awards and grants;
- Undertake science and technology manpower development; and
- Formulate plans and establish programs and projects for the promotion and development of science and technology education and training in coordination with DepEd, CHED and other institutions of learning.

VISION

DOST-SEI shall develop the country's human resource capacity in science and technology required to produce demand-driven outputs that meet global standards.

MISSION

DOST-SEI's mission is to accelerate the development of S&T human resources of the country by administering undergraduate and graduate scholarships and advanced specialized trainings; promote S&T culture and develop innovative science education programs.

SCIENCE EDUCATION INSTITUTE
DEPARTMENT OF SCIENCE
AND TECHNOLOGY

1F/2F SCIENCE HERITAGE BUILDING
DOST COMPOUND
GENERAL SANTOS AVE., BICUTAN
TAGUIG CITY

www.sei.dost.gov.ph

BUILDING SCIENCE AND TECHNOLOGY CAPACITY FOR TRANSFORMATIVE GROWTH

SCIENCE EDUCATION INSTITUTE
DEPARTMENT OF SCIENCE
AND TECHNOLOGY

ANNUAL REPORT 2013

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INTRODUCTION

DOST-SEI has been at the forefront of building the country's human resources in science and technology. Through the years, the growing number of successful applicants going through the scholarship program and a good percentage graduating with honors, show a positive indication that we are moving in the right direction.

The thrust of DOST-SEI is focused in producing a highly educated and competent pool of professionals in the diverse field of science and engineering, to continue with the task of bringing about needed scientific and technological innovations, particularly in the areas of health, environment, alternative sources of energy, agriculture, biotechnology, information and communication technology and disaster prevention.

In line with its mandate, DOST-SEI is continually defining courses of action to enhance our capability, and to reach a sustained high level of expertise in science and technology.

New approaches in our educational system, together with extensive research and development efforts, will pave the way to a realization of our great potentials. DOST-SEI is building a strong foundation for higher knowledge and skills, that would translate to the development of new products and services, leading to economic prosperity.

The challenges facing DOST-SEI are indeed many and diverse. The demands of achieving global competitiveness require adherence to world standards in basic and higher education. Hence, innovative approaches in science education are imperative in ensuring quality feeders to the massive S&T Human Resource Development Program. Building the country's capability in science and technology is key to the country's transformative growth.

MESSAGE FROM THE **SECRETARY**

The Department of Science and Technology-Science Education Institute (DOST-SEI) has marked another year of notable accomplishments, living up to its mandate as the lead agency tasked to administer scholarship programs in science and technology.

Every year, the increasing number of qualifiers to our scholarship grants and a treasure trove of medals won in international competitions, as well as a host of scholars who graduate with honors are indeed truly exceptional, giving all the reasons for great optimism.

DOST-SEI has laid down the framework and continues to provide for relevant and effective scholarship programs. It is the consolidation of the Institute's firm commitment of unlocking the vast potentials of our youth, enhancing their knowledge and skills that can be harnessed to lead the transformative growth of the nation's economy.

The Department of Science and Technology (DOST) has taken appropriate steps towards democratization of its mandate by improving access to the undergraduate S&T scholarship programs all over the country by the year 2016, as provided for under R.A. 7687.

The year in review enables us to see our capacity to produce a great number of highly educated professionals devoting themselves to scientific and technological development and helping the country to meet national and global challenges.

In our rapidly changing world, we need to go forward headstrong, with a new level of thinking through educational innovations. We cannot satisfy ourselves by just acquiring knowledge of what is already there. Our purpose must be to go beyond it.

It has been said that life is not about finding ourselves, it is about creating ourselves – about creating our capability to change our society in the process of building a strong nation. The DOST through SEI, shall continue to provide the opportunity for young Filipinos to create their own future that anchors on a robust S&T infrastructure built by scientist, engineers, innovators and educators. Such is the essence of transformative growth- an environment that empowers individuals to adopt and adapt to change.

MARIO G. MONTEJO
Secretary
Department of Science and Technology

MESSAGE FROM THE **DIRECTOR**

In 2013, the Department of Science and Technology-Science Education Institute (DOST-SEI) has defined a deeper meaning to our mandate, with the development of scholarship programs that are responsive in building a strong foundation for our youth.

During the year, various training programs and seminar workshops were conducted for teachers and students in the primary and secondary levels.

These include a nationwide Enrichment Program for qualified fourth year students to prepare them for the scholarship examination; seminar workshops in crisis management for teachers in areas identified as prone to disasters; and seminars for teachers to enhance their capability in drawing up research proposals for more effective teaching.

Programs to enhance the interests of students to pursue Science, Technology, Engineering, and Mathematics (STEM) careers were also implemented nationwide.

The diverse knowledge and technical skills that the pupils and students have gained from these programs as well as their increased desire to pursue STEM courses would give them a solid foundation and a greater opportunity to qualify for the DOST-SEI S&T scholarships. This is considered a major factor, paving the way to an increasing number of successful applicants every year.

We are truly grateful to our leadership, to our teachers, to the parents of our scholars, and to all cooperating institutions for their support and commitment in upholding the ideals that DOST-SEI stands for. And, of course, to our scholars for their perseverance and sincere devotion to the pursuit of excellence.

As good citizens, we are all a part of this mandate – in building a better world for ourselves, for our nation, and for all of humanity.

FILMA G. BRAWNER
Director
DOST-SEI

Dir. Filma G. Brawner retired in September 2013, leaving behind a solid imprint of empowering leadership within the heart and soul of a grateful institution.

MESSAGE FROM THE
OIC, OFFICE OF THE DIRECTOR, DOST-SEI

The country is consistently challenged with a multitude of changes and crises arising from natural disasters, political and social issues, economic disparities, technological development and regional as well as global transformation. It has been apparent that change is inevitable and that no government can rest on its laurels.

In this period of rapidly changing global environment, the government has taken a stronghold on its economic policies that enabled substantial growth in the last few years. But the challenges continue to grow even faster than the initiatives to improve all aspects of the economy. This is why we have to rely on innovative strategies that would hasten our ability to cope with such challenges.

Our strength lies in our human capital, steadfastly adapting to technological innovations and contributing immensely to the production and service sectors of the economy. Beefing up our capability is dependent on how much we invest in the development of our human capital, specifically in the areas of cutting edge science and technology fields which are seen as critical and crucial to growth.

This year, the Department of Science and Technology-Science Education Institute (DOST-SEI) continues to massively increase the number and improve the capacities of S&T professionals in the country. The year in review also attests to the goal of increasing access to the scholarship programs and bringing students from far flung municipalities to explore these opportunities.

The mandate of DOST-SEI in building human resources in science and technology has not been confined to just granting scholarships. The process of building begins way before and goes on after the scholarship is granted.

The seed of scientific and technological orientation must be planted in the early stages of education – of childhood. Like a native language, it must be a part of growing up.

DOST-SEI's program of activities for the elementary and high school levels all over the country is proving to be eliciting the desired result. For the students, discovering the wonders of science during these activities has been full of fun, thrill and excitement. Such excitement translates to overwhelming interests that, when sustained, can lead to option to pursue S&T careers in the future and perhaps through S&T scholarships.

The benefit of scholarship comes with significant organizational support, providing our scholars with programs and features in the various aspects of S&T development that are relevant and essential in their pursuit of academic excellence.

On the strength of our mandate, DOST-SEI is leading the country towards a new direction – to uplift the lives of our people and bring greater opportunity for science and technology to flourish even more, in parallel with our changing world. Indeed, 2013 for DOST-SEI is one big step towards transformative growth.

ELIZABETH A. FONTANILLA
Director, DOST-ALS and
OIC, Office of the Director, DOST-SEI

Dir. Elizabeth A. Fontanilla took over the reins of SEI as OIC, Office of the Director, DOST-SEI, in September 2013.

HIGHLIGHTS

DEVELOPING S&T HUMAN RESOURCES

The number of examinees who took the **S&T Undergraduate Examination in 2013** reached 25,696 with 3,597 making the grade for qualification, showing a sustained increase compared to that for the year 2012 involving 25,672 examinees with 3,359 qualifiers.

Of the 3,597 new scholars, 3,089 belong to underprivileged families qualified under **RA 7687**, while 508 qualified under the **Merit Scholarship program**.

In all, DOST-SEI sponsored 10,031 scholars from 17 regions last year, with 1,766 completing their courses and out of whom 21% or 371 received academic honors.

In the **Graduate Scholarship Program**, SEI supported a total of 48 MS and 100 PhD scholars producing four MS and nine PhD graduates in Science Education. However, 44 and 91 scholars are still continuing their masters and doctoral degrees, respectively.

In the **Accelerated Science and Technology Human Resource Development Program (ASTHRDP)**, SEI supported 1,131 MS and 210 PhD scholars, producing 222 MS and 31 PhD graduates. There are 909 and 179 on-going scholars still pursuing their masters and doctoral degrees, respectively.

In the **Engineering Research and Development for Technology (ERDT)**, SEI supported 565 MS and 115 PhD scholars, producing 89 MS and 10 PhD graduates. There are 476 and 105 scholars who are still continuing their masters and doctoral degrees, respectively.

STRENGTHENING CAPABILITIES IN SCIENCE AND TECHNOLOGY

Review sessions for the **2013 Enrichment Program** were conducted in six regions to prepare prospective candidates in the top 5% of 4th year students to the undergraduate S&T scholarship examination, particularly in municipalities with no previous qualifiers.

Faculty members from 10 COD (Center of Development) TEI (Teacher Education Institute)) underwent training entitled **Accelerating Research initiative for Science education (ARISE)** to upgrade the capacity of science and mathematics teachers in packaging research proposals. The top three research proposals were presented during the "National Conference in Science and Mathematics Education" held at the UP NISMED in October 2013.

A **Framework Development Workshop** was held in August 2013 devoted to **"Laying the Groundwork of the Academy,"** which aims to provide innovative trainings in science education, strengthen

R&D expertise of teachers through research mentorship, provide consultancy and technical support services to teachers and encourage partnerships and collaborative activities in science education.

From July to November 2013, a total of 565 Grade 1 Mathematics teachers, coming from 17 regions, were trained for **Project iTEACH Math (Improving Technology-Enhanced Activities for Creative Honing of Mathematics Skills).**

To provide a favorable learning environment in Muslim dominated schools that will encourage and help students to understand, appreciate and value the importance of science and mathematics, Project **MOVE ON (Mindanao opportunities for Vitalized Education and Onward Nurturing)** was launched as an extension to the recently completed three-year **Project MOVE UPS (Mindanao Opportunities for Vitalized Education and Upgrading of Science).**

To upgrade and improve science and mathematics education in the country, DOST-SEI continuously implemented the **Information and Communication Technology (ICT)-**supported learning innovations. From July to October 2013, SEI conducted the **User Acceptance Testing (UAT)** of the Interactive Science and Mathematics' Courseware for secondary-level schools. A total of 250 second year high school students coming from ten public schools participated in the UAT.

BUILDING SCIENCE AND TECHNOLOGY CULTURE

The **Science Explorer** is the country's first and only mobile learning science facility that seeks to introduce science concepts in a fun and interactive manner. The purpose is to bring to under-equipped schools a mobile interactive science laboratory that would enable students to conduct hands-on experiments and discover the wonderful world of science, serving 67 schools and benefiting 3,081 students.

More than a hundred students and teachers from 39 high schools attended the **Robotics Training Program** under the guidance of engineers in the industry, preparing the students for the Robotics contest. The final competition was held in November. More than 400 students, teachers participated in the event.

The **Geo-Marine Science Camp was** held from April 27 to May 5, 2013 with the theme: "Rock the Ridge, Reach the Reef." A total of 60 students and teachers were exposed to actual field practice in Geology and Marine Science led by scientists and researchers from the University of the Philippines Marine Science Institute (MSI) and National Institute of Geological Sciences (NIGS).

The sterling performance of students who made it on top of the rankings in the 2013 Philippine **Mathematical Olympiad (PMO)** goes with the distinction of representing the country in the **International Mathematical Olympiad (IMO)**, held in Santa Maria, Columbia, where the Philippines bagged three bronze medals and two honorable mentions.

The **Australian Mathematics Competition** was conducted on August 2, 2013 participated in by more than 400,000 students from 40 countries, with the Philippines hauling 5 Gold Medals, 5 Prize Awards, and 62 Certificates of High Distinction.

The number of international medalists in Science and Math competitions reached 447 and were awarded with YES medals by the DOST Secretary for NCR Awardees, and by the respective DOST Regional Directors for the regional awardees.

DEVELOPING HUMAN RESOURCES IN SCIENCE & TECHNOLOGY

The Department of Science and Technology-Science Education Institute's scholarship programs have gone a long way in providing education in science and technology, especially for the youth belonging to less-privileged families all over the country. A considerable number of DOST-SEI scholar-graduates have joined the ranks of S&T professionals, finding gainful employment and livelihood and becoming productive citizens. Many have pursued advanced studies through DOST-SEI's Master's and PhD scholarship grants, attaining higher learning and skills that have translated to new scientific discoveries and technological innovations. The Institute's integrated framework for the development of human resources in science and technology covers the whole country, spanning across all the regions and reaching the farthest municipalities, paving the way to inclusive, transformative growth.

UNDERGRADUATE SCIENCE AND TECHNOLOGY SCHOLARSHIP PROGRAMS

In 2013, the DOST-SEI supported a total of 10,031 scholars distributed over the seventeen (17) geographical regions of the country. Of this figure, 1,766 or 17.61% graduated in March and October 2013 while 8,265 or 82.39% are continuing. Region IV-A (CALABARZON) had the highest number of scholars at 1,624 or 16.19% of the total number. This was followed by the National Capital Region (NCR) and Region VII (Central Visayas Region) with 1,433 and 1,068 scholars, respectively. Meanwhile, the Autonomous Region of Muslim Mindanao (ARMM) had the lowest number of scholars at 85 or about 1% of the total number. Region IX (Western Mindanao) and Region XII (Central Mindanao Region) had 208 (2.07%) and 229 (2.28%) scholars, respectively.

Table 1. Regional Distribution of DOST-SEI Undergraduate Scholars in 2013

Home Region	Status		Total
	Continuing	Graduated	
CAR	245	50	295
I	348	52	400
II	268	39	307
III	782	141	923
IV-A	1,310	314	1,624
IV-B	232	44	276
V	721	164	88
VI	669	130	799
VII	869	199	1,068
VIII	419	104	523
IX	169	39	208
X	365	85	450
XI	225	48	273
XII	194	35	229
ARMM	75	10	85
CARAGA	213	40	253
NCR	1,161	272	1,433
TOTAL	8,265	1,766	10,031

Participants to the SEI-Regional S&T Scholarship Staff Reorientation Meeting.

2013 DOST-SEI-REGIONAL S&T SCHOLARSHIP STAFF REORIENTATION MEETING

To ensure that all scholarship staff from all over the country know and have common understanding and interpretation of the scholarship policies and standard operating procedures for a more effective and efficient implementation of the S&T scholarship programs, the Regional S&T Technical and Scholarship Project Staff convened for a meeting on 15-16 April 2013 at The Legend Palawan, Puerto Princesa, Palawan City.

Dr. Filma G. Brawner, DOST-SEI Director, emphasized that the meeting is necessary to promote changes for the better implementation of the various S&T Scholarship Programs of the Institute. She urged every Scholarship Staff to get to know the scholars and make them feel that they are part of one big and happy S&T Family. At any point of time, the staff should be able to determine where the scholar-graduates are and what they are currently doing as a professional

Dr. Filma G. Brawner delivering her opening remarks.

Highlighted in the meeting was the introduction of the web-based scholars' information system wherein the Scholarship Staff could access information pertinent to each scholar. Open forums were conducted after discussion of every topic. Participants raised their questions and were given corresponding answers by the discussants. Issues and concerns were clarified.

SELECTION OF 2013 QUALIFIERS OF THE DOST-SEI UNDERGRADUATE S&T SCHOLARSHIPS

A total of 25,696 fourth-year high school students took the 2013 DOST-SEI Undergraduate S&T Scholarship Examination conducted on 18 November 2012 nationwide. Fourteen percent (14%) or 3,597 of the total examinees have qualified for the DOST-SEI Undergraduate S&T Scholarships. This is 7.1% higher than the 3,359 qualifiers awarded in 2012. Of the total number of qualifiers, 3,089 belong to economically disadvantaged families and qualified under the RA 7687 Scholarship Program while 508 qualified under the DOST-SEI Merit Scholarship Program. Moreover, the number of municipalities with qualifiers also inched-up by 13.5%; from 975 last year to 1,107 this year.

The National Technical and Selection Committee (NTSC) on S&T Scholarships during its meeting on 13 February 2013 made the preliminary review of the results of the examination and made recommendations on the selection criteria for review and approval of the Advisory Committee on S&T Scholarships (ACSTS). The latter convened on 25 February 2013 and deliberated on the recommendations of the NTSC and came up with selection criteria which were approved by its Chairman and Members through ACSTS Resolution No. 2013-01 dated 6 March 2013. Using the approved selection criteria, a total of 3,597 examinees were identified as qualifiers to the 2013 DOST-SEI Undergraduate S&T Scholarships.

The list of qualifiers was published in 24 March 2013 issue of The Philippine Star, The Manila Bulletin and the People's Journal Tonight. The said list was also posted at the following DOST-SEI websites: http://www.sei.dost.gov.ph and http://www.science-scholarships.ph. RA 7687 qualifiers from the National Capital Region and Merit qualifiers from all over the country were notified through express mail. RA 7687 qualifiers from other regis were notified by the respective DOST Regional Offices.

PRESENTATION OF THE 2013 S&T SCHOLARS TO THE DOST SECRETARY

Of this year's total number of qualifiers to the DOST-SEI Undergraduate S&T Scholarships, 499 or 14% come from the National Capital Region (NCR). Of this figure, 336 qualified under the RA 7687 while 163 qualified under the Merit Scholarship Program. The new scholars from the National Capital Region were presented to the DOST Secretary on 24 April 2013 at the DOST Executive Lounge. The Secretary and a successful scholar-graduate gave messages on the opportunities that await them after they graduate and on how to cope with the demands of being a DOST-SEI scholar, respectively. The event was attended by 356 qualifiers with their parents, DOST Officials and DOST-SEI staff.

DOST Secretary Mario G. Montejo delivering his inspirational speech to the 2013 new S&T Scholars.

The 2013 scholars from the National Capital Region pose together with DOST Sec. Mario G. Montejo and other DOST officials.

DOST-SEI Director Dr. Filma G. Brawner delivering her message to the new scholars.

Dr. C. Caoili sharing his experiences as a scholar now as S&T professional.

DOST Secretary Mario G. Montejo encouraged the scholars to excel in their academics so that when they graduate, they would be able to help the government address the pressing economic problems through science and technology.

DOST-SEI Director Dr. Filma G. Brawner said that DOST-SEI is hopeful that in the years to come, with the increasing number of high-calibre scientists, engineers and researchers who will collaborate with the government in crafting innovations geared at propelling the nation's economic growth and development, our country will be moving forward to much better days.

For this year, Dr. Salvador Eugenio C. Caoili, a 1989 DOST-SEI Merit scholar who graduated from the University of the Philippines with a degree in BS Molecular Biology and Biotechnology (MBB), *Summa cum laude*, served as guest speaker. Dr. Caoili is an Associate Professor at the Department of Biochemistry and Molecular Biology of the College of Medicine, University of the Philippines-Manila. He encouraged the scholars to excel in their studies as this will serve as their tickets to a better life in the future.

ORIENTATION AND SIGNING OF SCHOLARSHIP AGREEMENT OF THE 2013 S&T SCHOLARS

The orientation of 2013 S&T Scholars was done in order for them and their parents/legal guardians to have full understanding of the provisions in the Scholarship Agreement (SA) and other scholarship policies. The following sections in the Scholarship Agreement and other scholarship policies were thoroughly discussed with the participants: Nature; Duration of Scholarship; Study Placement; Dual Citizenship; Enjoyment of Any Other Scholarship Award; Scholarship Privileges; Scholarship Obligations; Supervision; Termination of Scholarship; Service in the Philippines; Travel Abroad; Refund of Scholarship Grant; and Obligation of the Parent/Legal Guardian. Those who were amenable with the terms and conditions signed the Scholarship Agreement and officially became DOST-SEI scholars.

Scholars and their parents/ legal guardian listen attentively to the scholarship staff discussing the provisions of the scholarship agreement.

Scholars and their parents/ legal guardian signing the Scholarship Agreement.

2013 SUMMER ORIENTATION AND ENRICHMENT PROGRAM (SOEP)

The Summer Orientation and Enrichment Program (SOEP) is one of the components of the Science and Technology Learning Assistance Program (STLAP). It is a month-long program for incoming RA 7687 freshman scholars conducted in May from Monday to Friday, 8:00A.M. to 5:00 P.M.. The SOEP is a Refresher Course focused mainly in four (4) areas:

- Basic English (Grammar, Usage and Technical Writing)
- College Mathematics (CollegeAlgebra, Trigonometry and Analytic Geometry)
- Physics
- Psycho-Social Skills Development

Pre-tests were given to the participants on the first day of the program as a diagnostic tool to assess their knowledge in College Algebra, Trigonometry, Analytic Geometry, English and Physics. The same tests were given on the last day of the subjects to determine the gains or the significance of the enrichment program. Lectures, exercises, board work and unit tests were given in the said subjects in the entire duration of the program. Psycho-social topics were also discussed which included coping with college life, stress management, time integrity, setting priorities, and learning style/skill, improved skills.

E-CARD FOR DOST-SEI SCHOLARS

The e-card serves as the scholars' identification card as DOST-SEI scholar which bears their Scholarship Program Administration System (SPAS) ID Number. The E-Card can be used in the various transactions of the scholars during the period of their scholarship.

At the National Capital Region, the LBP e-Account Opening and Picture-Taking were conducted on site where the SOEP classes were held last 22-23 May 2013 at TUP-Manila and May 27-28, 2013 at the Kamia Residence Hall. UP-Diliman. Personnel from the Land Bank of the Philippines (LBP)-Bicutan Branch processed applications for scholars' e-cards. Similar activity was also conducted in regions all over the country.

2013 SUMMER PRACTICAL TRAINING PROGRAM

Scholars in the junior/senior years are required to undergo a Summer Practical Training Program (SPTP). The general program objective is to enrich the practical experience of the scholars along their fields of specialization, thus preparing them better for future employment. They are required to undergo a 240-hour training for a minimum period of six (6) weeks within the months of April and May. Scholars may undergo their training with a government agency or a private company. Upon completion of the required training period and submission of required documents, scholars are entitled to receive their stipend equivalent to two months. At the National Capital Region (NCR), 142 scholars were given referral letters to potential training institutions.

LBP E-Card samples.

2014 DOST-SEI S&T UNDERGRADUATE SCHOLARSHIP EXAMINATION

The nationwide DOST-SEI undergraduate scholarship examination was conducted last 22 September 2013, in149 test centers all over the country.

DOST-SEI developed and printed three (3) parallel sets of test materials for the selection of the 2014 S&T scholars. So overall, this year's number of examinees registered at 33,529. This is higher by 30.50% compared to last year's number of examinees. The Overseas Worker Welfare Administration (OWWA) was once again a rider in the S&T Scholarship Examination for the selection of its 2014 Education for Development Scholarship Program (EDSP) and Congressional Migrant Workers Scholarship Program (CMWSP) scholars. This year, it had 4,353 examinees coming from the various regions of the Philippines.

Hopeful high school graduating students in Sorsogon take the S&T scholarship examination.

Furthermore, a total of 334 qualified fourth year high school students in the Middle East took the DOST-SEI Aptitude Test Battery for S&T Courses for the selection of qualifiers to the 2014 OWWA in EDSP. The examination was administered on December 4-6, 2013 at Bahrain; Alkhobar, Jeddah and Riyadh in the Kingdom of Saudi Arabia (KSA).

2013 S&T SCHOLARSHIP FOR SOPHOMORE COLLEGE STUDENTS

The 2013 S&T Scholarship Examination for Sophomore College Students was successfully administered nationwide on 24 November 2013. Overall, the total number of examinees was registered at 1,536. The National Capital Region had the highest number of examinees at 306 or 20% of the total.

College sophomore take the qualifying exam for the scholarship for sophomore college students.

GRADUATE SCIENCE AND TECHNOLOGY SCHOLARSHIP PROGRAMS

The S&T Graduate Scholarship Programs include the Capacity Building Program in Science Education, Accelerated Science and Technology Human Resource Development Program (ASTHRDP) and Engineering Research and Development for Technology (ERDT).

CAPACITY BUILDING PROGRAM IN SCIENCE EDUCATION

This program intends to increase the number and improve the quality of faculty in Teacher Education Institutions so they can be in a better capacity to mold our young people to be the future leaders in science, technology, engineering and mathematics (STEM). In 2013, DOST-SEI supported a total of 48 MS and 100 PhD scholars. The program produced four MS and nine PhD graduates.

1st National Research Conference in Science Mathematics Education

The Accelerated Science and Technology Human Resource Development Program –Science Education Consortium (ASTHRDP-SEC) conducted its 1st National Research Conference in Science and Mathematics Education with the theme: "Revitalizing Science and Mathematics Instruction for the 21st Century" on 18 October 2013 at the Sarabia Manor Hotel & Convention Center, Iloilo City. The event was participated in by 103 students, faculty and university officials from the four consortium-universities, namely Western Visayas State University, University of San Carlos, Western Mindanao State University, and Mindanao State University – Marawi City.

ACCELERATED SCIENCE AND TECHNOLOGY HUMAN RESOURCE DEVELOPMENT PROGRAM (ASTHRDP)

The ASTHRDP aims to improve the country's global competitiveness and capability to innovate through S&T and to accelerate the production of high-level human resources needed for research and development in S&T. In 2013, the program supported a total of 1,131 MS and 210 PhD scholars monitored by DOST-SEI through the National Science Consortium (NSC) and DOST Councils such as PCAARRD, PCHRD and PCIEERD. At the end of the year, it produced 222 MS and 31 PhD graduates.

(L-R) Top photo: DOST Sec. Mario G. Montejo served as the Keynote speaker in the 2nd Scholars' Conference held at the Traders Hotel Manila with Fr. Bienvenido F. Nebres, S.J., Chairman of Synergia Foundation (top right photo), Dr. Ludwig Streit, visiting professor from Bielfield University in Germany (bottom left photo), and Dr. Evelyn Mae Mendoza (bottom right photo) giving plenary talks.

Dr. Soledad A. Ulep, Director of UP-NISMED, talks on Promoting Teaching Mathematics through Problem Solving and Teaching using the Inquiry-based approach.

Participants of the conference register their names.

2nd DOST-SEI Accelerated Science and Technology Human Resource Development Program-National Science Consortium (ASTHRDP-NSC) Scholar's Conference

The ASTHRDP-NSC conducted its 2nd Scholars' Conference on 21-22 February 2013 at the Traders Hotel Manila with the theme: "Innovations to Accelerate S&T Human Resource Development." The conference hoped to forge a healthier convergence among scholar-graduates as they go into research and development (R&D) that will lead to innovations, catering to the needs of the industries. The activity served as an opportunity for scholars and their mentors to get together, gain updates on new developments in S&T, and present research outputs. In attendance were 284 scholars and mentors from NSC universities all over the country, nine project leaders and 32 guests.

The activity was graced by DOST Sec. Mario G. Montejo who served as the Keynote Speaker. In his message, he affirmed the DOST's commitment to support and provide a proper environment that will enhance and develop S&T competitiveness through our nation's vital assets – its human capital. Moreover, he believed that local technology works; hence, he encouraged the scholars to continue to strive their best in creating innovations.

There were five plenary talks and panel discussions on mentoring by different personalities in scientific and academic communities featured during the Conference.

Fr. Bienvenido F. Nebres, S.J., Chairman of Synergia Foundation delivered the Plenary Talk on "Developmental Stages in Building of Graduate Programs and Research: Challenges and Opportunities for the NSC." Dr. Ludwig Streit, Visting Professor from Bielfield University in Germany discussed the topic "From Brownian Motion to Plymers – Random Walk with a Memory," while Dr. Evelyn Mae Mendoza delivered a talk on "Ethics in Research and Publication."

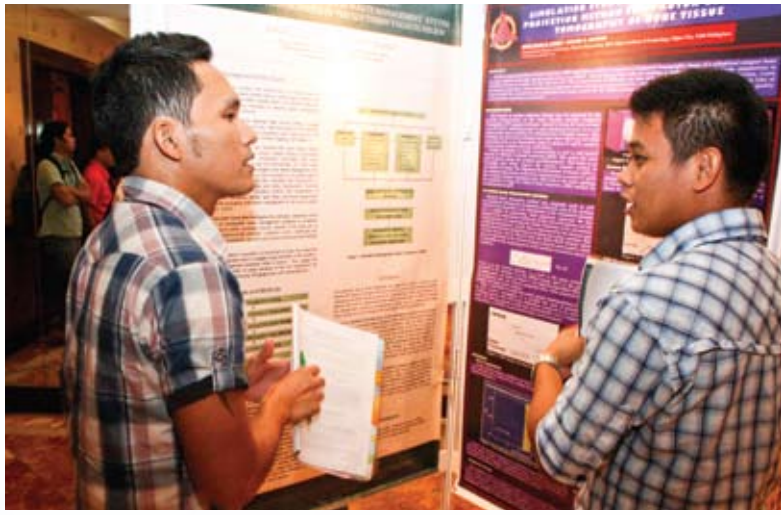
ENGINEERING RESEARCH AND DEVELOPMENT FOR TECHNOLOGY (ERDT)

The ERDT aims to attain a critical mass of Master's and Doctoral degree holders who will perform high-impact researches in engineering and technology that are aligned with the country's National Science and Technology Plan (NSTP) and Medium-Term Development Program (MTDP). It has a consortium composed of eight member-universities that offer quality masters and doctoral degrees in various engineering and technology fields. At the end of the year, DOST-SEI supported a total of 565 MS and 115 PhD scholars and produced a total of 89 MS and 10 PhD graduates.

Table 2. Number and Status of Scholars in the MS and PhD Scholarship Programs in 2013

Agency/ Program	Level	Status		Total
		Continuing	Graduated	
Science Education	MS	44	4	48
	PhD	91	9	100
ASTHRD	MS	909	222	1131
	PhD	179	31	1131
SEI*	MS	838	145	983
	PhD	166	10	176
PCAARRD	MS	5	33	38
	PhD	7	16	23
PCHRD	MS	49	28	77
	PhD	1	3	4
PCIEERD	MS	17	16	33
	PhD	5	2	7
ERDT	MS	476	89	565
	PhD	105	10	115
Total for All Programs	MS	1429	315	1744
	PhD	375	50	425

**including National Science Consortium (NSC)-monitored scholars*



Top photo: DOST Secretary Mario G. Montejo and NSC Steering Committee Chair Fabian M. Dayrit lead the ribbon cutting and opening of poster exhibit. Together with them are the members of the NSC Steering Committee and SEI officials. Middle photo: An ASTHRDP scholar presents his research output through poster. Bottom photo: ASTHRDP scholar Joel M. Chavez at DLSU gave an oral presentation on his research output titled "Taxonomy and New Distribution of Invasive Suckermouth Armored Catfishes (Pisces: Pterygoplichthys)." Forty three other scholars participated in the oral presentation sessions.

RECOGNITION OF DOST-SEI SCHOLARS

2013 IN TOUCH WITH EXCELLENCE

This is an annual activity conducted as part of the celebration of the National Science and Technology Week (NSTW) every July to recognize the DOST-SEI scholars who graduated with honors, who completed their MS and PhD degrees and those who completed their degrees earlier than the prescribed periods of study. This year's event was held at the Hyatt Regency Hotel in Malate, Manila on 25 July 2013.

In 2013, the Undergraduate S&T Scholarship Programs produced a total of 1,766 graduates. Of the said figure, 1,537 were scholars under the RA 7687 Scholarship Program while 229 were from the Merit Scholarship Program. Of the total number of graduates, 21% received academic awards, to wit: nine *Summa cum laude*, 71 *Magna cum laude*, 279 *Cum laude*, eight Honorable Mention and four with Academic Distinctions. Four scholars completed their courses earlier than their prescribed periods of study.

The Graduate Scholarship Programs produced a total of 315 Masters and 50 PhD graduates. The ASTHRDP contributed the largest percentage of graduates at 69.32% having produced 222 MS and 31 PhD graduates.

Ms. Jane Melissa DL. Lim (top), a 2009 Merit scholar who graduated summa cum laude in BS Molecular Biology and Biotechnology at the University of the Philippines-Diliman and Ms. Catherine B. Bartolome (bottom), RA 7687 Scholar, who graduated summa cum laude in BS Information Technology at the University of the East-Manila, share their experiences as DOST-SEI scholars.

Table 3. Undergraduate S&T Scholars with Academic Awards, and Completed Earlier than the Provided Study Period

Scholarship Program	No. of Graduates	Academic Awards							Completed Earlier	
		Summa cum laude	Magna cum laude	Cum laude	Honorable Mention	With Academic Distinction	Total			
							N	%	N	%
Merit	229	3	12	48	2		65	28.38	2	0.01
RA 7687	1,537	6	59	231	6	4	306	19.91	2	0.13
Total	1,766	9	71	279	8	4	371	21.01	4	0.23

ASTHRDP Master of Technology Management (MTM) Batch 2 graduates pose for a group picture during the In Touch with Excellence Program.

The Engineering Research and Development for Technology (ERDT) produced 89 MS and 10 PhD while the Capacity Building in Science Education had four MS and nine PhD graduates.

In the undergraduate level, DOST-SEI scholars who graduated with honors were awarded with medals of Academic Excellence. In the graduate level, those who completed their MS and PhD were awarded with Certificates and Plaques of Achievement, respectively. Those who completed their degrees earlier than the prescribed period of their courses were given the amount equivalent to their monthly stipends due them in the remaining semester/s of the course. Furthermore, the period of service obligation that will be required of them is equivalent only to the period it took them to complete the course.

Table 4. Comparative Number of Graduates in the Various MS and PhD Scholarship Programs

Scholarship Program	Number of Graduates		
	Masters	Doctoral	Total
ASTHRDP	222	31	253
ERDT	89	10	99
Capacity Building in Science Education	4	9	13
Total	315	50	365

Dr. Danilo C. Lachica, a 1971 NSTA/NSDB scholar and President of the Semiconductor and Electronics Industries in the Philippine, Inc., encourages the new graduated scholar to continue striving for excellence in his Keynote message during the In Touch with Excellence.

SUPPORT TO THE PRESIDENTIAL COMMITTEE IMPLEMENTING PD 997

The project "Support to the Committee Implementing Presidential Decree (PD) 997" is a DOST-Directed GIA Project which was officially transferred from the Office of the Undersecretary for Research and Development of the DOST to the Science Education Institute (SEI) as the implementing agency, effective 1 April 2013 by virtue of DOST Administrative Order No. 001, dated 10 January 2013.

PD 997 is a law that allows the conferment of Civil Service Eligibility to a scientific or technological specialist who has gained advanced education, sharpened by research and teaching experience to promote scientific research and invention towards the advancement of science. It attracts S&T specialists into public service through the issuance of Scientific and Technological (S&T) Specialist Eligibility, which is considered appropriate for personnel in the first and second positions in the government whose courses are not covered by Bar, Board and other special laws.

PD 997 Brochure.

With a firm commitment of support in accomplishing the task, the Technical Working Group, which assists the PD 977 Presidential Committee in the sound and smooth implementation of the project, has evaluated 43 applications for the grant of S&T Specialist Eligibility under PD 997 in 2013. However, only 12 applicants were finally approved by the Presidential Committee and were endorsed by the DOST Secretary to the Civil Service Commission for the conferment of PD 997 S&T eligibility. There are 10 applications on deferred status, pending submission of additional requirements, while eight applications were forwarded to the Presidential Committee for final evaluation.

BUILDING SCIENCE & TECHNOLOGY CULTURE

Through many generations, it has been a normal way of sending children to school just to finish elementary and secondary education. Deciding what course to take in college is often made at the very last moment. To a large extent, the trend has been inclined towards non-S&T professions, primarily due to a virtual lack of emphasis on science and technology during the early stages of education. The need to change that trend required a good measure of interventions. This is why various activities being implemented by SEI in the elementary and high school levels have been focused in building a culture in science and technology. Creating the right environment with meaningful and exciting programs have stimulated a growing interest in S&T among the students, which marked a turning point in the process of transformation.

SCIENCE EXPLORER

Learning in a fun environment allows the student to impress upon their hearts and minds the knowledge that they take in. It is in this environment that students discover science in a new light, learn through their hands, and get a glimpse of the exciting life of a scientist.

The Science Explorer, the Philippines' first and only mobile learning science facility, fosters this fun environment and in 2013 has energized 3,081 students from 67 schools throughout the country.

For 2013, the Science Explorer broke barriers as it went to the following locations:

Table 5. The Science Explorer Ventures into Actual Locations

DESTINATION	NUMBER OF PARTICIPANTS
Malabon City	90
Bulalacao, Oriental Mindoro	400
Naga City	360
Tuguegarao City	2, 231

A total of 14 new modules were developed thereby increasing the roster of modules aimed at catering to the various needs of the students. These new modules are:

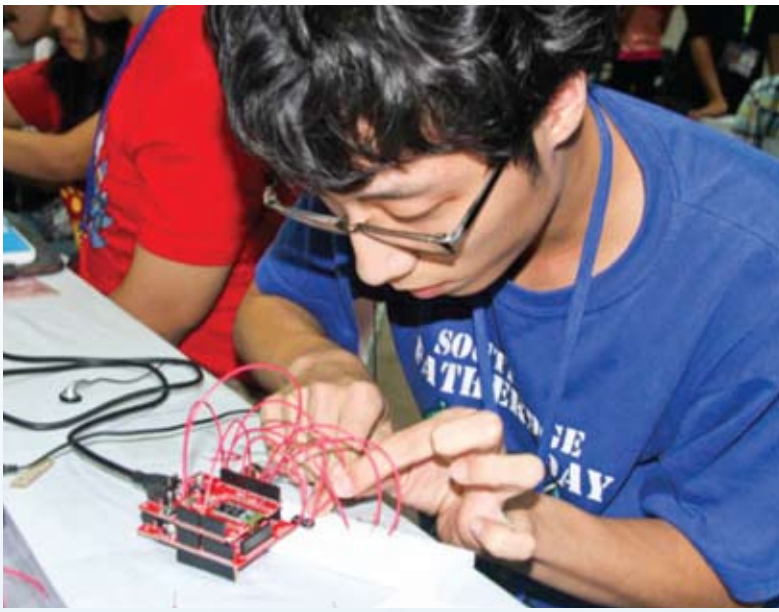
1. Basic Programming
2. Maximizing the Use of the Internet for Research
3. Basketball and Mathematics
4. Igneous Rocks
5. Biodiversity 2.9
6. The Sun
7. Electric Energy – Elementary
8. Climate Change – Elementary
9. Solar Energy – Elementary
10. Solar Energy – High School
11. Photosynthesis
12. Geothermal Energy
13. Climate Change – High School
14. Wind Energy

Students from Tuguegarao City identify the corresponding types of energy using their body parts in an interactive game in the Science Explorer.

TAGISANG ROBOTICS: DESIGN. BUILD. PLAY.

Tagisang Robotics: Design. Build. Play is the first and only varsity-type robotics competition in the country founded on the ideas of "Pagyabong, kalinangan at pagkakaisa sa gitna ng pakikipagtunggali." The aim of the competition is to enable the participants to harness their skills by learning and cooperating with others, despite being on a highly competitive environment. It seeks to encourage students to think out of the box solutions on challenges posed before them and allow them to execute their ideas into action.

Technical Training and Workshop. A five-day intensive robotics training program was attended by 117 participants composed of two (2) students and a coach from each of the 39 invited high schools from National Capital Region (NCR) and Bulacan on 27-31 May 2013 at the PHIVOLCS Auditorium, Diliman, Quezon City. Members of each participating school team were given hands-on training on Basic Electronics, Arduino-based microcontroller programming, Bluetooth module application, breadboard prototyping and Mechatronics. Among the 39 school teams, nine (9) new teams vied for the Best Rookie Team Award.



A student from PAREF-Southridge School checks the wiring connections as he attempts to pair up the Bluetooth modules.

Game Kick-off Ceremony. The Game Kick-off Ceremony signaled the start of the 90-day robot building period as each team received a common kit-of-Parts (KOP) on 28 August 2013 at the National Institute of Physics (NIP) Auditorium, University of the Philippines, Diliman, Quezon City. Teams were allowed to seek the help of engineers in the industry or the academe to advise them on the design and build of their robot. However, students in the team were encouraged to take active roles in all aspects of the robot design and build, and in playing the game during the final competition.

Final Competition. The three-day event was held at the Hall 2 of SMX Convention Center, SM Mall of Asia Compound, Pasay City on 19-21 November 2013 in partnership with Nido Fortified Science Discovery Center and SM Prime Holdings Inc.

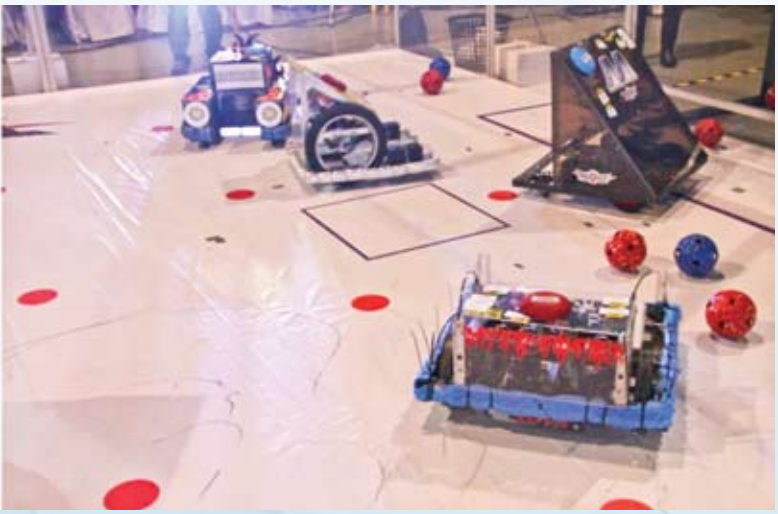
Pitogo High School, one of the eight new schools in the 3rd Tagisang Robotics: Design, Build and Play Competition, ruled the elimination round with a perfect 6-0 slate, making them not only the Best Rookie Team but also the Best Team. As the Best Rookie Team, they won P50,000 cash prize, P10,000 for their coach, medals for all students and a trophy for their school. They also garnered another P100,000 cash prize, P30,000 for their coach, along with a trophy and medals for winning the the Best Team award.

Likewise, the alliance of Benigno Aquino High School (last year's Best Team Awardee), Ramon Magsaysay (Cubao) High School, and Rizal National Science High School won the Final Round with a perfect 2-0 record to be named as the Best Alliance and brought home P150,000 cash prize, P30,000 for their coaches, medals for students and trophies for their schools.

For the Special Awards, Grace Christian College won the Best Engineering Design Award given by the National Instruments Philippines; La Salle Greenhills won both the Most Popular Robot Award and Most Popular Team Award given by Felta Multimedia, Inc. and Alexan Commercial, respectively; and Pasig City Science Highschool grabbed the Best Blog Award courtesy of Think Lab. More than 400 students, teachers and robotics enthusiasts attended the event.

Student-members of Marcelo H. Del Pilar High School pose for a shot after presenting their "team-cheer" during the Opening Ceremony of the Tagisang Robotics.

Students make last minute adjustments to their robot before competing in the Elimination Round.



Teams battle for position as their robots try to score as many goals as they can to reach the Final Round.

Benigno Aquino High School, Rizal National Science High School and Ramon Magsaysay High School – (Cubao) show their school pride as they receive the Best Alliance Award.

2013 GEO MARINE SCIENCE CAMP

In this year's Science Camp, the Department of Science and Technology-Science Education Institute (DOST-SEI) implemented two sub-camps; the Geology and Marine Science Camp with the theme: "Rock the Ridge, Reach the Reef". It was conducted with scientists from the UP National Institute of Geological Sciences (UP-NIGS) and Marine Science Institute (UP-MSI) as Resource Persons and Facilitators.

It was held on 27 April to 5 May 2013 at Hollywood Palm Beach Resort, White Beach, Puerto Galera, Oriental Mindoro. There were fifty nine (59) students and teachers coming from S&T Oriented High Schools in Regions IV-A, IV-B and V who participated in the camp.

Instructors from UP NIGS guide campers on the proper use of the compass and the process of triangulation in preparation for their trek to Mt. Malasimbo.

The nine-day Science Camp engaged the participants in innovative hands-on laboratory activities and on-site field activities in Geology and Oceanography to get a feel of how scientists work in the field and gain a deeper and broader understanding of the world beyond the walls of the classroom.

The program featured a variety of activities such as: lectures, laboratory activities, field activities and exposure trips. The major topics for Marine Science are: Scientific Methodology, Physics, Geology, Chemistry and Biology, Sea Safety and Survival. For the Geology camp: an orientation entitled: "What geologists do?" and lecture of Geology Skills, as well as activities on Rock and Minerals Identification and Map Reading.

Students were teamed with experts/scientists throughout the Camp and were divided into six (6) groups for their field activities, namely: (Marine) Navigation; Waves, Currents and Tides; Chemical Analysis; Plankton Sampling; Plankton Microscopy and Basics of Snorkeling; (Geology) Triangulation and Compass Use; Map Reading and Topography; Outcrop Observation; Pace Factor; Field Notes; Fossil and Sand Appreciation; and Amazing Race.

INNOVATION AND CLIMATE SCIENCE YOUTH SUMMIT

This is a part of a year-long program in partnership with Hyundai Asia Resources, Inc. (HARI) Foundation Inc. (HFI) that includes an "Innovation and Climate Science Camp" and a culminating activity entitled "Hyundai New Thinkers Spotlight" that seeks to empower the youth through science education, and at the same time to address the need for more science professionals in the country.

It aims to develop creative thinking and leadership among high-school students in helping solve real climate-related problems in their communities, and to enhance their interests in science and technology careers particularly in geology and oceanography.

At the MOA Signing (L-R): HFI Chairman Richard L. Lee, HFI President Ma. Fe Perez-Agudo, DOST-SEI Director Dr. Filma G. Brawer.

A lecture session during the Innovation and Climate Science Youth Summit.

Students giving their reflections on the Summit.

Seventy eight (78) junior high school students and teachers from thirty-nine (39) high schools in Regions III, IV-A and National Capital Region were introduced to earth and ocean sciences, submitting project proposals that address specific environmental issues prevailing in their communities, and recommending solutions to real-world problems through creative, critical thinking and leadership.

The top twenty (20) Schools were as follows:
1. Philippine Science High School – Main Campus
2. Santa Lucia High School
3. Taguig National High School
4. Kasarinlan High School
5. Rizal High School
6. Sisters of Mary School
7. Ramon Magsaysay High School
8. Manila Science High School
9. Valenzuela City Science High School
10. Pateros National High School
11. Bataan National High School
12. Emilio C. Bernabe High School
13. Mariveles National High School – Poblacion
14. Morong National High School
15. Olongapo City National High School
16. Marcelo H. Del Pilar National High School
17. Maronquillo National High School
18. Philippine Science High School – Central Luzon
19. Claro M. Recto Information and Communication Technology High School
20. Cavite National High School

Student participants in the Summit and teachers, together with officers of Hari Foundation, Inc. and DOST-SEI.

PHILIPPINE SPACE SCIENCE EDUCATION PROGRAM

In 2004, the Department of Science and Technology-Science Education Institute (DOST-SEI) was designated by UNESCO Paris to act as focal point for its space-education program and related activities in the Philippines.

Through this program, the annual celebration of World Space Week every 4-10 October as declared by the United Nations General Assembly in 1999 is being conducted by DOST-SEI in its commitment to promote space science education in the country.

Public Lecture on Astronomy and Space Science: "Stellar Evolution".The University of the Philippines Los Baños(UPLB),as facilitated by the Office for Astronomy Development (OAD) of the International Astronomical Union (IAU), coordinated the visit of Dr. Victor Laszlo Toth, Adjunct Professor of the Astronomy Department of Eotvos University in Budapest, Hungary to the Philippines on 13-21 March 2013 to sign a Memorandum of Agreement with UPLB to establish a research collaboration and other formal institutional arrangements.

In line with the Philippine Space Science Education Program's (PSSEP) aim to popularize space science among students and teachers, a Public Lecture entitled, "Stellar Evolution" was held on 15 March 2013 at the Manila Science High School and Malayan High School of Science.The Public Lecture aims to: encourage young students to pursue STEM careers by using Astronomy as a gateway, and to create awareness on career opportunities in Space Science and the benefits of space technology and its application.

Dr. Viktor Laszlo Toth of Eotvos University in Budapest, Hungary shares his expertise about interstellar matter and space technology application specifically in remote sensing to young students of Malayan Science High School of Science.

Yuri's Night Celebration. The Space Generation Advisory Council (SGAC) in the Philippines, in partnership with the Department of Science and Technology – Science Education Institute (DOST-SEI), PASCO Corporation and the SM Group of Companies conducted the 2013 Yuri's Night, an international celebration held annually to commemorate space exploration milestones, at the Nido Fortified Science Discovery Center, SM Mall of Asia Complex, Pasay City. The event was held to honor Yuri Gagarin's (the first human to launch into space) flight through the Vostok 1 space ship on 12 April 1961.The celebration of Yuri's Night, which is also in line with DOST-SEI's implementation of the Philippine Space Science Education Program(PSSEP), aims to increase the interest of students in space exploration through artistic showcases .

Dr. Rogel Mari Sese, Focal Person of PSSEP, talks about the importance of space technology applications and career opportunities in space science during the Opening Ceremony of the Yuri's Night Celebration.

2013 World Space Week Celebration. The 2013 World Space Week (WSW) Celebration opened on 4 October at the Manila Ocean Park in parallel with the opening of the Hyundai New Thinkers Summit.This year's Space Week is marked with the theme "Discovering Earth, Exploring Mars." Students from ten (10) elementary public schools in Manila were invited to participate in the On-the-Spot Poster Making Contest held in Museo Pambata with the theme: "Space and Me." From the twenty (20) elementary students who participated in the contest, three (3) were declared as winners, namely: Gwen Michel D. Magayacof Plaridel Elementary School - 1st Place; Matthew Louis A. Tambong of Manuel L. Quezon Elementary School - 2nd Place; and Janna Marie P. Borja of Andres Bonifacio Elementary School - 3rd Place. The winners received cash prizes from SEI and special prizes from Sharp Calculators and Nido. The winning posters were sent to Hanoi, Vietnam as the country's entries to the 20th Asia Pacific Region Space Agency Forum (APRSAF) Poster Contest held on 6 December 2013.

The WSW celebration in the Philippines culminated with more space science activities conducted on 8-10 October at the Gawad Kalinga (GK) Enchanted Farm in Angat, Bulacan. Dr. Rogel Mari D. Sese, Focal Person of PSSEP, gave a lecture on the value of CanSatellite to education, Astronomy and the Filipino Educators and conducted Water Rocket Training and Workshop for students. A hands-on activity about the atmosphere of the Earth and craters of Mars were also conducted for both students and teachers. A total of 54 students and teachers from eighteen (18) public high schools from Regions III, IV-A, NCR and VII participated in the National Water Rocket Competition. Philippine Science High School (PSHS) Central Visayas Campus won First Place in the said competition. The two (2) students from the said school represented the country and competed in the 20th APRSAF Water Rocket Competition held in Hanoi, Vietnam. The WSW celebration also included the "Star Party" where members of different astronomy-related organizations installed telescopes to be used for stargazing by the public and community members.

20th Asia Pacific Regional Space Agency Forum. The Philippines participated in the 20th Asia Pacific Regional Space Agency Forum (APRSAF) on 30 November to 6 December 2013 in Hanoi, Vietnam. Two high school students from Philippine Science High School – Central Visayas Campus, namely: Mary Dorothy Dinampo and Weand Ybañez represented the Philippines in the

A student-contestant of the National Water Rocket Competition carefully measures the air pressure as he tries to hit the target 70 meters away from the launch site.

Water Rocket Side Event held on 30 November to 2 December 2013. They competed against 15 countries from Asia Pacific Region with PSSEP Focal Person, Dr. Rogel Mari Sese of UPLB as coach. The event was hosted by Vietnam Academy of Science and Technology – Space Technology Institute (VAST-STI) in cooperation with Japan Aerospace Exploration Agency (JAXA). Japan won 1st Place, while India and Malaysia placed 2nd and 3rd Place respectively.

Dr. Sese shows a Can Sattelite (CanSat) prototype to the participants as he explains the importance and value of CanSat to education. CanSat is a simulation of a real satellite, integrated in a regular soda can.

PHILIPPINE MATHEMATICAL OLYMPIAD (PMO)

The PMO is the oldest and the most prestigious national mathematics competition among secondary students in the country. The top fifty (50) scorers of the qualifying stage from Luzon, Visayas and Mindanao would move on to the second part of selection which is the Area Stage and the top twenty (20) scorers in this stage would qualify to the National Stage. The PMO is a project of DOST-SEI organized and implemented by the Mathematical Society of the Philippines (MSP).

It aims to improve mathematics education in the country by awakening greater interest in mathematics among students and teachers.

Around 3,500 high school students took part in this year's Philippine Mathematical Olympiad (PMO). The Qualifying Stage examination was held simultaneously on 13 October 2012 in 15 Regional Testing Centers all over the country. Only the top 50 scorers or 208 participants from Luzon, Visayas, Mindanao and NCR moved on to the Area Stage of the competition.

The Area Stage was held on 17 November 2012 also at the Regional Testing Centers while the National Stage was held on 26 January 2013 at the De La Salle University, Manila with twenty (20) finalists competing. The top three winners received the following awards and prizes:

Table 6. Winners in the 2013 Philippine Mathematical Olympiad (PMO)

NAME	SCHOOL	AWARD/PRIZE RECEIVED
Justin Edric Yturzaeta	Jubilee Christian Academy	First Place P15,000, Trophy, Medal & Cert
Mikaela Angelina Uy	St. Jude Catholic School	Second Place P10,000, Trophy, Medal & Cert
Farrell Eldrian Wu	MGC New Life Christian Academy	Third Place P5,000, Trophy, Medal & Cert

Among those present in the awarding ceremony were Dr. Filma G. Brawner, DOST-SEI Director, Dr. Arlene Pascasio, Dean, DLSU College of Science, Dr. Jose Maria Balmaceda, MSP National Board Member, Dr. Jose Ernie Lope, PMO Director and Dr. Jumela Sarmiento, MSP President.

From L-R: Dr. Jumela Sarmiento, MSP President, Dr. Filma G. Brawner, DOST-SEI Director, Dr. Milagros Ibe, FUSE Representative, Farrell Eldrian Wu (3rd Placer), Mikaela Angelina Uy (2nd Placer), Justin Edric Yturzaeta (1st Placer), Fr. Onofre G. Inocencio, SDB, FUSE Trustee and Dr. Ricardo P. Laguda, FSC, President & Chancellor of DLSU-Manila during the awarding ceremonies of the 2013 PMO..

PHILIPPINE ROBOTICS OLYMPIAD (PRO)

The Philippine Robotics Olympiad (PRO) is a robotics competition for elementary, and high school students from public and private schools, aged 10-12 years old for elementary, and 13-15 years old for high school. There are two (2) categories played during the competition: Regular and Open Categories. The top three (3) team winners in the Regular Category and the top two (2) team winners in the Open Category represent the Philippines in the World Robot Olympiad (WRO).

The competition aims to challenge the intellectual skills and critical thinking of elementary and high school students. It also encourages the youth to be future engineers, scientists and inventor to help the country in technological development.

The preliminary judging of PRO was conducted on 2 September 2013 for Elementary Level, while the preliminary judging for high school was on 3 September 2013, both at

Participants of Philippine Robotics Olympiad (PRO) with Ms. Mylene Abiva, National Organizer during the Closing & Awarding Ceremonies at SM North EDSA, Quezon City.

SM North EDSA, Annex Bldg., Quezon City, participated in by fifty-four (54) teams from elementary level, and ninety-one (91) teams in the secondary level. Thirty-three (33) teams in the elementary and forty (40) teams in the secondary level qualified in the final judging which was conducted on 4 September 2013.

The Top four (4) team winners, each from the elementary and high school levels (Regular category), competed in the World Robot Olympiad (WRO) held on 15-17 November 2013, in Jakarta, Indonesia. They are: (Elementary) Marie Ernestine School, Cebu; Tibagan Elementary School, Makati; Science & Technology Education Center, Cebu – Team B; Science & Technology Education Center, Cebu– Team A; (Secondary) Science & Tech. Education Center, Cebu; Benigno Aquino HS, Makati; Dr. Caridad C. Labe Educ. Centrix Inc., Cebu; and Philippine Science High School – Bicol Campus.

The following top three (3) teams of the Open Category, elementary & high school levels also competed in the 2013 WRO: (Elementary) Dr. Yanga's Colleges Inc., Bulacan; Grace Christian College, Quezon City; Sto. Cristo Elem. School, Quezon City; (High School) Dr. Yanga's College; Grace Christian College; and Claret School of Quezon City. For the Robot Soccer: PSHS and – Bicol Campus, Team B; PSHS – Bicol Campus, Team A; Benigno Aquino High School; and Nemesio Yabut Elementary School.

BPI-DOST BEST PROJECT OF THE YEAR AWARDS

The BPI-DOST Best Project of the Year Awards is a joint project of DOST and BPI Foundation. It is an annual competition for Best Thesis by graduating students pursuing science courses in ten (10) accredited schools/universities. Top three (3) winners of this project received cash prizes, trophies and certificates.

It aims to give recognition and incentives to students who excel in the fields of science, namely: Biology, Mathematics, Chemistry, Physics, Engineering and Computer Science.

The beneficiaries of the said awards are Graduating College students from Ateneo De Manila University, Ateneo De Davao University, De La Salle University, University of Santo Tomas, University of the Philippines – Los Baños and Diliman, Saint Louis Univ., Silliman University, University of San Carlos and Xavier University.

The Best Project of the Year is an award given by the BPI Foundation and the DOST through SEI in recognition of outstanding students who conduct research in Mathematics, Physics, Chemistry, Engineering, Computer Science, Biology, and Environmental Science.

The preliminary judging of entries for this project was conducted on 4 January 2013 wherein six judges selected the twelve (12) semi-finalists and the top six (6) finalists. The judges were composed of four (4) experts from DOST for the technical aspect and two (2) from BPI for the business aspect.

The oral presentation of projects and selection of top three (3) winners and awarding ceremonies were held on 18 January 2013 at BPI-Makati City.

Table 7. Top Three Winners of the BPI-DOST Best Project of the Year Awards

NAME AND UNIVERSITY	PROJECT TITLE	AWARDS/PRIZES
Jann Adriel Sy University of the Philippines – Diliman	"Single nucleotide polymorphisms in the 3' untranslated region of the pregnane X receptor gene and inter-individual variability in drug responses"	First/Best Project P 50,000.00 Trophy & Certificate
Jose Paolo P. Aguilar University of Santo Tomas	"Remediation of chromium by immobilized microorganisms with zero-valent iron nanoparticles"	2nd/First Runner-up P 30,000.00 Trophy & Certificate
Napoleon Salvador B. Antonio Ateneo De Manila University	"Towards affordable solar cells: Fabrication of photovoltaic devices incorporating doped graphene from graphite and doped Carbon from pyrolyzed glycerol"	3rd/Second Runner-up P 10,000.00 Trophy & Certificate

(From left to right) BPI President Aurelio R. Montinola III, Napoleon Salvador B. Antonio (2nd runner-up), Jann Adriel C. Sy (Grand Prize Winner), Jose Paolo P. Aguilar (1st runner-up), Dr. Filma G. Brawner, Director of Science Education Institute, DOST and SVP Florendo G. Maranan, Executive Director of BPI Foundation.

Participants to the 2013 FLL getting ready for the final run during the national competition.

FIRST LEGO LEAGUE (FLL) NATIONAL

The First Lego League (FLL) is a robotics program for children aged 9 to 16 years old, which engages them in playful and meaningful learning and teaches them career and life skills in a fun instructional way and entices them to think like scientists and engineers.

The theme for the 2013 FLL was "Senior Solutions." The local competition was conducted on16 February 2013 at the Quezon City Science Interactive Center, Bago Bantay, Quezon City. It was participated in by 20 teams from different public and private elementary and high schools.

Grace Christian College won the National FLL and represented the country in the international FLL World Festival on 24-27 April 2013 in St. Louis, Missouri, USA. The National FLL is a joint project of SEI-DOST and Felta Multimedia Inc.

INTERNATIONAL COMPETITIONS

Australian Mathematics Competition (AMC)

The Australian Mathematics Competition (AMC) is an annual international correspondence-based mathematics competition administered by the non-profit Australian Mathematics Trust (AMT). Conducted by DOST–SEI in cooperation with the Mathematics Trainers' Guild (MTG), DOST Regional Offices and Department of Education, AMC is considered as one of the largest competitions in the world administered simultaneously in different countries including the Philippines. It was conducted on 2 August 2013 and participated in by more than 400, 000 students from 40 countries including 3,662 students from the Philippines.The 2013 AMC Awarding Ceremonies was held on 22 October 2013 at the Manila Grand Opera Hotel, Manila. More than 300 students, parents and guests attended the said event.

Table 8. AMC Awardees in the Philippines

PRIZE	STUDENTS	SCHOOL
Perfect Score	Matthew Angelo Isidro	St. Jude Catholic School
	Adrian Reginald Sy	St. Jude Catholic School
	Shaquille Wyan Que	Grace Christian College
	Clyde Wesley Ang	Chiang Kai Shek College
	Kyle Patrick Dulay	Philippine Science High School – Main Campus
Prize Awards	Matthew Ryan Tan	St. Jude Catholic School
	Christian Philip Gelera	Philippine Science High School – Main Campus
	Dion Stephan Ong	Ateneo Grade School
	Dominic Lawrence Bermudez	Notre Dame of Greater Manila
	Shawn Darren Chua	MGC New Life Christian Academy

Sixty two (62) students from different schools received Certificates of High Distinction.

Mr. Bill Tweddell, Australian Ambassador to the Philippines and Prof. Mike Clapper, Executive Director, Australian Mathematics Trust, gave Congratulatory Messages to the participants, while Ms. Ruby R. Cristobal, Chief, STMERPD of SEI, read the message of Ms. Elizabeth A. Fontanilla, Officer-in-Charge, DOST-SEI.

AMC Gold Medalists with Mr. Bill Tweddell, Australian Ambassador to the Philippines; Prof. Mike Clapper, Executive Director, Australian Mathematics Trust; Dr. Simon L. Chua, MTG President; and Ms. Ruby R. Cristobal, Chief, STMERPD-SEI during the AMC Awarding Ceremonies held at Manila Grand Opera Hotel.

International Mathematics Olympiad (IMO)

The International Mathematics Olympiad (IMO) is the largest, most prestigious and most difficult mathematics competition among the best secondary students in the world and is held annually in different countries. The Philippine participation to the IMO is jointly organized by SEI-DOST and the Mathematical Society of the Philippines (MSP).

The 54th IMO was held in Santa Marta, Columbia on 18-24 July 2013. The Philippine team was composed of five (5) students, one Team Leader and one Deputy Team Leader. The team garnered three (3) Bronze Medals, courtesy of Deany Hendrick Cheng of Grace Christian College, Adrian Reginald Sy of St. Jude Catholic School, and Mikaela Angelina Uy of St. Jude Catholic School. The other two contestants, Farrell Eldrian Wu of MGC New Life Academy and Ma. Czarina Lao of St. Jude Catholic School, won honorable mentions. This is, so far, the best Philippine participation in the IMO since 1995 as the team raises the country's rank considerably higher than last year. The Philippines placed 53rd out of 97 countries in this year's IMO.

Dr. Jose Ernie Lope and Dr. Joseph Ray Clarence Damasco both of UP-Institute of Mathematics led the Philippine Team as Team Leader and Deputy Team Leader, respectively. They were assisted by the trainers of the Mathematical Society of the Philippines (MSP), Dr. Timothy Teng, Dr. Job Nable of Ateneo, Dr. Louie John Vallejo of UPD, Dr. Richard Eden and Mr. Glen Ong, in preparing the national team.

The Philippine participation to the 54th IMO is a partnership between DOST-SEI and MSP in cooperation with the UP – Institute of Mathematics and Metrobank Foundation.

DOST-SEI Officials welcome back the Philippine Team to the 54th IMO as they arrive at the Ninoy Aquino International Airport.

World Robot Olympiad (WRO)

Winning in the World Robot Olympiad (WRO) is a pinnacle of excellence and achievement in robotics for elementary & secondary students throughout the world. It is an annual event for science, technology and education which brings together young people to develop their creativity and analytical skills through challenging and educational robot competitions. The participation of the Philippine Team in the WRO is a joint project of DOST-SEI and FELTA Multi Media Inc.

Silver Awardees – Team from Dr. Yanga's College with Ms. Mylene Abiva, Pres., FELTA Multi Media Inc. and SEI-DOST OIC, Dir. Elizabeth A. Fontanilla.

Bronze Awardees – Team from Grace Christian College with Ms. Mylene Abiva, Pres., FELTA Multi Media Inc. and SEI-DOST OIC, Dir. Elizabeth A. Fontanilla

The 2013 World Robot Olympiad was held on 15-17 November 2013 in Jakarta, Indonesia. A total of 36 countries, 392 teams or over 1,000 students participated in this year's WRO with the theme, "Promotion and Prevention of World Heritage Sites". The Philippine Robotics Team was represented by 112 participants, headed by Dir. Elizabeth A. Fontanilla, Officer-in-Charge of DOST-SEI and Ms. Mylene Abiva, CEO/President of FELTA Multimedia Inc. and National Organizer of Philippine Robotics Olympiad (PRO).

The Philippine Team won two Silver and two Bronze awards. The Silver Awardees are: Dr. Yanga's College Inc. – Open Category Elementary for Tubbataha Reefs and Dr. Yanga's College Inc. – Open Category Junior High School for Banaue Rice Terraces. The Bronze Awardees are: Grace Christian College for Open Category, Junior High School Level and Dr. Yanga's College Inc. - for College Level.

Philippine Participation in the FIRST Lego League

FIRST Lego League (FLL) is a partnership between FIRST (For Inspiration and Recognition of Science and Technology) and the LEGO Group which has created a powerful program that helps young people discover the fun in science and technology while building self-confidence, knowledge, and valuable employment and life skills through robotics.

The winners in the 2013 National FLL represented the country in the FLL World Festival held on 22-29 April 2013 in St. Louis, Missouri, USA. The Philippine delegation was composed of students from Grace Christian College, namely: Brandon Joshua Gococo, Arvy Daniel Ngo, Cherub Christopher Dim, Kimberly Klaire Gamboa, Sean Patrick Lee, Alexandra Nicole Purino, Shaina Santiago, Anne Margarette Ong, Jeremy Lance Uy, Alexis Diane Ngo and their coaches Mr. Warren John B. Ong Pe and Ms. Melanie Tizon. The Philippines ranked 64th out of 79 countries that participated in the said competition.

International Mathematics and Science Olympiad (IMSO)

International Mathematics and Science Olympiad (IMSO) is an annual international competition for Primary students in Math and Science organized in the Philippines by the Mathematics Trainers Guild (MTG) in cooperation with DOST-SEI and the Department of Education (DepEd). This event is participated in mostly by member countries of the Association of South East Asian Nations (ASEAN).

It aims to develop primary students' talent and interest as well as motivate them to enhance their intellectual capacity and skills in mathematics and science.

The 10th IMSO was held on 25-29 November 2013 in Alfonso, Cavite where 17 countries, mostly members of ASEAN, participated. DOST-SEI hosted a Welcome Dinner for foreign VIPs and guests on 26 November 2013 at Taal Vista, Hotel Tagaytay City. The Filipino math and science savvy kids aced the contest with three (3) Gold, ten (10) Silver and twenty

IMSO participants at day 1 activity - November 25, 2013, Tagaytay City.

(20) Bronze Medals in the Mathematics Division and eight (8) silver and twenty-five (25) bronze in the Science Division. The closing and awarding ceremonies were held at Samsung Hall, SM Aura, Bonifacio Global City, Taguig City attended by Mayor Lani Cayetano, Senator Allan Peter Cayetano, DOST-SEI OIC Dir. Elizabeth A. Fontanilla and MTG Officials.

Elementary and high school students who garnered medals in international science and math competitions proudly show their YES medals awarded by DOST Undersecretary Fortunato T. de la Peña.

YOUTH EXCELLENCE IN SCIENCE (YES) AWARDS

The YES Award is a DOST institutional award for exemplary achievement of the youth in the fields of science and mathematics and comes in the form of a medal of distinction awarded by the Secretary of Science and Technology or the DOST Regional Director in a fitting ceremony toward the end of each year. The YES Medal signifies DOST's high regard for excellence and competitiveness through the distinguished achievements of young Filipinos in international science and mathematics competitions.

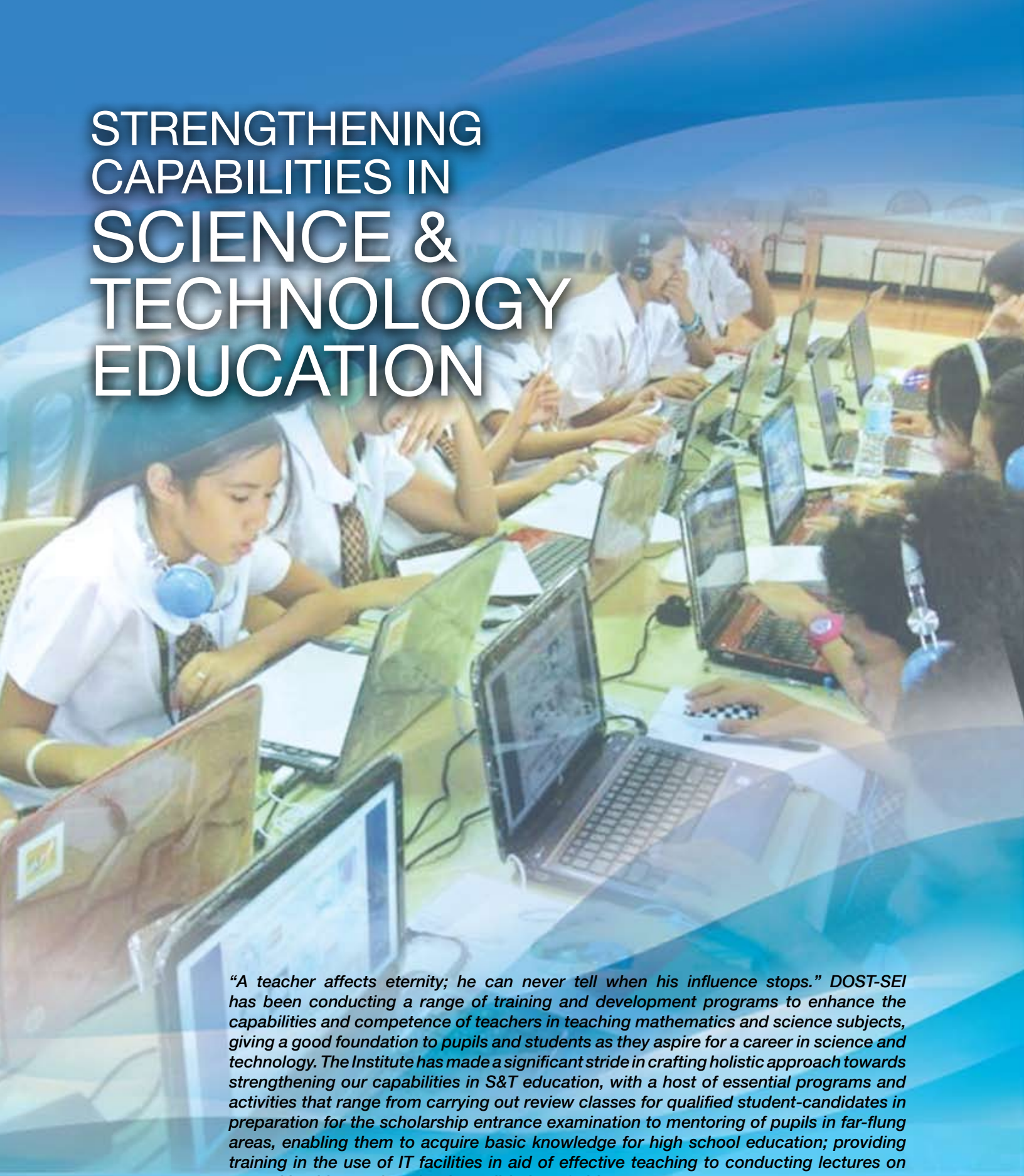
In 2013, a total of 447 students from 126 schools, who won in international science and mathematics competitions were awarded with YES medals during the YES Awarding ceremonies held at UP NISMED Auditorium on 20 February 2014. There were 277 awardees from NCR and 170 from the regions, a first in the recognition program's history that the number of awardees reached over 400.

The YES Award is conferred to winners of international science and mathematics competitions that have been duly registered with DOST-SEI by national organizers such as Mathematics Trainer's Guild (MTG) Philippines, Mathematical Society of the Philippines (MSP), FELTA Multi-Media, Inc., and the Mathematics Development Academy of the Philippines (MDAP).

Table 9. Number of YES Awardees by Region

REGION	1	2	3	4A	5	6	7	9	10	11	CARAGA	NCR
NO. OF AWARDEES	26	6	13	40	5	29	13	18	6	5	9	277
TOTAL	170											277

STRENGTHENING CAPABILITIES IN SCIENCE & TECHNOLOGY EDUCATION



"A teacher affects eternity; he can never tell when his influence stops." DOST-SEI has been conducting a range of training and development programs to enhance the capabilities and competence of teachers in teaching mathematics and science subjects, giving a good foundation to pupils and students as they aspire for a career in science and technology. The Institute has made a significant stride in crafting holistic approach towards strengthening our capabilities in S&T education, with a host of essential programs and activities that range from carrying out review classes for qualified student-candidates in preparation for the scholarship entrance examination to mentoring of pupils in far-flung areas, enabling them to acquire basic knowledge for high school education; providing training in the use of IT facilities in aid of effective teaching to conducting lectures on natural health practices for the well-being of older persons.

ENHANCING THE QUALITY OF FEEDERS

2013 ENRICHMENT PROGRAM TO IMPROVE THE QUALITY OF FEEDERS TO THE S&T HUMAN RESOURCE DEVELOPMENT

The enrichment program is a review class offered to the top 5% of fourth year high school students in various clusters of municipalities/schools nationwide, conducted in selected review centers to prepare them for the 2014 S&T Undergraduate Scholarship Examination. During the review sessions, review materials entitled, "Syensiyabilidad" were provided to the participants and mentors coming from selected universities. It was conducted from July to September 2013 in Regions II, III, IVB, V, XI and CAR. The mentors were faculty members from the identified partner universities. It was attended by 303 fourth year students coming from fifty-four (54) selected schools from 45 municipalities.

Students attending a review class for the Enrichment Program to Improve the Quality of Feeders to S & T Human Resource Development conducted at Malinta, Davao del Sur in July - September 2013.

Table 10. List of Participating Schools/Municipalities and Number of Reviewees for the Enrichment Program

Region and Review Center	List of Participating Schools	Municipality	No. of Reviewees	No. of Participating Schools
CAR St. Mary's University Bayombong, Nueva Vizcaya	Rufino Chungalao Science High School	Aguinaldo, Ifugao	6	1
	Haliap National High School	Asipulo, Ifugao	6	2
	Asipulo National High School			
	Ifugao Provincial Science High School	Hungduan, Ifugao	6	1
	Hapid National High School - Annex	Lamut, Ifugao	3	1
	Ayangan National Agricultural Vocational High School	Lagawe, Ifugao	5	2
	Caba National High School			
	Kiangan National High School	Kiangan, Ifugao	4	1
Subtotal		6	30	8
II St. Mary's University Bayombong, Nueva Vizcaya	Sta. Cruz Pingkian High School	Kayapa, Nueva Vizcaya	6	2
	Kayapa High School			
	Munguia National High School	Dupax del Norte, Nueva Vizcaya	7	2
	Dupax del Norte National High School			
	Tuao High School	Bagabag, Nueva Vizcaya	9	2
	Bagabag National High School			
	Ambaguio High School	Ambaguio, Nueva Vizcaya	3	1
	Sta. Fe National High School	Sta. Fe, Nueva Vizcaya	5	1
	Bascaran National High School	Solano, Cagayan	2	1
	Quezon National High School	Quezon, Nueva Vizcaya	5	1
	Alfonso Castaneda National High School	Alfonso, Castaneda, Nueva Vizcaya	6	1
Subtotal		8	43	11

III Central Luzon State University City of Muñoz	Agbannawag National High School	Rizal, Nueva Ecija	5	1
	Aliaga National High School	Aliaga, Nueva Ecija	5	1
	Andres Bonifacio National High School	Llanera, Nueva Ecija	5	1
	Bartolome Sangalang National High School	Guimba, Nueva Ecija	5	1
	Eduardo L. Joson Memorial High School	Quezon, Nueva Ecija	5	1
	Gen. Mamerto Natividad High School	Gen. Mamerto Natividad, Nueva Ecija	5	1
	Nampicuan National High School	Nampicuan, Nueva Ecija	5	1
	Sta. Maria National High School	Licab, Nueva Ecija	5	1
	Sto. Rosario National High School	Sto. Domingo, Nueva Ecija	5	1
	Talugtog National High School	Talugtog, Nueva Ecija	5	1
Subtotal		10	50	10
IVB-MIMAROPA Palawan State University	Rio Tuba National High School	Bataraza, Palawan	10	1
	Abo-Abo National High School	Sofronio, Espanola, Palawan	5	2
	Pulot National High School		1	
	Quezon National High School	Quezon, Palawan	28	1
	Brooke's Point National High School	Brooke's Point, Palawan	12	1
	Narra National High School	Narra, Palawan	21	2
	Dumanguena National High School		1	
Subtotal		5	78	7
V Catanduanes State University Virac, Catanduanes	Bagamanoc Rural Development High School	Bagamanoc, Catanduanes	1	1
	Bato Rural Development High School	Bato, Catanduanes	2	2
	Cabugao Intergrated School			
	Catanduanes National High School	Virac, Catanduanes	27	1
	San Andres Vocational School	San Andres, Catanduanes	9	1
	San Miguel Rural Development High School	San Miguel, Catanduanes	5	1
	Viga Rural Development High School	Viga, Catanduanes	4	1
Subtotal		6	48	7
XI Ateneo de Davao University Davao City	Basiawan National High School	Sta. Maria, Davao del Sur	5	2
	Heracleo Cascao Memorial National High School		3	
	Benjamin V. Bautista Special High School	Malita, Davao del Sur	6	3
	Mariano Peralta National High School		8	
	Tubalan Comprehensive National High School		5	
	Don Marcelino National High School	Don Marcelino, Davao del Sur	6	3
	Lawa National High School		3	
	Felipe-Inocencia Deluao National High School	Kiblawan, Davao del Sur	3	1
	Sulop National High School	Sulop, Davao del Sur	7	1
	Davao del Sur School of Fisheries	Malalag, Davao del Sur	4	1
	Jose Abad Santos National High School	Jose Abad Santos, Davao del Sur	2	1
Subtotal		7	50	11
Grand Total		45	303	54

The project was successfully implemented with the partnership of DOST Regional Offices No. I, II, III, V, X1, CAR and the cooperating institutions namely: Saint Mary's College, Central Luzon State Universities, Palawan State University, Catanduanes State University, and Ateneo de Davao University. Of the 303 students who attended the review sessions, 283 students took the 2014 DOST-SEI Undergraduate Scholarship Examination on 22 September 2013. Out of the 283 students who took the examination, 35 students qualified to the 2014 scholarship program.

MOVE ON: MINDANAO OPPORTUNITIES FOR VITALIZED EDUCATION AND ONWARD NURTURING 2013

Project MOVE ON is a two-year project that aims to extend the recently completed three-year project entitled, "Mindanao Opportunities for Vitalized Education and Upgrading of Science (MOVE UPS)". Through mentoring, the project hopes to continue nurturing pupils in Muslim dominated elementary schools for them to have a better chance at quality education starting with them qualifying in the National Competitive Examination (NCE) of the Philippine Science High School (PSHS) System and eventually enrolling in the PSHS Central Mindanao Campus (CMC) in Balo-i, Lanao del Norte. A total of 983 pupil-participants took the aptitude test to identify those who will attend the mentoring classes.

Potential MOVE ON participants in Lanao del Norte take the aptitude test to qualify for the mentoring classes.

Proctors, examiners, and mentors of MOVE ON from the PSHS CMC, MSU Marawi, MSU Maguindanao, DOST ARMM, DepEd Maguindanao II, and Cotabato City State Polytechnic College attending the mentoring classes.

BUILDING THE CAPACITIES OF SCIENCE AND MATHEMATICS TEACHERS

STRENGTHENING THE CAPACITY OF SCIENCE AND MATHEMATICS TEACHERS ON DISASTER RISK REDUCTION AND MANAGEMENT (DRRM)

A three-day seminar workshop that aims to increase the awareness of science and mathematics teachers on natural disasters and disaster management was conducted in the months of April and May 2013 in four provinces identified by the Office of Civil Defense as frequently visited and/or at risk to disasters. These are: La Trinidad, Benguet; Catbalogan, Western Samar; San Mateo, Rizal; and Butuan City, Agusan del Norte. Resource persons were experts from PHIVOLCS, PAGASA, DOST, Mines and Geosciences Bureau (MGB), and Office of Civil Defense(OCD).

Teachers presenting their outputs on the typhoon tracking exercise.

A total of 189 science and mathematics teachers (in the elementary, HS and tertiary levels) attended the training seminar in the following sites and dates as shown on Table 11.

Table 11. Disaster Risk Reduction and Management (DRRM) Workshop

Training Venue	Dates of Training	Number of Participants
Caraga State University Ampayon, Butuan City	April 16-18, 2013	51
Regional Educational Learning Center Marikina City	April 23-25, 2013	47
Benguet State University La Trinidad, Benguet	May 7-9, 2013	40
Samar State University Catbalogan City, Samar	May 21-23, 2013	51

STRENGTHENING THE CAPACITY OF FUTURE PILLARS OF SCIENCE AND MATHEMATICS EDUCATION

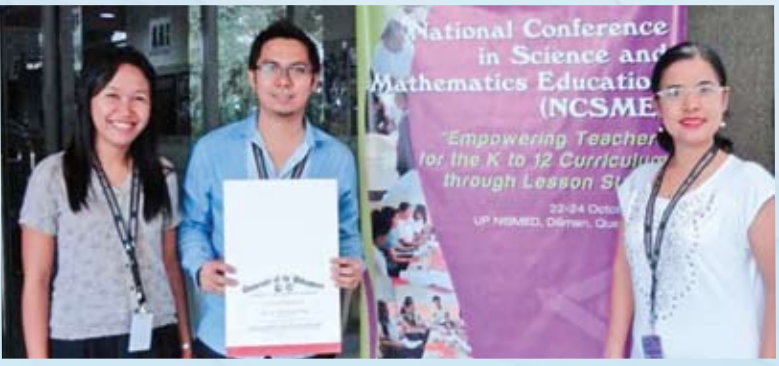
A two-day seminar dubbed as A.R.I.S.E. (Accelerating Research Initiatives for Science Education) held on 7-8 March 2013. Faculty members from 10 Centers of Development and Teacher Education Institutes, were trained to package research proposals for funding.

The top three research proposals were awarded P100,000.00 each as grant for the implementation of their research. After completion of their research, the project leader presented the paper at the "National Conference in Science and Mathematics Education" held at the UP NISMED on 22-24 October 2013.

Table 12. Science Education Research Proposals Provided with Research Grants

1. Vincent Theodore M. Balo	Cebu Normal University Cebu City	"The Dynamics of Teaching the Addition of Dissimilar Fractions in Fifth Grade Large Classes"
2. Charity Rose B. Absin, Ph.D.	Xavier University Cagayan de Oro City	"Developing Scientific Inquiry-based Teaching Skills of Pre-service Teachers in Xavier University through Lesson Study"
3. Ana E. Miraña	Central Bicol State University Pili, Camarines Sur	"Effects of Lesson Study in Developing Science Culture in the Philippine Public Schools"

The research team of Central Bicol State University of Agriculture.



The research team of Cebu Normal University.

SEMINAR ON ASIAN HEALTH PRACTICES FOR SCIENCE AND MATHEMATICS TEACHERS

As a commitment of the Institute to address the welfare of older persons as contained in the Philippine Plan of Action for Senior Citizens (PPASC), and in the GAA 2013, a two-day seminar was held on Asian Health Practices for science and mathematics teachers who are aged 60 years old and above of the division of Taguig and Pateros last 12-13 August 2013 at DOST Executive Lounge, Bicutan Taguig City.

Lectures and demonstrations on various Filipino and Chinese health practices were facilitated by notable experts, Dr. Teresa Ludovice-Yap, former dean of UERM Memorial Medical Center Graduate School, and Dr. Antonio Nemesio, medical consultant at St. Luke's Medical Center Pain Management Center. Other resource persons and their topics were the following:

Table 13. Resource Persons and their Topics on Asian Health Practices Seminar

NAME	TOPIC
Ms. Remedios Guerrero Department of Health	State of Health of the Older Persons
Ms. Marietta Bumanglag, Food & Nutrition Research Institute, DOST	Food for Older Persons with Cooking Demo
Mr. Efren N. Guanzon Licensed Massage Therapist	Traditional Filipino Medicine and Herbology

DOST scholar graduates of MS Asian Health Practice, namely Mac Gerald Cueto, Ferdinand Dayro, Arnel Belenzo (also Certified Acupuncturists) demonstrated acupuncture, moxibustion, while Ms.Vivencia de Villa demonstrated ventosa cupping and deep tissue massage to participants.

For two years, the potential of Asian Health practices as treatment for disease conditions was put forward and in turn well appreciated by older persons. Projects for older persons will be continuously implemented as recommended in the GAA 2013.

Mr. Efren Guazon demonstrating Hilot with ventosa cupping.

TEACHER ACADEMY FOR SCIENCE EDUCATION

This is a structured pool of capacity building opportunities, technical services , research and development efforts designed for teachers to bring about an improvement in the teaching and learning of science. The year was devoted to "Laying the Groundwork of the Academy," thus a Framework Development Workshop was held on 28-29 August 2013 to be able to plan for the structure, services and organization of the Teacher Academy.

Participants of the Framework Development Workshop for Teacher Academy held at Hotel Kimberly in Tagaytay. First Row (sitting): JC Cerda, SEI Director Dr. Filma Brawner, Ms. Cynthia Gayya, Ms. Lilia Lauron, PSHS Executive Director Dr. Josette Biyo. Standing (L to R): PNU Dean Dr. Leticia Catris, DepEd Specialist Ms. Bella Mariñas, Ms. Imelda Sario, Ms. Liezl de Lara, PASUC Exec Director Dr. Herbert Glenn Reyes, I.T. Consultant Mr. Clement Rasul, and SEI Deputy Director Ms. Ma Teresa de Guzman.

iTEACH MATH (IMPROVING TECHNOLOGY-ENHANCED ACTIVITIES FOR CREATIVE HONING OF MATHEMATICS SKILLS)

The training of teachers on Grade I Mathematics Courseware was conducted in six (6) clusters as shown in Table 14. The training was conducted by Mathematics experts from UPNISMED as commissioned by DOST-SEI to the Foundation for the Promotion of Science and Mathematics Education and Research (FPSMER, Inc).

PROJECT HOTS (HANDS-ON TEACHING AND LEARNING OF SCIENCE THROUGH INQUIRY)

The project developed and implemented a model of teaching Grade III Science using the inquiry approach with hands-on learning activities, integration of technology, and the use of a mobile science laboratory. This was pilot-tested in two Grade III classes in three elementary schools in Taguig City, namely: Upper Bicutan Elementary School; R.P. Cruz Elementary School; and Tenement Elementary School The following activities were carried out achieving significant accomplishments on the project:

- Conducted training to develop inquiry-based science activities by NISMED technical staff on 15-17 May 2013 at UP NISMED;
- Conducted training workshop on the use of the mobile science lab, basic science equipment & ICT devices by PNU subject specialists on 22-24 May 2013 at DOST-SEI;

Teachers from Tenement Elementary School collaborated on the development of materials during the "Development of Inquiry-Based Science Activities Seminar-Workshop" held at University of the Philippines – National Institute for Science and Mathematics Education Development (UP NISMED) on 15-17 May 2013.

Table 14. iTeach Math Trainings Conducted

Training Dates	Training Venue	Regions Included	Targeted Number of Participants	Actual Number of Participants
July 25 – 27, 2013	Baguio City	1, 2, CAR	90	82
August 1 – 3, 2013	NISMED	NCR	40	38
August 29 – 31, 2013	Cebu City	7, 8, 9	100	93
	Iloilo City	6	50	50
September 12 – 14, 2013	Davao City	11, 12, 13	120	111
September 26 – 28, 2013	NISMED	3, 4A, 4B, 5	120	116
November 7 – 9, 2013	Cagayan de Oro City	10, 12 ARMM	80	75
Total			600	565

A pupil of Tenement Elementary School, Taguig City answers the assessment test after doing the hands-on activity on "Sense of Hearing" lesson during the second monitoring visit.

Teachers from Tenement Elementary School, Taguig City measure the weight of a coin using the triple-beam balance during the training-workshop on the "Utilization of Science Equipment and ICT Devices" held at the Science Education Institute on 22 May 2013.

Dr. Filma Brawner, DOST-SEI Director cuts the ribbon during the ceremonial turn-over of the Mobile HOTS on 22 May 2013 with representatives from the three recipient-schools and Dr. Leticia Andor (2nd from left),Education Program specialized of the DepEd Division of Taguig-Pateros.

- Sharing of mobile science laboratory, basic science equipment, ICT devices including Smart Bro, science books and references to the three pilot schools in June 2013;
- Conducted follow-through activities in June and July 2013; and
- Sharing of experiences by the teachers involved in the follow-through activities during the National Conference in Science and Mathematics Education on 22-24 October 2013 at the NISMED, UP, Diliman, Quezon City.

During the classroom observations of teachers using inquiry-based approach, it was observed that the teachers have the tendency to go back to using the method they were familiar with before the training on new model of teaching. It was also observed that the teachers need training on the constructivist philosophy of teaching and learning as well as on the different methods of assessing student learning. To gain greater knowledge, deeper insights, and better appreciation of scientific principles, DOST-SEI is moving further ahead by implementing other activities on the project, which include training and monitoring of teachers.

CAPACITY BUILDING AND DEVELOPING GLOBAL COMPETITIVENESS IN SCIENCE EDUCATION

The project is composed of various activities of the Science Education and Innovations Division (SEID), with the purpose of enhancing the competence and professional skills of Science and Mathematics teachers, and to keep up with the fast-changing world of science and mathematics education.

The tie-up with reputable local and international educational institutions creates greater opportunities for dynamic and fruitful exchanges of intellectual knowledge and collaborative teaching and research activities, contributing significantly to raising the quality of education from elementary to tertiary levels, which ultimately redounds to a globally competitive human resources in the field of science and mathematics.

Under this project, Specialized Training Programs were conducted by different institutions and organizations with financial support from DOST-SEI.

Condensed Matter Physics Laboratory (CMPL) Superconductor 2013 Summer Immersion Program

The 2013 Summer Immersion Program was conducted by the CMPL at the National Institute of Physics, UP Diliman, Quezon City on 8 April to 24 May 2013, aimed at providing the opportunity for students to gain actual scientific research experience and mentored hands-on laboratory training, in support of their intellectual and professional development. The Program was made possible through a grant by DOST-SEI for laboratory chemicals, supplies and materials, board and lodging, relocation allowance and transportation expenses of the participants.

The students underwent intensive training and exposure in experimental research activities on various laboratory facilities such as AC Magnetic Susceptometer, Atomic Force Microscope, Ceramic Materials Sample Preparation Facility, Magneto-Transport Apparatus, Scanning Electron Microscope, X-ray Diffractometer, and Zinc Oxide Material Sample Preparation Facility.

Students in the Summer Immersion Program discussing observations in experimental research activities.

The activities include workshops, enrichment sessions, work assignments, preparation of weekly progress reports and oral presentation of final report by each student to peers and CMPL mentors. The final reports were then submitted to CMPL Supercon. The mentors from CMPL were responsible for teaching the students proper laboratory procedures and professional work ethics, with the hope of instilling a culture of scientific research and inspire the pursuit of advanced studies.

Chemcamp 2013

The ChemCamp summer enrichment program aims to provide training to incoming senior high school students with high aptitude in the sciences. It is specifically intended to give a comprehensive view of the major fields of chemistry and to demonstrate their relevance to human life and society; to enhance the appreciation of chemical principles in looking at ordinary things and events; to promote a better understanding of chemistry as an experimental science; and to develop basic laboratory skills and data management.

The program was conducted at the Science Education Complex, Ateneo de Manila University on 15 April to 2 May 2013, participated in by 67 students from various high schools around Metro Manila. The activities involved four modules, namely: (1) Changes in Matter - An Introductory Module, (2) Analytical Chemistry Module, (3) Organic Chemistry Module, and (4) Materials Chemistry Module.

Lecture-Workshop On Research Methods In Physiology And Developmental Biology

The Lecture-Workshop is aimed at building the interest of students in the sciences, with the purpose of creating greater prospects of increasing the pool of S&T human resources in the country, especially with the launch of DepEd's K to 12 program. The workshop will help secondary school teachers in nurturing talented and motivated students in the biological sciences. A total of 22 participants attended the workshop: 16 from science and national high schools in Metro Manila, one from Pampanga, three from the Visayas, and two from Mindanao.

Secondary teachers from different schools attending the lecture-workshop.

INNOVATING SCIENCE AND MATHEMATICS TEACHING AND LEARNING

DEVELOPMENT OF INTERACTIVE SCIENCE AND MATHEMATICS COURSEWARE FOR SECONDARY SCHOOLS

In 2013, the DOST-Advanced Science and Technology Institute (ASTI), through funding from DOST-SEI, finalized the digitization of the twenty remaining modules in Biology. The said modules, together with the 98 modules developed in 2012, will be formally launched for roll-out in June 2014. DOST-SEI also conducted the User Acceptance Testing (UAT) of the Interactive Science and Mathematics Courseware for Secondary-Level Schools from July to October 2013, to assess the acceptability and appropriateness of the digitized lessons to the First year high school students. The result helped the project team in determining the necessary modifications, enhancements, and further development of the courseware.

A group of students taking the User Acceptance Testing (UAT) of the Interactive Science and Mathematics Courseware for Secondary-Level Schools, administered in 2013 to a total of 250 second year students from ten high schools.

TECHNOLOGY PACKAGE FOR STUDENT LEARNING EMPOWERMENT: DEVELOPMENT AND PILOT TESTING OF GRADES 2 TO 6 MATHEMATICS COURSEWARE

After the successful conduct of the Pilot Testing of Grade 1 Mathematics Courseware in 2012 in selected elementary schools in different regions nationwide, a roll out project entitled "Improving Technology-Enhanced Activities for Creative Honing of Mathematics Skills" (iTEACH) was conducted from July to November 2013.

This is a project of the DOST-SEI in cooperation with UPNISMED, ASTI, DepEd and PCIEERD which aim to enhance the content knowledge, pedagogical capacity and critical thinking skills of the teachers in teaching Grade 1 Mathematics and ultimately improve the learning and performance of students using the Mathematics courseware.

To complete the package, UPNISMED was again tapped to continue with the preparation of lessons, writing of scripts and preparation of storyboard for Grades 2 to 6 Mathematics Courseware under the project entitled Technology Package for Student Learning Empowerment: Development and Pilot Testing of Grades 2 to 6 Mathematics Courseware.

Likewise, ASTI was also involved to develop and digitize the lessons prepared by UPNISMED. From July to December 2013. Initially, the scriptwriting, editing, finalization and digitization of the first batch of the following 24 lessons for Grades 2 to 6 Mathematics were finished in 2013.

Table 15. Digitized Lessons for Grades 2 to 6 Mathematics Courseware Completed in 2013

Grade Level	Topic
2	Tesellating Triangles and Squares
3	Tesellating Triangles and Squares and Hexagons
3	Patterns in Bracelet Making
4	What Number is Missing?
5	What's Your Strategy for Multiplying Decimals?
6	Partitive Proportion
6	Inverse Proportion
6	Direct Proportion
2	Concept of Area
2	Presenting Data in Pictograph
4	Finding the Perimeter of a Rectangle
4	Finding the Area of an Irregular Plane Figure
4	Representing and Interpreting Data in a Bar Graph
5	Percent and its Relationship to Ratio, Fraction, and Decimal
6	Solving Problems Involving Percent
6	What is the Expression?
4	Finding the Area of a Trapezoid
5	Finding the Area of a Circle
5	Reading and Interpreting Data in a Line Graph
5	Volume of a Cube and a Rectangular Prism
6	Surface Area of a Cube and a Rectangular Prism
6	Determining Percent of Increase or Decrease
6	Representing and Interpreting Data in a Circle Graph
6	Making Simple Predictions (Probability)

MOBILE IT CLASSROOM (MITC) PROJECT

To expose the teachers and students to the state-of-the-art education technology and promote appreciation of information and communication technology (ICT) as a tool for teaching and learning science and mathematics in areas where there are no ICT facilities, the DOST-Science Education Institute (SEI) is continuously implementing the "Mobile IT Classroom (MITC) Project". To date, three (3) MITC buses are currently deployed at the provinces of Cebu, Camarines Norte, and Surigao del Norte.

The other MITC bus with plate number SGJ 141 that is currently deployed at Camarines Sur was used to train a total of 48 Elementary school teachers and 252 pupils in 5 elementary schools in Tigaon and Goa, Camarines Sur in March 2013. However, starting April up to December 2013, the Partido Development Administration (PDA) conducted the maintenance of the MITC bus and repair of some of its facilities (e.g. laptop computers, etc.).

The MITC bus currently deployed in Cebu.

Table 16. Beneficiaries of MITC Bus Deployed in Surigao del Norte

No.	Districts	Elementary				Secondary			
		Pupils	Teachers	Administrators	Facilitators	Students	Teachers	Adminis trators	Facilitators
1	Anaoaon	2,200	108	12	6	840	30	2	2
2	Alegria	51	51	10	6	50	45	1	6
3	Bacuag	250	50	15	6	60w	35	3	4
4	Claver	88	47	8	5	75	45	2	4
5	Gigaquit	120	100	12	5	52	14	2	3
6	Malimono	448	20	16	6	192	50	6	2
7	Mainit I	516	69	10	5	56	52	3	2
8	Mainit II	210	30	10	10	60	45	2	3
9	Placer I	125	35	10	6	60	45	3	3
10	Placer II	272	32	10	5	70	42	1	4
11	Sison	54	74	10	3	133	26	3	3
12	SNNHS	-	-	-	-	0	50	1	4
13	Taganaan	326	52	15	10	50	30	3	2
14	Tubod	288	64	16	8	256	12	2	4
TOTAL		4,948	732	154	81	1,954	521	34	46

2ND SEARCH FOR INNOVATIVE PRACTICES IN MANAGING LARGE CLASSES FOR EFFECTIVE TEACHING AND LEARNING OF SCIENCE AND MATHEMATICS

This is a nationwide search for innovative practices in managing large and extra large classes that would result to effective teaching and learning of science and mathematics. The quest is open to all public and private high schools with large (L) and extra large (XL) classes. A large class has a class size of 51 to 70 students while an extra large class has a class size of 71 and above. Generally, the search aims to select the best two (2) innovative classroom practices for managing large classes. In May 2013, there were 16 project proposals submitted for evaluation, out of which nine were qualified as finalists during the first quarter of SY 2013-2014. The nine proposals were pilot-tested in the respective schools. The revised and finalized innovations were implemented for evaluation from the second to the third quarters of the school year.

The monitoring visits were conducted to see how the innovations were implemented and how they affect students' learning. Monitors were subject specialists from the University of the Philippines National Institute for Science and Mathematics Education Development (UPNISMED), Philippine Normal University (PNU), Department of Education (DepEd), Network of Outstanding Teachers and Educators (NOTED), and National Association of Secondary Schools of the Philippines (NASSPHIL).

A large class at Surigao City NHS, Surigao del Norte discussed the topic on "Typhoons" during the monitoring visit on 12-13 of September 2013.

Ms. May Chavez (UPNISMED), a member of the monitoring team interviews the students from Surigao City NHS, Surigao del Norte.

DEVELOPING S&T CAREERS TOWARDS GLOBAL COMPETITIVENESS, NATIONAL PRODUCTIVITY AND DEVELOPMENT

In August 2012, DOST-SEI entered into a Memorandum of Agreement with the Business Processing Association of the Philippines (BPAP) on the project: "Developing Science and Technology Career towards Global Competitiveness, National Productivity and Development." The general objective was to develop a pool of qualified and competent S&T human resources for the IT-BPO sector.

This involved identifying and addressing key competency gaps primarily among graduating DOST-SEI scholars and other S&T graduating students in selected schools. The project also entailed developing a critical mass of teachers with IT-BPO competencies who will continue to teach science and technology scholars and non-BPO experienced students to the standards that the BPO requires.

For this purpose, the project used the Global Competitiveness Assessment Tool (GCAT) and the Advanced English Pre-employment Training (AdEPT). In 2013, out of 19 selected Higher Education Institutions (HEIs), ten schools participated in the project. By the end of the year, 42 teachers have been certified to AdEPT program, 80 students have enrolled in AdEPT classes, and 2,517 students have taken GCAT.

RESEARCH ON S&T HUMAN RESOURCES AND EVALUATION OF DOST-SEI PROJECTS

HUMAN RESOURCES IN SCIENCE AND TECHNOLOGY (HRST) IN THE PHILIPPINES

The Organization for Economic Co-operation and Development or OECD (2000) in its paper entitled: **"Mobilizing Human Resources for Innovation"** has stated it well and it is worth-quoting: *"Human capital, especially in science and technology, is of growing importance for innovation and technology-led economic growth. In the new economy where knowledge is the source of wealth creation, human capital becomes as important as financial capital."*

This is a benchmark study on establishing estimates of the stock of Human Resources in Science and Technology (HRST) in the country using secondary data from Census and Labor Force Survey (LFS) conducted by the National Statistics Office (NSO). Preliminary results are summarized in Figures 1-4 and Tables 17-19.

MIGRATION OF S&T HUMAN RESOURCES: PERMANENT AND TEMPORARY MIGRATION

This is a two-component study on migration: 1) Emigration of Science and Technology-Educated Filipinos (Permanent Migrants); and 2) OFWs with S&T occupations (Temporary Migrants). Secondary data from POEA for the temporary migrants and CFO for permanent migrants will be utilized in the study.

The purpose of the study is to make an updated accounting of S&T Filipino migrants, both temporary and permanent. The main objective is to determine the extent of S&T skills migration as it affects the country's human resources in S&T. SEI has conducted a meeting with CFO personnel regarding the project and updated the CFO database with 2012 data on emigrants. The study is scheduled to be completed and published in 2015.

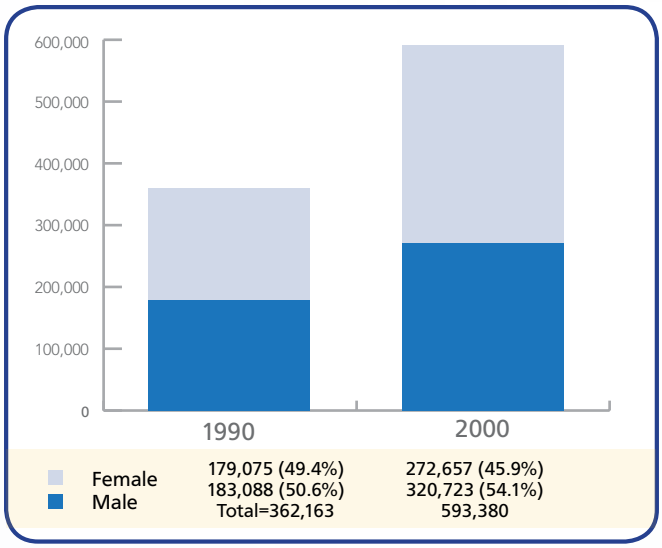


Figure 1. Distribution of HRST by Sex

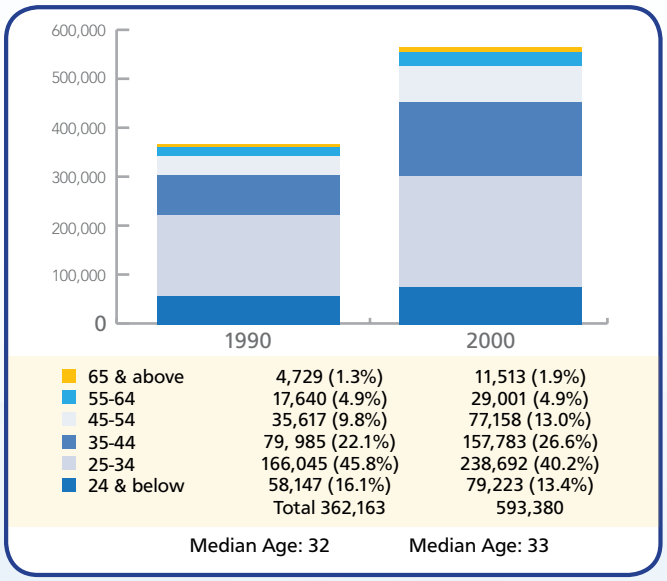


Figure 2. Distribution of HRST by Age Group

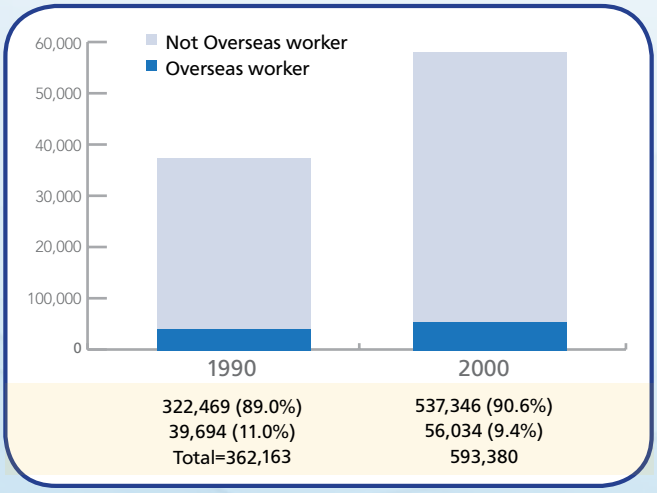


Figure 3.Distribution of HRST by Overseas Work Status

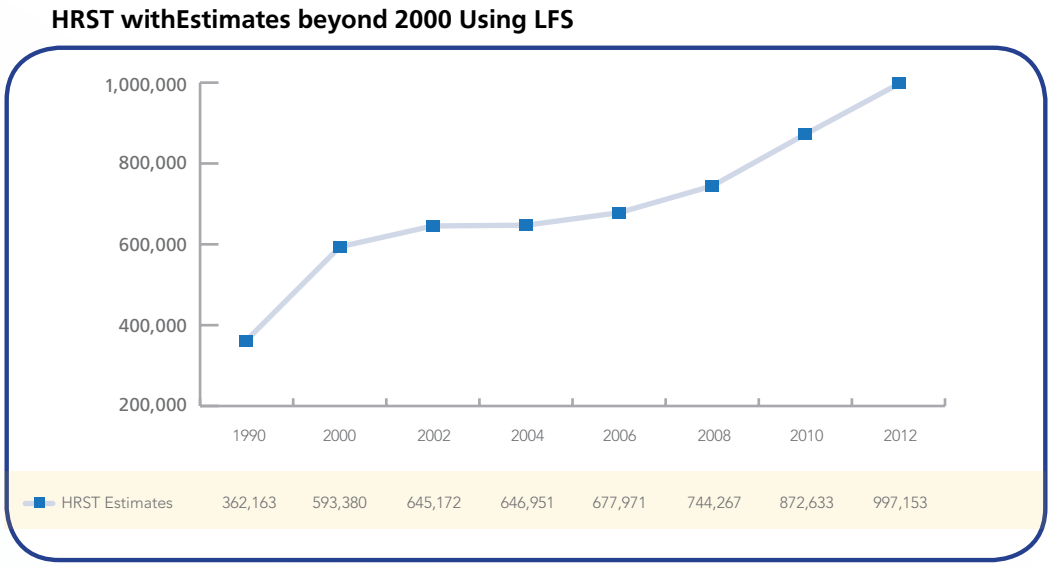


Figure 4. HRST with Estimates beyond 2000 Using LFS by Selected Years

By Region

Table 17. Distribution of HRST by Region and Percent Change from 1990 to 2000

Region	1990		2000		Percent Change
	f	%	f	%	
Philippines	362,163	100.0	593,380	100.0	63.8
NCR	127,265	35.1	181,354	30.6	42.5
CAR	8,438	2.3	12,026	2.0	42.5
Region I	16,387	4.5	26,820	4.5	63.7
Region II	9,020	2.5	14,229	2.4	57.7
Region III	35,509	9.8	67,694	11.4	90.6
Region IV-A	44,657	12.3	93,625	15.8	109.7
Region IV-B	5,901	1.6	8,510	1.4	44.2
Region V	13,166	3.6	19,206	3.2	45.9
Region VI	22,407	6.2	36,344	6.1	62.2
Region VII	22,093	6.1	39,930	6.7	80.7
Region VIII	9,245	2.6	14,736	2.5	59.4
Region IX	7,812	2.2	12,673	2.1	62.2
Region X	8,822	2.4	14,831	2.5	68.1
Region XI	14,726	4.1	25,416	4.3	72.6
Region XII	6,015	1.7	13,076	2.2	117.4
CARAGA	6,594	1.8	8,991	1.5	36.3
ARMM	4,106	1.1	3,919	0.7	-4.5

By S&T Occupations and by Sex

Table 18. Distribution of HRST by S&T Occupations by Sex and Percent Change from 1990 to 2000

S&T Occupation	1990		2000		1990-2000 Percent Change	
	Male	Female	Male	Female	Male	Female
Physicists, chemists and related professionals	4,764 (46.9)	5,386 (53.1)	8,353 (49.1)	8,664 (50.9)	75.3	60.9
Mathematicians, statisticians and related professionals	3,024 (42.7)	4,052 (57.3)	2,661 (47.7)	2,919 (52.3)	-12.0	-28.0
Computer professionals	8,737 (55.3)	7050 (44.7)	36,875 (54.3)	30,988 (45.7)	322.1	339.5
Architects and related professionals	10,618 (84.5)	1,950 (15.5)	15,312 (79.1)	4,057 (20.9)	44.2	108.1
Engineers and related professionals	107,269 (90.6)	11,076 (9.4)	174,542 (84.8)	31,233 (15.2)	62.7	182.0
Life science professionals	10,112 (69.7)	4,406 (30.3)	13,235 (67.6)	6,341 (32.4)	30.9	43.9
Health professionals (except nursing)	32,223 (37.3)	54,120 (62.7)	48,389 (39.8)	73,309 (60.2)	50.2	35.5
Nursing and midwifery professionals	6,341 (6.5)	91,035 (93.5)	21,356 (15.6)	115,146 (84.4)	236.8	26.5
TOTAL	183,088 (50.6)	179,075 (49.4)	320,723 (54.1)	272,657 (45.9)	75.2	52.3

( ) = percent in row

By S&T Occupations and by Overseas Work Status

Table 19. Distribution of OFWs by S&T Occupations and Percent Change from 1990 to 2000

S&T Occupation	1990				2000				1990-2000 % Change
	OFWs	% in col.	% in row	N	OFWs	% in col.	% in row	N	
Physicists, chemists and related professionals	449	1.1	4.4	10,150	943	1.7	5.5	17,017	110.0
Mathematicians, statisticians and related professionals	146	0.4	2.1	7,076	117	0.2	2.1	5,580	-19.9
Computer professionals	1,786	4.5	11.3	15,787	5,304	9.5	7.8	67,863	197.0
Architects and related professionals	1,065	2.7	8.5	12,568	1,540	2.7	8.0	19,369	44.6
Engineers and related professionals	14,686	37.0	12.4	118,345	22,082	39.4	10.7	205,775	50.4
Life science professionals	454	1.1	3.1	14,518	542	1.0	2.8	19,576	19.4
Health professionals (except nursing)	4,113	10.4	4.8	86,343	5,566	9.9	4.6	121,698	35.3
Nursing and midwifery professionals	16,995	42.8	17.5	97,376	19,940	35.6	14.6	136,502	17.3
TOTAL	39,694	100.0	11.0	362,163	56,034	100.0	9.4	593,380	41.2

EVALUATION RESEARCH ON SELECTED DOST-SEI PROMOTION PROJECTS

Selected projects of S&T were evaluated to provide data on how they can be improved for future implementation.

Geo-Marine Science Camp 2013

Eight out of ten campers rated their over-all experience at the Camp as at least met their expectations: 64.8% rated well above expectations, 20.4%, above expectations and 3.7%, met expectations. More than half of the student-campers (67%) expressed their inclination to take up science courses such as Biology, Marine Science, Marine Biology, Geology and the like in college after the Camp.

Hyundai Innovation and Climate Science Summit

In general, the highest rated aspect is about the contribution to students' awareness, knowledge, and understanding about science, particularly climate change and other related topics. Climate change for teachers and Youtalk (Leadershift) were among the highly scored topics learned as assessed by the respondents. The highly rated activities were Ocean Streams and Coastal Adaptation. More than half of the respondents (both among students and teachers) rated the over-all experience in the Summit as well above expectation. There were seven (7) cases of student-respondents who changed their choice of college degree from non-S&T course to S&T course.

World Space Week 2013

Forum on "CanSatellite: Opportunity and Value for Education" and Hands-on Activities on Exploring Mars, Discovering Earth. Relatively low scores were given to the following statements: "The forum encouraged me to pursue a career in space science in the future," "The forum increased the level of my interest in Space Science," "All the equipment was working properly," "The keynote speaker ably answered the question(s) posed," and "The time allotted for the forum was just enough." Eight out of ten participants rated that the event met more than their expectations. In terms of open-ended comments and suggestions, thematic analysis showed that most of the written answers were positive remarks: 23 congratulatory/praise, five commendations, two gratitude, and three hoping-to-join-again comments.

Student Workshop on Water Boosted Rocket Making. In student workshop on water-boosted rocket-making, the highly rated factors were about facilitators being efficient, helpful, and accommodating, including appropriateness of the venue for the activity, and thorough grasp of the trainer on the subject.

Water Rocket-Launching Competition. Participants of the water rocket-launching competition gave a perfect rating (Very Much=3) to the statement: "The organizers secured the safety of participants during the competition proper." This was followed by the following statements with equal rating of 2.94: "The judges were fair in deciding the winners," "Allotted time for rocket making was sufficient," and "Group activity enhanced a sense of cooperation and unity among members." On the other hand, the lowest rated statement is about the clarity of guidelines of the competition.

Astronomy Teacher Training Program and Water-Boosted Rocket Making Workshop for Educators. Teacher-participants to the training gave perfect rating to the following statements: 1) I learned a lot from the training; 2)The facilitators were efficient helpful and accommodating; 3)The trainer had a thorough grasp of the subject; 4)The trainer actively invited questions; 5)The trainer answered the question(s) posed; and 6)The trainer came prepared for class.

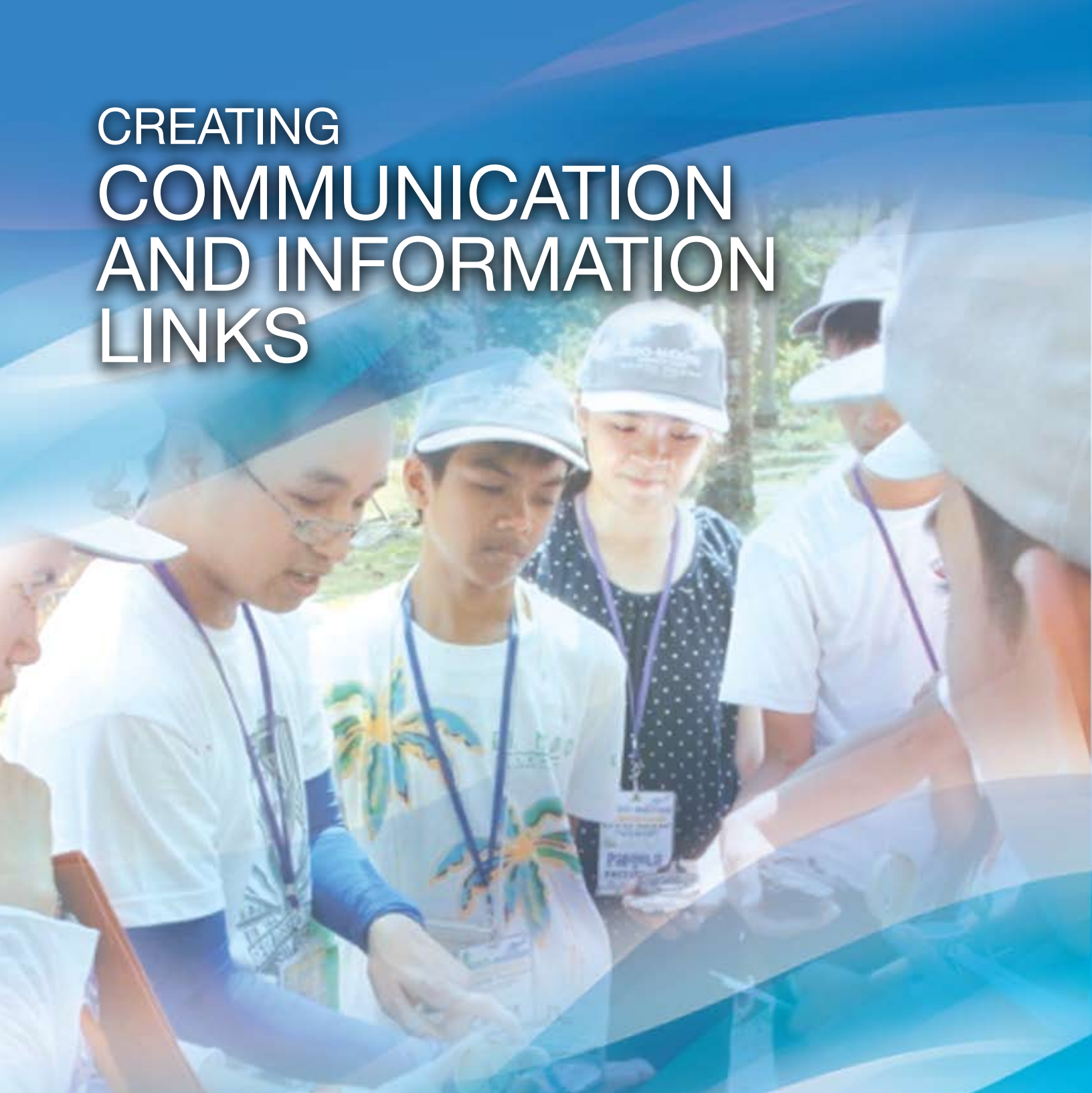
Tagisang Robotics 2013

In terms of over-all experience in the Tagisang Robotics, nine out of 10 respondents, both students and coaches, rated that the event met their expectations at least. In terms of the event components, the aspects rated as top five by the participants include (according to rank): sense of team spirit and esprit de corps; appropriateness of venue for the competition; safety/security provided by the organizers; performance of assigned roles; and organization of program/activities in the competition. Since one of the major objectives of this activity is to entice students to pursue Science careers, it is worth noting that there were twenty two (22) cases of students who changed their choice of college course to pursue from non-science course to science course.

Science Explorer

The students had a fun time doing the activities in the Science Explorer as shown by the high rating for Statement 1: "Nakatutuwa ang mga ginawa naming sa science explorer," 4.91, which is near the highest score of 5 (Strongly Agree). However, for both sexes, the least agreement was with Statement 4: "Nagkaroon ako ng interes na maging scientist o engineer baling araw," indicating that more efforts must be exerted to develop awareness and interest in science and mathematics. Moreover, the elementary students giving a higher score for Statement 4 than high school students also indicate that sustained effort must be made to maintain interest in science that was started at a young age.

CREATING COMMUNICATION AND INFORMATION LINKS



It is said that there are two kinds of knowledge: One is already knowing it, and the other is knowing where to get it. Getting knowledge or information may pose some difficulty in the past. But in today's modern age of computers, information can be obtained with just a click. Computers are important tools in education and practically in everything else. We are reaping the benefits of a great technology, and using it to our advantage in the pursuit of our own scientific and technological advancement. To achieve that purpose more efficiently and effectively, SEI has been continually improving its communication plans and upgrading its facilities to harness a strong connectivity and effective networks that greatly enhances its linkages with the various stakeholders of its programs.

DEVELOPMENT OF INFORMATION NETWORK SYSTEMS FOR THE IMPROVEMENT OF S&T EDUCATION LINKAGES

To enhance and improve its ICT facilities, DOST-SEI engaged the services of Radius Telecoms, Inc. to provide a 12-mbps internet connection. Wi-Fi access point was installed in the Institute's lobby to provide internet access for applicants while processing their documents. Additional six terabytes of hard disk capacity was acquired to allow extra storage in the Local Area Network. Two new multimedia workstations were acquired, establishing the Institutes self-reliance on photo and video editing requirements.

In line with the Institute's continuing technical skills improvement, the MIS unit has conducted a seminar on ICT Laws and Policies being implemented not only within the DOST but all over the country. The MIS unit also conducted an echo seminar on Procurement Planning and monitoring for all project leaders and staff. The MIS personnel attended the ICT Security Seminar conducted by the DOST-ICT Office in the latter part of the year. Technical support for IT network users of the Institute was continuously provided to ensure functional efficiency.

The MIS unit has likewise adopted the DOST-ICTO Government Website Hosting Service (GWHS) template to conform with government standards on using Content Management Systems (CMS) technology. It also continued to administer its websites such as www.sei.dost.gov.ph (the agency's corporate website, ensuring that it contains all information needed in accordance with DBM's Transparency Seal initiative; www.tagisangrobotics.ph (portal of the Tagisang Robotics project); and www.science-scholarships.ph (portal of the scholarship program of the agency).

MIS has likewise been involved in the functions of various committees, such as membership to the Webmasters' Consortium (DOST-WMC); the Bids & Awards Committee – Technical Working Group on ICT; the SEI's Inspection Committee for the inspection process of all purchases; and the Technical Evaluation Team for ICT-related purchases.

http://www.sei.dost.gov.ph/

http://tagisangrobotics.ph/

http://science-scholarships.ph/

REACHING OUT TO PROMOTE SEI PROGRAMS AND PROJECTS

Creating a critical pool of scientists and engineers who will propel the country's economy through research and development requires a steady stream of young science-inclined students armed with nationalism and exemplary scientific skills. To tap into this vast reservoir of potential scientists and engineers, DOST-SEI implements its Strategic Communication Plan for the Promotion of S&T HRD, Science Education and Youth Science Programs, an arsenal of communication strategies aimed at conquering the hearts and minds of the Filipino youth, leading them into STEM Careers and driving them into getting into the DOST Scholarship through media-based activities, special events and actual social networks.

For 2013, DOST-SEI was able to cover more bases as its projects, activities and programs got featured in major dailies, TV networks, radio stations, cyber media and social media. With 25 articles published and syndicated to various media outfits, it made 184 monitored placements being able to reach millions of Filipinos nationwide and worldwide.

DOST-SEI also participated in the 2013 National Science and Technology Week with the theme: "Science, Technology, and Innovation: The Road to a Smarter Philippines." Held at the SMX Convention Center on 23-27 July 2013, DOST-SEI was able to interact with 56,000 viewers of the exhibits.

During the NSTW celebration, DOST-SEI conducted the "Smarter Kids, Smarter Scientists" Competition at the Manila Ocean Park where students from different schools in Metro Manila and nearby provinces, together with their scientists teammates, played head-to-head with science-based challenges to be the winner. Around 700 students and teachers participated in the highly interactive fun competition.

Table 20. Winners of the Smarter Kids, Smarter Scientists Competition

Elementary Category	High School Category
Champion: Baclaran Elementary School	Champion: Ernesto Rondon High School
1st Runner Up: CP Sta. Teresa Elementary School	1st Runner Up: San Juan National HS
2nd Runner Up: Centex Manila	2nd Runner Up: Ma. Clara HS
Consolation Prizes: Silahis ng Katarungan Special School and Pamplona ES	Consolation Prizes: Pateros HS and Krus na Ligas HS

Extending its reach to the regions, DOST-SEI participated in the 2013 Regional Cluster Fairs held in Tagaytay City, Cavite; La Trinidad, Benguet; Iloilo City, Iloilo; and Butuan City, Agusan del Norte, bringing to the regions the different programs, activities, and projects of SEI to the Filipino youth.

Getting a foothold in the increasingly popular social media platform, DOST-SEI continues to manage its social media accounts in Facebook and Twitter, being able to interact with more than 18, 000 netizens.

Hand in hand. DLSU Robotics guru Gilbert Zamora solves a puzzle with the students during the Smarter Kids, Smarter Scientists Competition.

DOST-SEI Director Dr. Filma G. Brawner answers queries from the media during the DOST-KUSYON Media Forum.

MANAGING SEI RESOURCES

STATEMENT OF ALLOTMENT & OBLIGATIONS

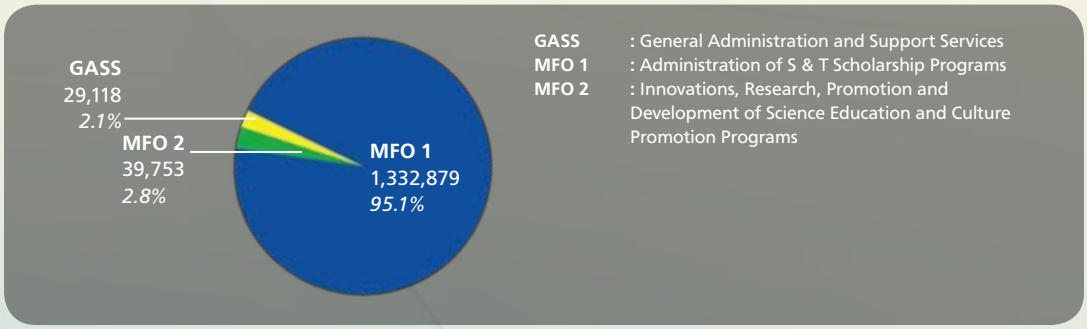
(Amount In Thousand Pesos)

PAPs	PS		MOOE		CO		TOTAL	
	Allotment	Obligation	Allotment	Obligation	Allotment	Obligation	Allotment	Obligation
General Administration and Support Services	21,259	21,156	7,629	6,769	1,200	1,193	30,088	29,118
Operations								
Development, Utilization and Implementation of Science and Technology Scholarships	4,620	4,619	1,328,335	1,328,260			1,332,955	1,332,879
Science Culture Development and Promotion	5,895	5,893	12,711	11,590			18,606	17,483
Research, Innovations and Training of Science Education	5,355	5,354	17,864	16,916			23,219	22,270
TOTAL	37,129	37,022	1,366,539	1,363,535	1,200	1,193	1,404,868	1,401,750

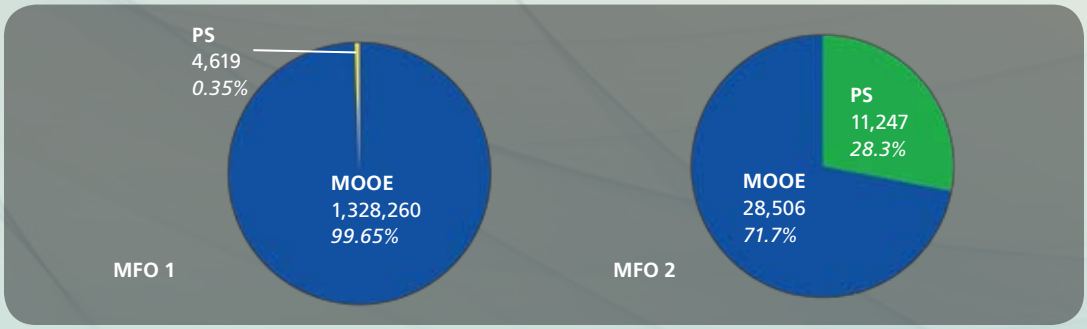
BUDGET DISTRIBUTION

(Amount in Thousand Pesos)

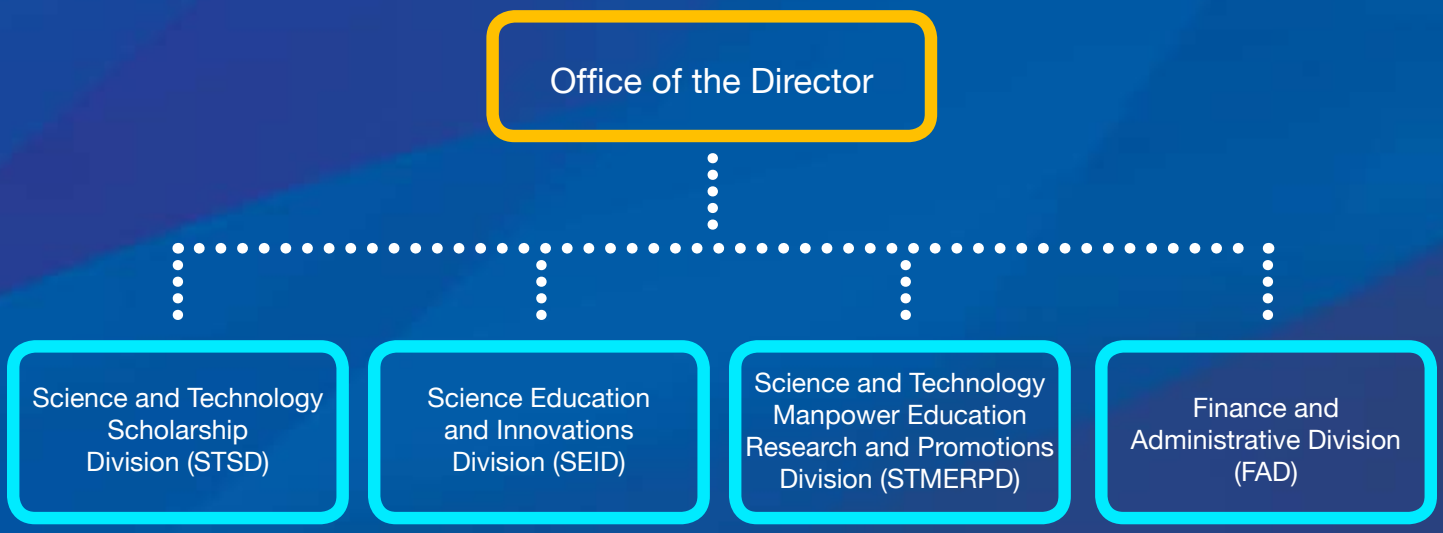
ACTUAL EXPENDITURES FY 2013



PER MAJOR EXPENSE CLASS AND MAJOR FINAL OUTPUT



ORGANIZATIONAL **CHART**



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SCIENCE AND TECHNOLOGY MANPOWER EDUCATION RESEARCH AND PROMOTIONS DIVISION

FINANCE AND ADMINISTRATIVE DIVISION