EXPANDING OUR REACH
ANNUAL REPORT 2014
FOR INCLUSIVE GROWTH

Science Education Institute
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Table of Contents

Introduction 04
Message from the Secretary 05
Message from the OIC, Office of the Director 06
Message from the Director 07
Highlights 08
Developing Human Resources in Science and Technology 10
Building Science and Technology Culture 28
Strengthening Capabilities in Science and Technology Education 44
Creating Communication and Information Links 64
Gender and Development 68
Institutional Awards and Recognition 71
International Grants Received 72
S&T Capacity Building Activities 74
Loyalty Recognition 76
Managing Resources 78
Organizational Chart 79
Key Officials 80
Officers and Staff 81
Introduction

Science that empowers lives.

This theme reiterates the indisputable fact that science is the foundation of tomorrow’s technologies, jobs and well-being, and its learning should therefore benefit not just students but society in general.

While the Science Education Institute of the Department of Science and Technology operates out of the fundamental need to provide educational opportunities to young people and help gain for the country a critical mass of S&T professionals, deepening the relationship between science and society and reinforcing public confidence in science is embedded in its principles.

DOST-SEI facilitates an informed engagement among its various stakeholders – from the professionals in the academe and industry to community leaders and citizens in general. Its efforts to generate interest in, and attitudes towards, science and technology must go beyond solely educational and need to be framed and understood in a wider social, cultural and political context.

This socially inclusive approach is necessary to achieve what is often called “scientific and technological literacy.” Only within this condition can the knowledge and understanding of science among the youth translate into effective craft, and scientific values strengthen our collective power to move our country forward.

Message from the SECRETARY

More than a quarter century of service to the Filipino people is truly an exemplary feat, and I congratulate the Science Education Institute (DOST-SEI) for attaining this significant milestone.

The DOST, through the SEI is proud to be able to give our youth access to quality education in the leading public and private institutions nationwide. Improvements in science, technology, engineering and mathematics education across all levels are critical to preparing our future scientists with the skills they need to meet the demands of a growing economy.

Driven by its mandate, the Institute has succeeded in bringing forth a tremendous increase in the number of applicants to its scholarship programs. Our call for more scientists and engineers is being heeded by our youth. We are optimistic that this new breed of future scientists and engineers will help us in achieving a smarter Philippines through the creation of S&T based solutions, by giving birth to innovations that will make our country become globally competitive and at the same time, improve the lives of the Filipino people.

For our S&T scholars and students, now is the best time to become scientists and engineers. Through enrichment programs, advanced teacher training methods, technology adoption in schools, industry partnerships, research and competitions, and numerous activities highlighted in the 2014 Annual Report, the DOST-SEI promises to provide an exciting and engaging educational environment.

Mabuhay!

MARIO G. MONTEJO
Secretary
Department of Science and Technology
Message from the OIC, OFFICE OF THE DIRECTOR

For economic growth to be truly inclusive, our country needs a new economic vision focusing on the role of knowledge as basis for the transformation of science and technology into goods and services that will benefit all sectors of our society.

To achieve a science-led development of this magnitude, the vision of this modern economy must be articulated at the highest level of government. The aim should be to deepen the relationship between science and society, and reinforce public understanding and confidence in science.

I am pleased to observe that the DOST-SEI is on the right path towards an informed engagement of citizens on matters of research and innovation by promoting science education, by encouraging students to participate in its scholarship programs, by making the STEM courses widely accessible to the public, and by developing research and innovation programs that meet the concerns of students, parents, educators, policy makers and civil society as a whole.

Clearly, attracting and retaining human resources with the willingness to contribute their skills, time and effort for scientific causes is an important pillar of our socio-economic development strategy. The challenge is to enhance the traditional ways of conducting science and to think about new opportunities for innovation and insights and to create new and existing links between the various scientific disciplines. These approaches are just some of the motivational drivers expected to contribute to greater individual and community engagements in science.

For another year of notable accomplishments, and for continually coming up with more innovative approaches to science and mathematics education, the Science Education Institute has clearly played an increasingly important role in helping us realize the inclusive growth that we envision for our country.

FORTUNATO T. DE LA PEÑA
Undersecretary for S&T Services, DOST
Officer-In-Charge, Office of the Director, SEI
(January-March 2014)

Message from the DIRECTOR

The year in review marks several exceptional successes for Science Education Institute particularly in the provision of scholarship to undergraduate students.

After conducting an intensified information campaign among the various municipalities in the country in 2014, we saw the number of scholarship applicants reach unprecedented levels, 21 percent higher than the numbers we attained in 2013.

These applicants will eventually add greatly to the base of science and technology workers that we have amassed already. Over the past 20 years, we are pleased to share the fact that we have doubled the number of S&T practitioners in the country, strengthening our collective power to move our country forward to economic progress.

Going beyond mere numbers, we are identifying and prioritizing fields that are most in need of S&T workers, and these findings are being used to influence the way we carry out our scholarship, innovation and advocacy programs.

All these efforts are fueled by the drive for inclusive growth, to fight poverty and empower the poor and the marginalized segments of society. Along with providing access to science education and increasing our scholar base, we have efforts to sustain the development of Filipino scientists, engineers and innovators, and to expand our network of state colleges, universities and public/private sector institutions to develop and channel human resources into priority areas for economic development.

We continually conduct a review of the main factors that contribute to human resources development, from the educational process covering secondary schools and universities to research institutions and industries employing R&D personnel. We likewise monitor S&T resources stock and mobility in the country through our continuing research studies.

We have identified and initiated specific actions and policy measures that make a substantive contribution towards increasing the number of research personnel and science professionals in the fields in which they are most needed.

The numbers that we continue to generate among our scholarship applicants alone clearly shows that momentum is building as we aggressively engage the interests of our young population in the fields of science, technology, engineering and mathematics.

Much still needs to be done in order for the Philippines to step up to the level of competition presented by the ASEAN integration. Learning science in the classroom should be just the first step in a lifelong endeavor to bring science and scientific thinking into everyone’s lives.

JOSETTE T. BIYO
Director
Intensifying scholarship programs

Scholars grow in numbers. The number of students supported by the S&T Undergraduate Scholarship program continues to grow, totaling 12,117 in 2014, a 21-percent increase from 2013.

Implementing Rules and Regulation (IRR) of RA 10612 crafted. In 2014, DOST-SEI convened an Inter-Agency-Technical Working Committee (IA-TWC) to draft the Implementing Rules and Regulations that would govern the execution of RA 10612 or the Fast-Track Science and Technology Scholarship Act of 2013. On August 4, 2014, the final IRR gained the signatures of the Secretaries of the Department of Science and Technology (DOST) and the Department of Education (DepEd). On October 18, 2014, 500 students emerged as the first batch of scholars for RA 10612.

DOST-SEI Scholars visit Japan. Six (6) DOST-SEI graduate scholars in the field of Agricultur participated in the 10th Batch of the program dubbed Participation in the Japan East Asia Network of Exchange for Students and Youths (JENESYS 2.0) on May 12-20, 2014. The JENESYS 2.0 is a youth exchange program between Japan and ASEAN Member States with the aim of promoting global understanding of Japanese variance and also as revitalizing the Japanese economy and increasing its foreign visitors.

Science Education Consortium expands. To make the Philippine higher education institutions more competitive in light of the ASEAN integration, the Accelerated Science and Technology Human Resource Development Program – Science Education Consortium (ASTHRDP-SEC) was expanded to include universities in Luzon offering science and mathematics education.

ASTHRDP holds 3rd National Scholars’ Conference. It was successfully conducted last February 22, 2014 at the Tresters Hotel, Manila with the theme “Harnessing S&T Human Resources for ASEAN Integration.” The conference was attended by 290 scholars and mentors from NISC universities all over the country.

The ASTHRDP supported a total of 1,198 MS and 235 PhD scholars and mentors from NSC universities all over the country.

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expanding the reach of S&T

Push 4 Science Program bears positive results. SEI intensified promotional activities resulted in a total of 45,097 applications to the 2015 S&T Undergraduate Scholarships. This is the highest ever recorded in the history of the implementation of the scholarship program. In 2014, the campaign directly reached 15 out of the 71 target municipalities.

Science Explorer accelerates service pace. The country’s first mobile science learning facility, the Science Explorer bus, improved its pace in bringing fun science learning to kids in 2014 as it increased by 25% the number of students served from 3,018 in 2013 to 3,142.

Students display skills in various robotics competitions. In Tagiason Robotics, Pitogo High School students bested 34 teams to dominate the 2014 competition. The alliance of Pitogo High School, Grace Christian College, and Rizal High School was also named as Best Alliance.

In 2014, the Philippine Robotics Olympiad (PRO) drew the participation of 51 teams from elementary level and 81 teams in the secondary level for the preliminary judging held on September 10 and 11, 2014. On September 12, 2014, 25 teams in the elementary and 40 teams in the secondary level qualified for the final judging. In the Regular Category, the top three teams won in the elementary and high school levels competed in the World Robot Olympiad (WRO) held in November 21-23, 2014, in Sochi, Russia.

Ocean Study, Geology, and Community Survey Highlight Climate Science Camp. Climate science camp focused on studying the ocean, the river system, and the community in the Innovation and Climate Science Camp held in Puerto Galera on April 1-9, 2014.

World Space Week marks 15th year of celebration. In 2014, DOST-SEI marked with the rest of the world the 15th World Space Week celebration. With the theme “Space: Guiding Your Way,” the 15th World Space Week focused on the benefits of satellite navigation systems and other space science applications to society.

Math students demonstrate skills in Olympiads. Around 201 high school students took part in the oldest & the most prestigious national mathematics competition among secondary students in the country, the Philippine Mathematical Olympiad. Winners and selected finalists were trained and screened for the Final line up of Philippines delegates to the International Mathematical Olympiad (IMO).

BPI Foundation continues incentive program. The joint project of DOST and the Bank of the Philippines Islands (BPI) Foundation, the BPI-DOST Best Project of the Year Awards, continues to provide incentives to students who excel in the fields of Biology, Mathematics, Chemistry, Physics, Engineering and Computer Science research. Twenty-nine (29) entries were submitted by accredited schools in 2014, from which the finalists and top three awardees emerged.

Students reap awards in International Math competitions. Fifty-two (52) Filipino students from different schools received Certificates of High Distinction in the Australian Mathematics Competition. Meanwhile, six students received honors in the 5th International Mathematics Olympiad (IMO), the largest, most prestigious, and most difficult mathematics competition in the world.

YES Awardees honored. DOST-SEI honored 468 elementary and high school students who have won gold, silver and bronze in international science and mathematics competitions, topping the previous high of 447 in 2013.

Enrichment Program goes into remote areas. A total of 1,359 fourth year students from 79 municipalities without DOST scholarship participated in the mentoring program that was implemented from July to September 2014 in cooperation with the DOST Regional Offices in Regions 1, 2, 4A, 4B, 8, 11 and Cordillera Autonomous Region (CAR).

Project MOVE ON continues successful run. Aptitude tests and mentoring sessions were given to students of the 12 beneficiary schools under this project which marked the second year of its three-year implementation. MOVE ON is an extension of the recently completed three-year project called the “Mindanao Opportunities for Vitalized Education and Upgrading of Science (MOVE UPS).”

Competency building programs for science and math teachers held. A Teacher Training Program on Innovative and Strategic STEM Education was held at the PHS Main Campus in Quezon City on July 26, 2014 to improve the creativity and teaching capability among teachers on Science, Technology, Engineering and Mathematical (STEM) education. Meanwhile, a series of training sessions in September and November 2014 aimed to enhance the capability of elementary teachers on the use of problem solving in teaching mathematics. A total of 250 mathematics teachers in the elementary level were trained.

“Publish or Perish” encourages research publication. A three-day training entitled “Publish or Perish” was held on March 10-12, 2014 in San Mateo, Rizal. With the aim of enhancing the capacity of faculty members in publishing research papers for publication and updating them on the requirements of various local and international refereed journals.

Australian Awards Fellowship aims to strengthen STEM education. The program is a customized training for Philippine Science High School Campus Directors and DOST-SEI staff to address issues on managing current educational reforms in the Philippines and strengthen STEM education in response to the shift to the new K to 12 curriculum. It was held at the Queensland University of Technology (QUT) in Brisbane, Australia.

Mathematics Courseware completed. Grades 4-6 pupils and Mathematics teachers of 20 public elementary schools became the first among the beneficiaries of the digitized learning materials designed to improve the learning and performance of students as well as enhance the content knowledge, pedagogical capacity and critical thinking skills of the teachers in teaching mathematics.

and Search for Innovative Practices in Managing Large Classes conducted. Two winning Project teams were identified, one from Surigao City National High School, Surigao del Norte and the other from Tabaco National High School, Albay.

Monitoring S&T human resources continues. A technical report was prepared and published in 2014 regarding a benchmark study estimating the number of S&T professionals. A study detailing the extent of S&T skills migration was also updated in 2014 covering the period 2005-2011. Meanwhile, Tracker Forms were distributed to various DOST attached agencies, including Regional Offices in cooperation with the Scholarship Project Staff of various regional DOST offices to track the DOST-SEI scholar graduates. A total of 496 accomplished forms were collected, reviewed and encoded.

Upgrading our systems

Information Network enhanced. DOST-SEI invested in the enhancement of its network infrastructure and the IT skills of its workforce to effectively harness ICT in its operations.

Media-based strategies promote S&T initiatives. Several media-based strategies were implemented in 2014 as part of DOST-SEI's strategic communications plan to promote youth science programs, enhance the interest of students taking up STEM courses and promote S&T to the general public.

Highlights

In 2014, DOST-SEI invested in the enhancement of its network infrastructure and the IT skills of its workforce to effectively harness ICT in its operations.
Our country’s path to building the human capital for science and technology has reached the expanse of the country’s regions and municipalities. In a 20-year span from 1990 to 2010, we have seen an increase in the number of S&T workers, and this can only lead to economic betterment as the knowledge gained through research and development cascades to enhanced performance of our industries.

DEVELOPING HUMAN RESOURCES IN SCIENCE AND TECHNOLOGY

This positive outcome only raises our level of commitment at DOST-SEI to continually strengthen scholarship programs, develop activities that enhance the scientific capacity of our institutions, and contribute to the promotion of scientific awareness, empowerment and excellence in our society.
UNDERGRADUATE S&T SCHOLARSHIP PROGRAMS GAIN MORE GROUND.

Number of scholars continues to grow.

The S&T Undergraduate Scholarship remains to be one of the most popular means for talented students to receive financial assistance to pursue priority courses in science and technology. Spread over the 17 geographical regions of the country, the scholars supported by DOST-SEI totaled 12,117 in 2014, a 21-percent increase from 2013 (See Table 1).

As in previous years, Region IV-A (CALABARZON) had the highest number of scholars at 1,863 or 15.38 percent of the total number. This was followed by the National Capital Region (NCR) and Region VII (Central Visayas Region) with 1,572 (12.97 percent) and 1,356 (11.19 percent) scholars, respectively. Meanwhile, the Autonomous Region of Muslim Mindanao (ARMM) had the lowest number of scholars at 115 or about one percent of the total number. Region IX (Western Mindanao) and Region XII (Central Mindanao Region) had 259 (2.14 percent) and 264 (2.18 percent) scholars, respectively.

Of these, 1,256 or 10.37 percent graduated in March and October 2014 while 10,861 or 89.63 percent continued with their studies. At the undergraduate level, 20.06% (252) of the 1,256 scholar-graduates were awarded the top academic honors in their respective institutions. Twelve graduated Summa cum laude, 52 Magna cum laude, and 179 Cum laude, while six garnered honorable mention, three with academic awards and one With Honors (See Table 2).

Three scholars who completed their degrees earlier than the prescribed period of their courses were awarded with an incentive equivalent to their monthly stipends for the remaining semester/s of their courses. Furthermore, the period of service obligation that will be required of them is equivalent only to the period it took them to complete their respective courses.

Table 1: Distribution of DOST-SEI Undergraduate Scholars.

<table>
<thead>
<tr>
<th>Region</th>
<th>Status</th>
<th>Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>311</td>
<td>39</td>
</tr>
<tr>
<td>I</td>
<td>560</td>
<td>79</td>
</tr>
<tr>
<td>II</td>
<td>564</td>
<td>19</td>
</tr>
<tr>
<td>III</td>
<td>907</td>
<td>117</td>
</tr>
<tr>
<td>IV-A</td>
<td>1,468</td>
<td>180</td>
</tr>
<tr>
<td>IV-B</td>
<td>328</td>
<td>33</td>
</tr>
<tr>
<td>V</td>
<td>807</td>
<td>144</td>
</tr>
<tr>
<td>VI</td>
<td>918</td>
<td>60</td>
</tr>
<tr>
<td>VII</td>
<td>1,220</td>
<td>136</td>
</tr>
<tr>
<td>VIII</td>
<td>540</td>
<td>39</td>
</tr>
<tr>
<td>IX</td>
<td>254</td>
<td>39</td>
</tr>
<tr>
<td>X</td>
<td>404</td>
<td>30</td>
</tr>
<tr>
<td>XI</td>
<td>336</td>
<td>35</td>
</tr>
<tr>
<td>XII</td>
<td>249</td>
<td>15</td>
</tr>
<tr>
<td>ARMM</td>
<td>291</td>
<td>8</td>
</tr>
<tr>
<td>CAVAGA</td>
<td>218</td>
<td>26</td>
</tr>
<tr>
<td>NCR</td>
<td>1,374</td>
<td>188</td>
</tr>
<tr>
<td>Total</td>
<td>10,861</td>
<td>1,256</td>
</tr>
</tbody>
</table>

Table 2: Distribution of 2014 Scholar-Graduates by Scholarship Program and Academic Award

<table>
<thead>
<tr>
<th>Scholarship Program</th>
<th>Undergraduate</th>
<th>Master of Science Education</th>
<th>Doctor of Philosophy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA 7687</td>
<td>1,854</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>NCR</td>
<td>257</td>
<td>17</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2112</td>
<td>126</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

SEI-Regional S&T Scholarship Staff reoriented.

Held in Laoag City, Ilocos Norte on July 16-17, 2014, this annual activity of the Institute is designed to ensure that all the SEI Scholarship Staff in various regions share common understanding and knowledge of current and new developments in policies and standard operating procedures in the implementation of S&T scholarship programs.

In attendance were 33 Scholarship Staff from various regions nationwide and seven SEI staff who served as resource speakers, facilitators and secretariat. Topics discussed included 1) Conduct of the 2015 S&T Scholarship Examination, 2) Evaluation of Scholarship Application Forms, 3) Financial Matters, 4) Update and try-out of the web-based Scholarship Information System, and 9) Backgrounder on the RA 10612 otherwise known as “Fast-Tracked S&T Scholarship Act of 2013.”

The participants also shared their best practices in implementing the scholarship programs in their respective regions.
Implementing Rules and Regulations (IRR) of RA 10612 crafted.

In 2014, DOST-SEI convened an Inter-Agency-Technical Working Committee (IA-TWC) to draft the Implementing Rules and Regulations that would govern the RA 10612 or the Fast-Tracked Science and Technology Scholarship Act of 2013. This new law aims to beef up the country’s pool of S&T professionals by fast-tracking the creation of more science, technology and engineering graduates through provision of scholarships to deserving students in their third year of undergraduate study, based on their competitiveness and merit. Scholars are required to teach in sciences, technology, engineering, agri-fisheries, and mathematics (STEAM) subjects in the K-12 Program in public and private high schools after graduation.

The committee held a series of public consultations in Luzon, Visayas, Mindanao and the National Capital Region (NCR), with representatives from various stakeholders such as DepEd, CHED, PRC, CSC, NEDA, PIA, DOST-ROs/PSTC, SUCs and Scholars’ Association.

In Mindanao, the event was held on March 17, 2014 at the Hotel Elena, Davao City with 52 participants from Regions IX, X, XI, XII, ARMM and CARAGA. In Visayas, it was held on March 18, 2014 at Iloilo Midtown Hotel, Iloilo City with 28 participants coming from Regions VI, VII and VIII. In NCR and Southern Luzon Region, the event was held at the Quezon City Science High School with 70 participants from Regions NCR, VA, IV-B and V while in Northern Luzon, it was held at San Fernando, La Union with 110 participants coming from Regions I, II, III and CAR.

At the end of the sessions, a two-day workshop to produce the final form of the IRR was conducted on July 2-3, 2014 at the Estancia Resort Hotel in Tagaytay City. On August 4, 2014, the Secretaries of the Department of Science and Technology (DOST) and the Department of Education (DepEd) affixed their signatures to the IRR at the OSEC Conference Room, Department of Education, Meralco Ave., Pasig City.

DOST Assistant Secretary Oswaldo Santos represented the DOST Secretary. Also present were former AGHAM Partylist Representative Angelo Palmones, DOST-SEI Director Josette T. Biyo, S&T Scholarship Division Chief Alicia L. Asuncion and STSD Supervising SRS Ma. Daisy A. Demoni.

Under the approved Implementing Rules and Regulations of the Fast Tracked Science and Technology Scholarship Act of 2013, scholarships shall be made available to qualified third year college students enrolled in priority S&T courses and willing to teach in secondary schools after graduation. To avail of the scholarship, applicants must qualify in the Junior Level Science Scholarships (JLSS) Examination.

First batch of qualifiers of RA 10612 announced.

Following the test development of the Junior Level Science Scholarships (JLSS) Examination required to qualify for the RA 10612 scholarships, a pre-testing of the test items was conducted on August 27-30, 2014 in 34 institutions nationwide involving 1,248 DOST-SEI junior scholars from various S&T fields.

Then on October 18, 2014, a total of 1,743 hopeful third-year college students took the nationwide qualifying examinations in 35 test centers nationwide. Only 500 students emerged as qualifiers of the first JLSS for RA 10612. Their names were announced in leading newspapers and posted on DOST-SEI’s websites.

Intensified information dissemination bears positive results.

In support of the DOST’s vision of having at least one scholar in every municipality by 2016, the Institute actively sought a dialogue with key officials of local government units, specifically in municipalities that have been consistently failing to have examinees over the past few years. In 2014, there were 210 municipalities that had no scholars, and 64 of these had consistently no examinees during the past three years.

A meeting took place with key officials of LGUs-Ilocos Norte last July 16, 2014. In attendance from the DOST were DOST Undersecretary for S&T Services Fortunato T. dela Peña, SEI Director Josette T. Biyo, S&T Scholarship Division Chief Alicia L. Asuncion, DOST 1 Regional Director Armando Q. Galan and the DOST Ilocos Norte Provincial Director. On the other hand, in attendance from LGUs-Ilocos Norte were Hon. Vice Governor Eugene Angelo M. Babat, the Provincial Board Members and the Mayors of Adams, Banayoyo and Dumarag municipalities in the region consistently without examinees in the scholarship examinations.

After the DOST-SEI presented the scholarship programs being implemented by the Institute, all local officials concurred to support the DOST-SEI’s scholarship programs and pledged to extend the necessary assistance to the qualified 4th year high school students who could file their applications; and ensure that they would report to the nearest test centers on the examination day to take the qualifying examination.
The following day, July 17, a meeting with the local officials and representatives from various high schools was conducted in Burgos, Ilocos Sur which is another municipality consistently having no scholarship examinees. To ensure that the municipality will have examinees, a test center was established in the adjacent municipality of Sta. Maria. Two of its high schools were also beneficiaries of the enrichment program of the Institute. Similar activities were also conducted by the DOST Regional Offices.

The applications to the 2015 S&T Undergraduate Scholarships administered by DOST-SEI totaled 43,097 this is higher by 21% compared to the previous year’s number. This is the highest ever recorded in the history of the implementation of the scholarship program.

The achievement was attributed to the intensive promotional activities conducted by SEI particularly the Push 4 Science Program. The applications to the 2015 S&T Scholarship Examinees (2013-2015) who served as examiners and proctors for the said examination. Dr. Milagros Ibe, Test Consultant and Ms. Alicia L. Asuncion, STSD Chief served as Resource Persons.

The nationwide examination was held on September 20, 2014. (See Figure 3).

Region VIII had the highest number of examinees registered at 15,533 or 14 percent of the total examinees. This was followed by Region IV-A with 14,051 examinees and Region VII with 3,942 examinees. Meanwhile, the Autonomous Region for Muslim Mindanao (ARMM) had the lowest number of examinees at 971. This was followed closely by Region XII with 1,025 examinees and CARAGA Region with 1,238 examinees.

The total municipalities with DOST-SEI scholarship examinees also increased from 1,478 in 2014 to 1,552 this year.

Table 3 shows the comparative analysis of the total number of municipalities and congressional districts without municipalities with examinees in the 2015 S&T Scholarship Examination.
The Overseas Workers Welfare Administration (OWWA) was once again a rider in the S&T Scholarship Examination for the selection of its 2015 Education for Development Scholarship Program (EDSP) and Congressional Migrant Workers Scholarship Program (CMWSP) scholars. In 2014, a total of 4,834 fourth year high school students took the examination, with 318 based in the Kingdoms of Saudi Arabia and Bahrain.

2014 S&T scholars presented to the Secretary.

The “one scholar per municipality by 2016” vision was reiterated during the annual rite celebrated by the DOST-SEI scholars. In 2014, a total of 2,185 freshman RA 7687 scholars nationwide attended the Summer Orientation and Enrichment Program (SCEP). One of the components of the STLAP, the SCEP is a month-long program held in May for incoming RA 7687 freshman scholars designed to provide them a refresher course in four main areas—Basic English, College Mathematics, Physics and Psycho-Social Skills Development. The goal is to help scholars by levelling of their skills in the academic subjects and providing tips and ways to adjust to college life and ensure their academic success and their holistic growth.

Scholars undergo Science and Technology Learning Assistance Program (STLAP).

In 2014, a total of 2,185 freshman RA 7687 scholars nationwide attended the Summer Orientation and Enrichment Program (SCEP). One of the components of the STLAP, the SCEP is a month-long program held in May for incoming RA 7687 freshman scholars designed to provide them a refresher course in four main areas—Basic English, College Mathematics, Physics and Psycho-Social Skills Development. The goal is to help scholars by levelling of their skills in the academic subjects and providing tips and ways to adjust to college life and ensure their academic success and their holistic growth.

Also included were psycho-social topics such as Coping with College Life; Stress Management; Time Management; Setting Priorities; and Learning Styles/Study Improvement Skills.

Scholars received a stipend of P4,000 per month, and were able to receive a stipend equivalent to two months.

DOST-SEI scholars visit Japan.

Six (6) DOST-SEI graduate scholars in the field of Agriculture participated in the 10th Batch of the program dubbed Participation in the Japan-East Asia Network of Exchange for Students and Youths (JENESYS 2.0) on May 12-20, 2014.
The nine-day program includes visits to Japanese corporations and provincial areas to enhance understanding and appreciation of Japan’s strengths, values, local cultures, historical architecture, high-tech exhibitions, and other attractions. The delegates were also given the chance to interact with Japanese students and exchange insights on Japanese student life, activities and certain S&T courses in the campus.

The DOST-SEI delegates underwent pre-departure orientation on May 8 & 16, 2014. They joined other participants from Brunei, Indonesia and Malaysia. The 11th Batch for Science and Technology comprised of 79 undergraduate and graduate DOST-SEI scholars from various S&T fields participated in their respective exchange program with students from Malaysia, India and Laos on May 19-27, 2014. The Philippine delegation was supervised by Ms. Ma. Daisy A. Demore and Ms. Charlyn Joy M. Laszus of the S&T Scholarship Division, SEI.

The program also includes the “homestay” wherein the students stayed with a Japanese family for two days to experience the Japanese way of life. It was capped off with a farewell cultural presentation by the Japanese family for two days to experience where the students stayed with a Japanese family.

**S&T GRADUATE SCHOLARSHIP PROGRAMS BOOST HIGHER EDUCATION.**

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). (See Table 4)

**Capacity Building Program in Science Education.**

This program intends to increase the number and improve the quality of S&T faculty members in Teacher Education Institutions so they can be in better capacity to mold the young people to be the future leaders in science and technology. Table 4 shows that in 2014, SEI supported a total of 57 MS and 102 PhD scholars, and produced six MS and seven PhD graduates.

**Expansion and renaming of Science Education Consortium.** To make the Philippine higher education institutions more competitive in light of the ASEAN integration, the Accelerated Science and Technology Human Resource Development Program – Science Education Consortium (ASTHRDP-SEC) was expanded to include other universities in Luzon offering science and mathematics education.

Established in 2007, the Science Education Consortium formerly included only four universities in the Visayas and Mindanao, namely: West Visayas State University in Iloilo City, University of San Carlos in Cebu City, Western Mindanao State University in Zamboanga City and Mindanao State University in Marawi City.

With its expansion, the consortium now includes Ateneo de Manila University, Bicol Central Luzon State University, De La Salle University, Mariano Marcos State University, and Philippine Normal University.

On July 25, 2014, the Memorandum of Understanding (MOU) for the consortium’s expansion and renaming into the National Consortium in Graduate Science and Mathematics Education (NGCCSE) in Iloilo was signed between the key officials of DOST-SEI, the current members in Visayas and Mindanao and the new members in Luzon at the Midas Hotel, Pasay City.

The objectives of the NGCCSE are to establish a common quality graduate program in science and mathematics program and to accelerate the development of critical mass of experts in these areas. Science and Mathematics teachers with at least one (1) year (MS) and two (2) years teaching experience will benefit from this program.

Announcement of graduate scholarship slots will start in June 2015 for BU, MMSU, MSU-Marawi, PNU and WVSU, and August 2015 for ADMU, CLSU and DLSU.

**Accelerated Science and Technology Human Resource Development Program (ASTHRDP).**

Aiming 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, this program supported a total of 1,198 MS and 235 PhD scholars monitored by SEI through S&T and to accelerate the production of high-level human resources monitored by SEI through S&T and to accelerate the production of high-level human resources.

**Monitoring Agency**

DOST Councils such as PCAARRD, PCHRD, and PCIEERD.

In 2014, it produced 215 MS and 235 PhD scholars.

**3rd National ASTHRDP-National Science Consortium Scholars’ Conference.**

Serving as a venue for scholars and their mentors to get together, gain updates on new developments in S&T and present research outputs, The 3rd National ASTHRDP-National Science Consortium Scholars’ Conference was successfully conducted last February 27-28, 2014 at the Traders Hotel, Manila with the theme, “Harnessing S&T Human Resources for ASEAN Integration.”

The National Science Consortium (NSC) has ten (10) member-universities, namely: the Ateneo de Manila University, Central Luzon State University, De La Salle University, Mindanao State University-IT, UP-Diliman, UP-Manila, UP-Viasysa, UST, and VVSU.

The conference was attended by 290 scholars and mentors from NSC universities all over the country.

This year, the number of paper presentations increased compared to last year. There were 60 and 99 researches accepted for oral and poster presentation, respectively. Six winners coming from the different clusters in the technical poster competition were awarded with cash.
Engineering Research and Development for Technology (ERDT).

The ERDT has a consortium made up of eight member-universities that offer quality masters and doctoral degrees in various engineering and technology fields. In 2014 the program supported 657 MS and 129 PhD scholars, and produced 84 MS and 5 PhD graduates.

3rd ERDT Congress. With the theme “Science and Technology for Disaster Preparedness and Resiliency,” the ERDT, in partnership with Philippine Council for Industry, Energy and Emerging Technology Research and Development, conducted the 3rd ERDT Congress to discuss the very timely and significant concerns of disaster risk reduction and management. It was held on July 25, 2014 during the celebration of the DOST National Science and Technology Week (NSTW) at the SMX Convention Center Pasay City.

Participants included faculty and scholars of the ERDT consortium universities, officials and researchers from the industry, non-government organizations and other local universities. DOST graduate scholars showcased their thesis/dissertation outputs and poster exhibits during the plenary sessions.

The first plenary speaker, Dr. Emmanuel M. Luna, Professor at the University of the Philippines (UP) College of Social Work and Community Development, showed the social aspects of disaster management through his presentation entitled “Reaching Out for Breath: Issues and Challenges for Disaster Risk Reduction.”

Next, UP College of Engineering Associate Professor Dr. Enrico C. Paranjit explained the DREAM Program, an international award winning project in the field of geo-informatics through his presentation titled “Mapping the Hazards of our Environment Through Nationwide Disaster Risk Exposure Assessment for Mitigation.”

Dr. Norman Kerle, Associate Professor and ERDT Visiting Professor from the Faculty of Geo-Information Science and Earth Observation of the University of Twente, The Netherlands also delivered his presentation on “Utility of geo-informatics for disaster risk management: linking structural damage assessment, recovery and resilience.”

In light of the devastating Typhoon Yolanda storm surge, Professor Dr. Cesar L. Villanoy of the UP Marine Science Institute gave a presentation on how to best understand the development of such catastrophic phenomenon using a scientific model.

Philippine Institute of Volcanology and Seismology Director Dr. Maruto U. Solidum Jr. presented the topic “Preparing for the Big One,” a reference to the massive earthquake that can hit the metropolis anytime.

Another presentation was given by the Green Economist Governor and the Father of Albay Hon. Joey S. Salceda through his lecture titled “Best Practices of Disaster Risk Management in Albay,” which featured his province’s best practices using culture-based approaches.

The last lecture was presented by UP Institute of Civil Engineering Professor Dr. Benito M. Pacheco who tackled “Disaster Risk Management Education in the Philippines.” Dr. Pacheco showcased how Civil Engineering 10 or the DMAPS (Disaster Mitigation. Adaptation and Preparedness) was conceptualized and implemented in UP as a general course where students from various disciplines can enroll and come up with multi-disciplinary projects that can address disaster risk management.

7th ASEAN Environmental Engineering Conference. More lectures and insights on disaster preparedness and mitigation were held as the ERDT program collaborated with the AUN/SEED-Net JICA Program in sponsoring the the 7th ASEAN Environmental Engineering Conference (AEEC) with the theme “How can communities be ready for disaster? The Role of Environmental Engineering in Community Preparedness, Immediate Response and Environmental Sustainability.”

Held on November 21-22, 2014 in Hotel Centro, Puerto Princessa Palawan, the conference was attended by 140 participants mostly from the academic sector and a handful coming from the industry. There were 50 foreign participants from the ASEAN region and Japan. The conference featured eight keynote speakers who are experts in the field of Disaster Risk Reduction and Management. Approximately 10 papers were presented in the two-day conference.

Coordination Meetings with Southeast Asian International Partner Universities. In preparation for the ASEAN integration, the ERDT conducted collaboration and synchronization meetings last June 22-27, 2014 with the officials of three ASEAN partner universities, namely: the Institut of Teknologi Bandung in Bandung, Indonesia; University of Malaya in Kuala Lumpur, Malaysia; and Chulalongkorn University in Bangkok, Thailand.

The objective was to present the current engineering education system of the University of the Philippines and the ERDT program and discuss synchronization of academic and curricular programs in the ASEAN region. The agenda included discussions on the challenges and opportunities in the ASEAN education system, the formulation of strategic programs and institutional research collaborations; visits to laboratories and facilities.
After the series of meetings, ERDT identified the strength and areas for collaboration with the three international partner universities, as follows:

- **Institute Technologie Bandung**
  The UR Department of Mining, Metallurgical and Materials Science Engineering is interested in conducting department/course specific benchmarking mission related to Petroleum and Geothermal Engineering, the two main strengths of the Indonesian institute.

- **University of Malaya**
  The strength of this organization lies in academic alliance activities.

- **Universiti Teknologi Bandung**
  The UP Department of Mining, Metallurgical and Materials Science Engineering is one of the two main strengths of the ERDT Consortium. It is interested in conducting department/courses, exchange study, and other academic alliance activities.

**ERDT hosts Engineering Forum series.**

The Forum Series is an event in partnership with other institutions, usually foreign universities. The forum serves as an avenue for ERDT scholars to meet other faculty and learn engineering in an international perspective. It also aims to create possible collaboration with other universities for R&D projects, exchange study, and other academic alliance activities. (See Table 6)

**Table 5. List of Visiting Professors under the ERDT Scholarship Program.**

<table>
<thead>
<tr>
<th>Date of Visit</th>
<th>Visiting Professor</th>
<th>University Consortium</th>
<th>Area of Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 19-February 14, 2014</td>
<td>Dr. Jerzy Dobrowszczak</td>
<td>Macquarie University</td>
<td>Wireless Sensor Networks</td>
</tr>
<tr>
<td>March 16-29, 2014</td>
<td>Dr. Isabelo Rabuya</td>
<td>University of Cincinnati-UQ</td>
<td>Environmental Systems Analysis</td>
</tr>
<tr>
<td>May 22 - 31, 2014</td>
<td>Dr. Anthony Chu</td>
<td>Jilin University, Columbia University, University of Derby</td>
<td>Educational Data Mining</td>
</tr>
<tr>
<td>July 6-15, 2014</td>
<td>Prof. Olga Gerasta</td>
<td>University of Twente, De La Salle University</td>
<td>Structural Damage to Buildings</td>
</tr>
<tr>
<td>September 16-25, 2014</td>
<td>Dr. Rhohiera Gonzalez</td>
<td>University of Twente</td>
<td>Modelling Landscape Disruption and Responses: Lessons from Connectivity</td>
</tr>
</tbody>
</table>

**Table 6. List of ERDT Engineering Forum Series conducted in 2014.**

<table>
<thead>
<tr>
<th>Date of Forum</th>
<th>Resource Person</th>
<th>Venue</th>
<th>University</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>114-Feb-14</td>
<td>Dr. Samuel DuBoff, Dr. Andrew Fajella, Dr. Robert Lacks, Dr. Ruyberto de las Heras, Dr. Hiroshi Tanaka</td>
<td>Geodetic Engineering/Theater</td>
<td>Case Western Reserve University, Singapore and Philippines</td>
<td>Introduction of ‘Engineers Without Borders’</td>
</tr>
<tr>
<td>27-Mar-14</td>
<td>Dr. Roland CHW</td>
<td>Faculty Lounge, Metro Hall</td>
<td>University of Surabaya</td>
<td>The Role of Industrial Ecology in Environmental Policy and Company Strategy</td>
</tr>
<tr>
<td>31-May-14</td>
<td>Dr. Gary Monk</td>
<td>Engineering Theater</td>
<td>Case Western Reserve University</td>
<td>“Handels” Sourcing</td>
</tr>
<tr>
<td>4-Jul-14</td>
<td>Dr. Norman Berke</td>
<td>Geodetic Engineering/Theater</td>
<td>University of Toronto and UR Department of Geodesic Engineering</td>
<td>Object Oriented Image Analysis: Methods in Disaster Risk Management – State-of-Art and Prospects for the Philippines</td>
</tr>
<tr>
<td>5-Sep-14</td>
<td>Dr. Ning Rua</td>
<td>Beta Epsilon Multimedia Hall, University of Derby</td>
<td>University of Derby, De La Salle University and UR-IIEERI</td>
<td>The Role of Technology Innovation in the Sustainability Supply Chain</td>
</tr>
<tr>
<td>0-Oct-14</td>
<td>Dr. Eric Pallant</td>
<td>Engineering Theater</td>
<td>Allegheny College</td>
<td>Rehabilitation of Polluted Rivers: The Solution Not in the Water</td>
</tr>
<tr>
<td>1-Oct-14</td>
<td>Prof. Iona Vildum</td>
<td>Geodetic Engineering/Theater</td>
<td>Simon Fraser University</td>
<td>Mechanical Behaviour of Engineering Using Molecular Dynamics and Atomic-Scale Finite Element Method</td>
</tr>
<tr>
<td>8-Nov-14</td>
<td>Prof. Iona Vildum</td>
<td>Geodetic Engineering/Theater</td>
<td>ITU University of Vienna</td>
<td>Modelling Landscape Disruption and Responses: Lessons for Connectivity</td>
</tr>
</tbody>
</table>

**DOST-SEI SCHOLARS RECOGNIZED.**

“In Touch with Excellence” honors outstanding scholars.

The annual activity of the Science Education Institute, as part of the celebration of the National Science and Technology Week (NSTW), recognizes BS and MS scholars who graduate with the academic honors, and PhD degree graduates of its scholarship programs.

The ceremony was held at the Midas Hotel last July 25, 2014 and was attended by 194 scholar-graduates and their parents/guardians, partner-institutions, and DOST-SEI officials and staff. The BS and MS scholars who completed their degrees with academic honors were awarded the medal of Academic Excellence in Science while those who completed their PhD were awarded plaques of Recognition.

The Capacity Building in Science Education produced 13 graduates, six with MS and seven with PhD degrees. The ASTHRDP produced 215 MS and 17 PhD graduates while the ERDT Program produced 84 MS and five PhD graduates.

(Above) The DOST-SEI scholar-graduates with Dr. Reinaelle C. Reyes, Prof. Fortunato T. dela Peña and Dr. Annette T. Rigo.

Dr. Reinaelle C. Reyes, a 2011 Merit Scholarship Program recipient who studied BS Physics and graduated Summa Cum Laude at the Ateneo de Manila University in 2004, served as the guest speaker of the event. The lead of the research team who proved Einstein’s Theory of Relativity in 2010, Dr. Reyes obtained her PhD degree at Princeton University, New Jersey, USA and became a postdoctoral fellow at the Kavli Institute of Cosmological Physics at the University of Chicago, USA.
Special night for scholar-graduates held. “Scholars’ Night” is the very first gathering of scholar-graduates organized by DOST-SIE as a way of further recognizing their valuable contributions to the country’s S&T development and inspiring other scholars to also do well in their chosen fields. The event was held at the SMX Convention Center on July 25, 2014 as part of the celebration of the 2014 National Science and Technology Week. In attendance were 280 scholar-graduates, parents, and DOST officials.

Inspirational messages were delivered by these successful DOST-SIE scholar-graduates:
• Engr. Christian Jeffrey Hidalgo, a 1994 Merit awardee who studied BS Chemical Engineering at UP-Diliman and is now a singer/director and entrepreneur, talked about Science in Entrepreneurship.
• Dr. Brenda Nazareth-Manzano was a 1978 NSTA scholar who studied BS Chemistry at the Western Mindanao State University and is now the Regional Director of Department of Science and Technology in Zamboanga Peninsula. She dwelt on the topic, Science in Leadership and Governance.
• Dr. Reynaldo Vea, a 1969 NSTA scholar, BS Electronics Engineering graduate of the University of the Philippines-Diliman and now the President and Chief Executive Officer (CEO) of Mapua Institute of Technology, talked on Science in the Academe.

DOST Undersecretary for S&T Services Fortunato T. dela Peña commended the achievements and the services rendered by the scholar-graduates. He also informed the scholars of the organizational outcomes which the DOST envisions to realize by 2016.

CAREER INCENTIVE PROGRAM LAUNCHED.
In response to the administration’s call to strengthen the country’s S&T capability and boost employment opportunities for DOST scholar-graduates, the Institute launched an incentive program providing specialized career positions to Masters and Doctoral degree scholar-graduates under the Accelerated Science and Technology Human Resource Development Program (ASTHRDP) and the Engineering Research and Development for Technology (ERDT).

Specifically, the program offers Senior Science Research Specialist and Supervising Science Research Specialist positions in DOST Research Institutes and other agencies, giving qualified graduates real world involvement in research and development and other technology services under the mentorship of a scientist.

As of end of CY 2014, DOST-SIE disseminated the availability of MS/PhD graduates who can work on their research projects, and evaluated application forms and other documentary requirements submitted by the applicants for endorsement to the research institutes for their consideration.

DOST EMPLOYEES BENEFIT ON CONTINUED SCHOLARSHIP.
Regular employees of the DOST system continue to benefit from the DOST-Human Resources Development Program (DOST-HRDP) via scholarship and training grants and other post-graduate capacity-building incentives for skills development and career advancement. These scholarships cover the fields of natural sciences, engineering, social sciences, management and related subjects.

In 2014, the DOST-HRDP supported a total of 14 MS and 9 PhD awardees. New scholarships were awarded to 26 MS and 13 PhD aspirants while 12 MS recipients graduated.

TABLE 7. Distribution of DOST-HRDP scholars supported by status and level, 2014

<table>
<thead>
<tr>
<th>Particular</th>
<th>MS</th>
<th>PHD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-Time</td>
<td>Part-Time</td>
<td>Full-Time</td>
</tr>
<tr>
<td>New</td>
<td>54</td>
<td>12</td>
<td>65</td>
</tr>
<tr>
<td>Continuing</td>
<td>54</td>
<td>1</td>
<td>55</td>
</tr>
<tr>
<td>Graduates</td>
<td>12</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>120</td>
<td>14</td>
<td>83</td>
</tr>
</tbody>
</table>

The program also supported one employee who is pursuing his PhD abroad and another one who is completing his dissertation (See Table 7). The DOST-HRDP also supported nine DOST employees for Short-term Training Program to enhance their skills and upgrade their knowledge on recent developments in science and technology. For having completed their graduate programs on their own, four employees received Financial reward under the Incentive Program while one employee was granted Bar/Board Review Grant (See Table 8).

S&T SPECIALISTS ENCOURAGED INTO PUBLIC SERVICE UNDER PD NO. 997.

With the goal of supporting and encouraging science and technology specialists to get into public service, the Institute distributed brochures and other information materials on Presidential Decree No. 997 (PD No. 997). The law allows the conferment of Civil Service Eligibility to a scientific or technological specialist whose expertise is gained through advanced education and sharpened by research and teaching experience to promote scientific research and invention towards the advancement of science.

Having been appointed as the program’s implementing agency effective April 1, 2011, the Science Education Institute is tasked to provide the technical and administrative support to the PD No. 997 Presidential Committee and Technical Working Group in the pre-screening, evaluation, and processing of applications to the program. The Institute will also submit the final list of qualified applicants to the Civil Service Commission upon endorsement by the DOST Secretary.

The information dissemination campaign was conducted during the regional National Science and Technology Week (NSTW) cluster fairs. Brochures were distributed also to various DOST offices, while an official website on PD No. 997 under the DOST website was created and linked to the various websites of the DOST Offices/Regional Offices.

Qualified PD No. 997 applicants will be conferred the S&T Specialist Eligibility, which is considered appropriate for personnel in the first and second level positions in the government whose courses are not covered by Bar/Board and other special laws. In 2014, a total of 38 applications were evaluated and 24 applications were endorsed by the DOST Secretary to the CSC Central Office and various concerned CSC Regional Offices and granted S&T eligibility under PD No. 997.

The member of the Technical Working Group (TWG) also completed the revisions of the Implementing Rules and Regulations (IRR) of the law, and submitted the same for final review/approval by the members of the Presidential Committee and DOST Secretary, respectively.

TABLE 8. Number of 2014 Awardees of the Other Components of the DOST-HRDP

<table>
<thead>
<tr>
<th>Other Programs</th>
<th>No. Of Awardees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Term Training Program</td>
<td>9</td>
</tr>
<tr>
<td>Incentive Program</td>
<td>4</td>
</tr>
<tr>
<td>Bar/Board Review Grant</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>14</td>
</tr>
</tbody>
</table>
Forming a culture of S&T innovation requires a deep recognition of the influencing factors of society, particularly the social and cultural values, norms, attitudes and behaviors that define our way of life. DOST-SEI’s experiences have made the Institute acutely aware of the need to involve the public in its major technological orientations to foster public understanding of science and technology.

The Institute’s wide variety of measures include hosting high-visibility local and international workshops and competitions, forging partnerships with public and private organizations, innovating strategies and technologies for effective science and mathematics learning, and exploring new forms of promoting science and mathematics that appeal to the youth. Policy measures are also formulated to give attention to specific target audiences, close the digital gap, promote S&T careers and the culture of innovation, and even raise awareness on scientific entrepreneurship.
Municipalities that had no examinees to the DOST-SEI Undergraduate S&T Scholarship Program from 2010-2012 received encouragement from DOST-SEI through the #Push4Science: Maging DOST Scholar Ka!” strategic marketing communication initiative. The campaign sought to promote awareness on the S&T Scholarship Program in order to entice potential students, particularly from incoming fourth-year high school population, to apply for the scholarship programs.

In 2014, the campaign directly reached 15 out of the 71 target municipalities while engaging the other concerned areas in information drives conducted by DOST Regional Offices and Provincial Science and Technology Centers (PSTC). It served a total of 679 students and teachers from schools in Baras in Catanduanes; Adams and Dumalneg in Ilocos Norte; San Isidro, San Benito and Burgos in Siargao Island; Banayoyo, Burgos and San Emilio in Ilocos Sur; Libertad, Balingoan and Kinoguitan in Misamis Oriental; Tagoloan and Magsaysay in Lanao del Norte, and Malitbog in Bukidnon.

During the campaign, application forms and Information, Education and Communication (IEC) materials for the RA 7687 and Merit Scholarship Programs were distributed as DOST-SEI personnel guided the students and school officials on the application process in full detail.

Ongoing and graduate scholars also spoke about their experiences as DOST Scholars to inspire potential applicants to follow their path. The team also obtained the support of the Principals and Local Government Units primarily in providing transportation for the students during the submission of forms and actual exam date and in sustaining the campaign in their schools/localities.

DOST-SEI provided Scholarship Campaign Kits to the PSTCs for their respective scholarship caravans to the 56 other municipalities. Posters, brochures and other collaterals were also distributed in all DOST attached agencies in Metro Manila to promote the scholarship program.

The campaign also included exhibits, audio-visual presentations, posters/ tarps, stickers, notebooks, press releases, games, campaign folders/kits, brochures, fact sheets, shirts, jackets and others.

Initiatives Expand S&T Reach.

The country’s first mobile science learning facility, the Science Explorer bus, improved its pace in bringing fun science learning to kids in 2014 as it increased by 25% the number of students served from 3,081 in 2013 to 3,842.

The Science Explorer touched base with the youth in new areas and other previously visited places, namely:

<table>
<thead>
<tr>
<th>Destination</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baras, Catanduanes</td>
<td>368</td>
</tr>
<tr>
<td>Dumalneg, Ilocos Norte</td>
<td>110</td>
</tr>
<tr>
<td>Banayoyo and Burgos, Ilocos Sur</td>
<td>339</td>
</tr>
<tr>
<td>Tagoloan City</td>
<td>341</td>
</tr>
<tr>
<td>Tuguegarao City</td>
<td>2,612</td>
</tr>
</tbody>
</table>

Modules created in 2014 also increased to cater to the fast-changing pace of science and stoking the flames of interest amongst the students. They are:

1. Earthquake
2. Fun Chemistry
3. Puzzle Mathematics
4. Landslides
5. Sedimentary Rocks
6. Let it Go – The Physics of Transportation
7. Let it Float – The Physics of Buoyancy
8. Trophic Levels
9. Acids and Bases
10. Robotics for Elementary
11. Robotics for High School
12. Androids
13. The Science of Communications for Elementary
14. The Science of Communications for High School
15. The Science of Gravity
16. Energy Saving
17. Bioluminescence
18. Plastics and the Environment
19. DNA Science
The first and only varsity-type robotics competition in the country, the Tagisang Robotics: Design. Build. Play. Competition, completed its fourth year by having drawn hundreds of eager participating high school students and teachers. The event, considered the toughest robotics competition in the country, engaged students to hone their skills in mathematics, programming, project management, problem solving, creativity, teamwork and communication.

Pre-Competition Training and Workshop.
This period involved a five-day intensive robotics training program attended by 111 high school students and teachers from 31 public and six private high schools in NCR and Bulacan on May 26-30, 2014 at the UP-NISMED Auditorium, Diliman, Quezon City. Members of the participating school teams were given hands-on training on Basic Electronics, Arduino-based microcontroller programming, Bluetooth module application, breadboard prototyping and Mechatronics.

Final Competition: “The Ultimate Clash.”
The three-day competition proper took place at the Hall 2 of SMX Convention Center, SM Mall of Asia in Pasay City on October 28-30, 2014. Pitogo High School, last year’s Best Rookie Team Awardee and Best Team, once again bested 34 teams to dominate the 2014 competition. The team members brought home P100,000 cash prize, P30,000 for their coach, along with a trophy for the school and medals for the students and coach.

Likewise, the alliance of Pitogo High School, Grace Christian College, and Rizal High School cruised past the alliance of Victorino Mapa High School, Philippine Science High School Main Campus, and Rizal National Science High School in the Championship Round to be named as Best Alliance. They brought home P150,000 cash prize, P30,000 for their coaches, medals for students and trophies for their schools.

For the Special Awards, Pasig City Science High School won the Most Popular Robot Award given by Felta Multimedia Inc., while Caloocan High School received the Most Popular Team Award given by Alexan Commercial. Rizal High School, on the other hand, won the Best Blog Award courtesy of Thinklab Training and Consulting given to the team that has the most creative, well-written and managed blogsite containing their experiences, developments and achievements during the robot-building period. Lastly, Valenzuela City School of Mathematics and Science grabbed the Best Robot Engineering Design Award presented by Intel Philippines.

Tagisang Robotics started out in 2011, as an offshoot of the FIRST Robotics Competition (FRC) held in Hawai, USA. Since then, Tagisang Robotics has continued to improve and reach more students. Many who participated in the last four years are now studying engineering and other STEM related courses, a solid statement to SEI’s advocacy to beef up the number of science professionals in the country and create an impact on nation building and development. The schools likewise continue to support their robotics teams and have even started their own local robotics competition as an initiative to include robotics in their curriculum.
CAMP EXPOSES STUDENTS TO INNOVATION AND CLIMATE SCIENCE.

The importance of understanding climate science and its attendant technologies prompted DOST-SEI to implement the Innovation and Climate Science Camp in partnership with Hyundai Asia Resources Inc. Foundation Inc. (HARI) as part of the Hyundai New Thinkers Circuit and in cooperation with UP Marine Science Institute (MSI) and UP National Institute of Geological Sciences (NIGS).

Held on April 1-9, 2014 at the Hollywood Palm Beach Resort, Puerto Galera, Oriental Mindoro, the camp featured plenary sessions, laboratory activities, field activities and exposure trips that covered major topics in Geology and Marine Science. Scientists teamed up with participating students to let them get the feel of actual research and fieldwork done by experts such as Map Reading, Face Factoring, GPS Reading, Mineral and Rock Identification, Flood Hazard Mapping, Water Filtration, Water Quality Sampling, Plankton Microscopy, Basic Snorkeling and Sea Safety and Survival.

The Innovation and Climate Science Camp bridges the basics of climate science, the technology of hazards assessment and reduction among students by allowing them to explore the land forms, the river systems and the ocean and have fun at the same time. They were also exposed to S&T careers through specific environmental issues.

SPACE SCIENCE EDUCATION PROGRAM TAKES OFF ANEW.

World Space Week marks 15th anniversary. In 2014, DOST-SEI marked with the rest of the world the 15th World Space Week celebration.

The World Space Week (WSW) is the largest international space celebration in the world that highlights the role of space science and technology to the betterment of the human condition. It is also an ideal time for teachers and students to use space-inspired activities to promote astronomy.

With the theme “Space: Guiding Your Way,” the 15th World Space Week focused on the benefits of satellite navigation systems to society.

In the Philippines, the celebration was held at the Legend Palmawan Hotel and Palawan State University in Puerto Princesa City, Palawan on October 8-10, 2014. Twenty (20) schools from the province of Palawan and three (3) Philippine Science High School Campuses in Iloilo, Cebu and Clark were invited to send their representatives to participate in this annual celebration. This was the first time that WSW was held outside Luzon.

The three-day event was highlighted by the Water Rocket Competition participated in by forty (40) high school students. The team from Palawan State University Laboratory High School (PSU-LHS) emerged as winners when they landed their water-bottle rocket a foot away from the bull’s eye. The target was located 80 meters away from the launch site. The team received P10,000 cash prize and represented the country in the 21st Asia Pacific Region Space Agency Forum (APRSAF) – Water Rocket Event (WRE) on November 28 to December 1, 2014 in Tokyo, Japan.

To enrich the participants’ understanding of the importance of space science, a lecture on Space Technology Application for the students focused on Global Navigation Satellite System (GNSS) while PSSEP’s Focal Person, Dr. Rogel Mari Sese, led a training session on Astronomy for Educators.

A poster-making contest with the theme: “Space is the Future” was also conducted for elementary students aged 8-11 years old, to give them an opportunity to exercise their creativity and showcase their ideas of space in art form. The top three Palawan-based winning entries of the WSW Poster-Making Contest were also sent to Tokyo, Japan for the APRSAF Poster Contest.

(Left) The top three winners in the WSW Poster-Making Contest present their winning entries to be sent to Tokyo, Japan for the APRSAF Poster Contest.

(Topmost) Despite the heavy downpour, students from Palawan region were very eager and excited to launch their own water-propelled bottle rocket.

(Above) Instructors from UP NIGS demonstrate the use of Turbidity Meter to measure the water quality of Tabinay River.

(Topmost) Participants of Innovation and Climate Science Camp with (left to right) HARI Vice Chairman Conrad Marty, HARI Board of Trustee Mr. Edward S. Gu, HARI Chairman Mr. Richard L. Lee, HARI President Ms. Pa. Perez-Adolfo, DOST Usec. Fortunato T. dela Peña, UP NIGS Dr. Carlesa Prieto-David, and DOST-PSTC Region IV-B Director, Mr. Jesus Pina.

(Right) Students get the chance to work under the sun and have fun while learning the basics of rocketry.

(Bottom) Students build their own model satellites and their teacher make their own model of satellite patterned after the Aeolus, Rosetta and SOHO models to gain deeper appreciation of space science and engineering.

(Inset) Build your own model satellite to gain deeper appreciation of space science and engineering.

(Left) Despite the heavy downpour, students from Palawan region were very eager and excited to launch their own water-propelled bottle rocket.
**STUDENTS PARTICIPATE IN 17TH PHILIPPINE MATHEMATICAL OLYMPIAD (PMO).**

Around 213 high school students took part in the oldest & the most prestigious national mathematics competition among secondary students in the country. The PMO is organized and implemented by the Mathematical Society of the Philippines (MSP) in cooperation with DOST-SEI with the aim of improving mathematics education and instilling greater interest in mathematics among students and teachers.

The National Stage of the competition was held on January 24, 2015, at the University of Santo Tomas, Manila with twenty (20) finalists competing.

Three (3) winners emerged in the 17th PMO (See Table 10).

### TABLE 10: Winners of the 17th PMO

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Award/Prize Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrian Reginald Sy</td>
<td>St. Jude Catholic School</td>
<td>Championship 1st Place</td>
</tr>
<tr>
<td>Farrell Eldrian Wu</td>
<td>MGC New Life Christian Academy</td>
<td>2nd Runner up 1st Place</td>
</tr>
<tr>
<td>Kyle Patrick Dulay</td>
<td>Philippine Science High School – Main Campus</td>
<td>2nd Runner up 1st Place</td>
</tr>
</tbody>
</table>

The participating students were:

1. Ang, Clyde Wee
ty
2. Arañas, John Angel
3. Balete, Nathaniel Joshua
4. Dulay, Kyle Patrick
5. Faldi, Raymond Joseph
6. Jaba, Andrea Jessica
7. Lao, Ma. Czarina Angela
8. Mira Que, Jose Alfonso
9. Que, Shaquille Ryan
10. Sy, Adrian Reginald
11. Sy, Andrew Lawrence
12. Tan, Matthew Ryan
13. Uy, Harvey
14. Wu, Farrell Eldrian

**STUDENTS PREPPED IN MATH OLYMPIAD SUMMER CAMP.**

Preparatory to the International Mathematics Olympiad, the Math Olympiad Summer Camp (MOSC) was held from April 7 to May 22, 2014. Primarily targeted for the National Finalists at the Philippine Mathematical Olympiad, this year’s camp also included those students who did well at the Asia Pacific Mathematics Olympiad (APMO).

The MOSC trainers were: Dr. Jose Ernie C. Lopez (UP Diliman, Team Leader of the Philippine Team), Dr. Richard Eden (Ateneo de Manila University), Dr. Timothy Teng (ADMU), Dr. Job Nabile (ADMU), Mr. Joseph Ray Claireno Dansasico (UPD, Deputy Team Leader), Mr. Louis John Vallejo (UPD), and Mr. John Pellas (UPD).

The participating students were:

1. Ang, Clyde Wesley
2. Dulay, Kyle Patrick
3. Lao, Ma. Czarina Angela
4. Sy, Adrian Reginald
5. Tan, Matthew Ryan
6. Wu, Farrell Eldrian

The top three (3) winners emerged in the 17th PMO.

**The Water Rocket Event contestants and organizers in the last APRSAF beams with pride as they gather after the exciting competition.**

**Philippine Team goes to Japan.**

The Philippines participated in the 21st Asia Pacific Regional Space Agency Forum (APRSAF) on November 28 – December 8, 2014 in Tokyo, Japan. It was jointly organized by Japan Aerospace Exploration Agency (JAXA) and Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) with the theme “Leap to the Next Stage: Delivering Innovative Ideas and Solutions.” Two high school students from Palawan State University – Laboratory High School, namely: Reniel V. Rosaceña and Nur Alan Pavlo B. Barte II, represented the Philippines in the Water Rocket Event held on November 28 to 30, 2014. They competed against 72 students from 17 countries in the Asia Pacific Region with PSSEP Focal Person, Dr. Rogel Mari Sese as coach and co-chair against 72 students from 17 countries in the Asia Pacific Region with PSSEP Focal Person, Dr. Rogel Mari Sese as coach and co-chair.

**Philippine Team to the 55th IMO was finalized.**

On May 22, 2014, the composition of the Philippine Team to the 55th IMO was finalized:

1. Ang, Clyde Wesley
2. Dulay, Kyle Patrick
3. Lao, Ma. Czarina Angela
4. Sy, Adrian Reginald
5. Tan, Matthew Ryan
6. Wu, Farrell Eldrian

The members of the Philippine Team had an additional two-day training in Tagaytay as part of their training for the IMO.

A send-off event was hosted by the Mathematical Society of the Philippines on June 28, 2014 at the Institute of Mathematics, UP Diliman.
LEARNING AND PLAYTIME MIX IN FIRST LEGO LEAGUE.

The fun and educational competition called the FIRST Lego League (FLL) drew the participation of 13 teams from different public and private elementary and high schools on February 22, 2014 at the Quezon City Science Interactive Center, Bagu Bantay, Quezon City. This robotics program from FIRST (For Inspiration and Recognition of Science and Technology) and the Lego Group entices children aged 9 to 16 years old to engage in a playful learning contest and to begin to think like scientists and engineers.

Dr. Yang’s College Inc. won the National FLL and represented the country in the International FLL World Festival on April 21-25, 2014 in St. Louis, Missouri USA. The National FLL is a joint project of SEI-DOST and Felta Multimedia Inc.

TABLE 11: BPI-DOST Best Project of the Year Award Winners

<table>
<thead>
<tr>
<th>Name and University</th>
<th>Project Title</th>
<th>Awards/Priizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander John Cruz</td>
<td>Design, Optimization, and Field Testing of a Plasma-Enhanced Optic Fiber Reactor</td>
<td>1st Place P 70,000.00</td>
</tr>
<tr>
<td></td>
<td>for Hydrogen Production via Visible Light</td>
<td>Graduate Scholarship Grant (SB-DOST)*</td>
</tr>
<tr>
<td>Jessa Marie Makabenta</td>
<td>Southern Cyanide Encapsulation of Biodiesel</td>
<td>2nd Place P 30,000.00</td>
</tr>
<tr>
<td></td>
<td>Using Alumina Ultrasonically and Thermo-Mechanical Stabilization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and Reactivity and Controlled Release</td>
<td></td>
</tr>
<tr>
<td>Kevin Colina</td>
<td>Electronic Toybook Creator with Educational Functions</td>
<td>3rd Place P 10,000.00</td>
</tr>
<tr>
<td></td>
<td>Natural Language Processing Board</td>
<td></td>
</tr>
</tbody>
</table>

For the Robot Soccer: PSHS – Bicol Campus; Team A; Benigno Aquino High School; For the Robot Dance: Dr. Yanga’s College Inc. with Ms. Mylene Bautista (Left) FIRST Lego League National Awardee Dr. Yang’s Colleges Inc. with Ms. Mylene Bautista (CB) President of FELTA Multimedia Inc.

38
PHILIPPINE TEAMS BRING HONOR IN INTERNATIONAL COMPETITIONS.

Australian Mathematics Competition (AMC) in one of the largest competitions in the world – the annual international correspondence-based Australian Mathematics Olympiad (AMC) – 52 Filipino students from different schools received Certificates of High Distinction.

The AMC is administered by the non-profit Australian Mathematics Trust (AMT), and is conducted by DOST-SEI in cooperation with the Mathematics Trainers’ Guild (MTG), DOST Regional Offices and Department of Education.

Simultaneous with other countries, the AMC was conducted on August 07, 2014 and drew the participation of over 400,000 students from 40 countries including 3,400 students from the Philippines.

The 2014 AMC Awarding Ceremonies were held on October 28, 2014 at the Tramway Bayview Buffet Restaurant, Pasay City. The following students obtained prizes:

<table>
<thead>
<tr>
<th>Prize</th>
<th>Students</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect Score</td>
<td>Stefan Marcus Ong</td>
<td>St. Jude Catholic School</td>
</tr>
<tr>
<td></td>
<td>Christian Philip Selena Arco Agaracion Laroc</td>
<td>Philippine Science High School - Alaminos Campus</td>
</tr>
<tr>
<td></td>
<td>Clyde Wesley Ang</td>
<td>Chiang Kai Shek College</td>
</tr>
<tr>
<td></td>
<td>Forrest Elizan Wu</td>
<td>MGC New Life Christian Academy</td>
</tr>
<tr>
<td></td>
<td>Jeremie Thomas Leyte</td>
<td>Hua Siong College of Iloilo</td>
</tr>
<tr>
<td>Prize Awardees</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junstin Timothy Uygongco</td>
<td>St. Jude Catholic School</td>
</tr>
<tr>
<td></td>
<td>Sean Matthew Tan</td>
<td>MGC New Life Christian Academy</td>
</tr>
<tr>
<td></td>
<td>Jeremie Keon Torralba</td>
<td>Southville International School and Colleges</td>
</tr>
<tr>
<td></td>
<td>Dominick Lauro Morellado</td>
<td>Notre Dame of Greater Manila</td>
</tr>
</tbody>
</table>

International Mathematics Olympiad (IMO), Winners of the Philippine Mathematical Olympiad went to Cape Town, South Africa on July 3-13, 2014 to represent the country in the 55th International Mathematics Olympiad (IMO), the largest, most prestigious and most difficult mathematics competition in the world. The Philippine participation to the IMO is jointly organized by SEI-DOST and the Mathematical Society of the Philippines (MSP).

Six students of the Philippine team received honors in the 55th IMO (See Table 13):

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrian Reginald Sy</td>
<td>St. Jude Catholic School</td>
<td>Silver Medal</td>
</tr>
<tr>
<td>Farrell Elizan Wu</td>
<td>MGC New Life Christian Academy</td>
<td>Bronze Medal</td>
</tr>
<tr>
<td>Kyle Patrick Dulay</td>
<td>Philippine Science High School – Main Campus</td>
<td>Bronze Medal</td>
</tr>
<tr>
<td>Matthew Ryan Tan</td>
<td>St. Jude Catholic School</td>
<td>Bronze Medal</td>
</tr>
<tr>
<td>Clyde Wesley Ang</td>
<td>Chiang Kai Shek College</td>
<td>Honorable Mention</td>
</tr>
<tr>
<td>Ma. Czarina Lao</td>
<td>St. Jude Catholic School</td>
<td>Honorable Mention</td>
</tr>
</tbody>
</table>

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.

For the first time, the Philippines finished in the top half of all participating countries and was tied with France.

World Robot Olympiad (WRO), The teams that won in the Philippine Robotic Olympiad went on to represent the country in the World Robot Olympiad (WRO), the pinnacle of excellence & achievement in robotics for elementary & secondary students throughout the world.
Held on November 21 – 23, 2014 in Sochi, Russia, the event drew nearly 400 teams from 47 countries with the theme: “Robots and Space”. The Philippine Robotics Team comprised 75 participants, headed by Dr. Josette T. Biyo, Director of SEI and Ms. Mylene Abiva, CEO/President of FELTA Multimedia Inc. and National Organizer of Philippine Robotics Olympiad (PRO).

In the Open Category of Elementary Level, Dr. Yanga’s College Inc. won Best Technical Award under the Special Awards Category while its High School level won the Best Creative Award and its College Level received Bronze Award.

First LEGO League World Festival. The winners in the 2014 National competition of FLL represented the country in the FLL World Festival held on April 21 – 25, 2014 in St. Louis, Missouri, USA.

The Philippine delegation was composed of students from Dr. Yanga’s Colleges Inc., namely, Trisha Carmela Santos, Chelsea Andrea Morales, Anne Jazpher Rui, Rey Allen Infante, King Johnnel Oljado, Abbie Casalla, Jasper Alberto, Jessica Ricci Lapeña, Jan Marrella Cruz and Anne Margaret Recinto. The Philippines ranked 1st Place in Project Presentation.

In the Philippines, FELTA Multi-Media Inc. is the National Organizer in partnership with the Science Education Institute and Department of Science & Technology, with the support of the Department of Education.

DOST-SEI honored 468 elementary and high school students who have won gold, silver and bronze in international science and mathematics competitions, topping the previous high of 447 in 2013.

The Institute bestowed upon the student-medallists the Youth Excellence in Science (YES) Award, a DOST institutional award for exemplary achievement of the youth in the fields of science and mathematics.

Highlighting the outstanding achievement of Filipino students this year was the Silver award won by Adrian Reginald Sy of St. Jude Catholic School in the International Mathematics Olympiad (IMO) held in Singapore. This is the third time in 25 years of participation in the IMO that the Philippines won a Silver medal.

Saint Jude Catholic School had the most number of medalists followed by Philippine Science High School - Main Campus.

MORE YES AWARDEES RECOGNIZED.

DOST-SEI Primes 3.0 of Dr. Yanga’s Colleges Inc. bagged the Bronze Award for College Level Category during the 2015 World Robot Olympiad with (from left) Ms. Mylene Abiva CEO/ President of FELTA Multimedia Inc. and Dr. Josette T. Biyo, Director of DOST-SEI.

(Right) A student of Dr. Yanga’s Colleges Inc. setting up his LEGO Robot to compete for the match.

The 2014 YES Awardees beaming with brilliance and confidence as they gather for a group picture together with SEI Director, Dr. Josette T. Biyo.

Adrian Reginald Sy of St. Jude Catholic School addressing his co-awardees and succeeding generation of math wizards to aim for the elusive Gold award in the next IMO.
According to a Forbes analysis in 2014, “half of the economic growth in developed countries in the last decade came from improved skills, highlighting the importance of skills development to growing an economy.” As the Philippines continues to power its way as one of the emerging markets that will eventually lead the world in terms of economic growth, it is becoming more imperative that our education system should integrate more strongly science and technology programs that will help push the development of critical thinking and skills among teachers and students.

**STRENGTHENING CAPABILITIES IN SCIENCE AND TECHNOLOGY EDUCATION**

DOST-SEI initiatives ensure the development of our intellectual and human capital necessary for responding to the critical national science and technology needs. By encouraging students, teachers, and faculty to participate in various science education programs, promoting the use of innovative classroom technologies, and providing step-by-step assessment strategies for our science, technology, engineering and mathematics workforce, the Institute is dedicated to strengthening the scientific literacy of our nation.
**IMPROVING THE QUALITY OF FEEDERS CONTINUES WITH NEW INITIATIVES.**

**Enrichment Program goes deeper into remote areas.**

Under the “Enrichment Program to Improve the Quality of Feeders to the S&T Human Resource Development”, a total of 1,357 fourth year students from 78 municipalities without DOST-SEI scholars participated in the mentoring program that was implemented from July to September 2014 in cooperation with the DOST Regional Offices in Regions 1, 2, 4A, 4B, 8, 11 and Cordillera Autonomous Region (CAR).

The students belonged to the top five percent of their schools and were interested in taking the scholarship examination and in pursuing careers in science, engineering and mathematics courses.

For this year, SEI proposed two modes of implementation in order to consider mentees coming from remote areas. Mode 1 involved the training of selected teachers with specialization in Science, Mathematics and English from the schools included in the identified municipalities without DOST-SEI examiners, to orient and familiarize them with the type of questionnaires given in the DOST-SEI Undergraduate Scholarship Examination. They in turn would mentor the fourth year students in their respective schools and the students from other schools in nearby municipalities.

The training was conducted by selected faculty members of Science, Mathematics and English subjects from Philippine Normal University (PNU), Saint Mary’s University (SMU), Faralaw State University (FSU), Philippine Science High School Eastern Visayas Campus and Ateeno de Davao University (ADGU). The trained teachers conducted mentoring classes in their respective schools and other schools from farflung areas. It was implemented by DOST Regions 2, 4A, 4B, 11 and CAR with 218 teachers trained as mentors.

In Mode 2, trained mentors from selected teacher training institutions (TTIs) and identified Philippine Science High School Campuses mentored the fourth year students. Directly selected faculty members from PSHS Illocos Campus mentored 50 students from seven (7) municipalities in Illocos Sur.

SEI provided the teacher-mentors and students with copies of Syllabus validated, a compilation of sample test items in Biological Science, Physical Science, Mathematics and Linguistic Ability on the following domains: Intelective Speed Test (Working Memory, Sensomotor, Inspection), Intelective Power Test (Scientific Ability, Quantitative Ability, Mechanical-Technical Ability, Imagery, Linguistic Ability), and Non-intelective Test.

**Project MOVE ON enters third year.**

Aptitude tests and mentoring sessions were given to students of the 12 beneficiary schools under the Mindanao Opportunities for Vitalized Education and Onward Nurturing (MOVE ON) as it marked the second year of its three-year implementation. MOVE ON is an extension of the recently completed three-year project called the “Mindanao Opportunities for Vitalized Education and Upgrading of Science (MOVE UPS)”. Project MOVE ON’s goal is to nurture pupils in Muslim dominated elementary schools and help them qualify in the National Competitive Examination (NCE) of the Philippine Science High School (PSHS) system to have a better chance at quality education.

In 2014, the program administered aptitude tests to 279 grade 5 and 377 grade 6 pupils in the following area schedules:

- Lanao del Norte - 25 June 2014
- Lanao del Sur - 24 June 2014
- Marawi City - 25 June 2014
- Maguindanao - 26 June 2014 (Nuro CES)
- 26 June 2014 (Simuay Junction CES)

Examiners and proctors were faculty members from the PSHS Central Mindanao Campus, Mindanao State University (MSU)-Marawi, MSU Maguindanao, DOST ARMM, DepED Maguindanao II, and Cotabato City State Polytechnic College.

Mentoring sessions were also held in the following areas on the dates indicated:

- Lanao del Norte - 12 July to 29 September 2014
- ARMM Maguindanao - 29 August to 27 September 2014
- 16 August to 27 September 2014
- Marawi City - 08 August - 20 September 2014
- Lanao del Sur - 01 August - 13 September 2014

A total of 254 pupils (189 Grade 6 and 65 Grade 5) attended the mentoring classes. Mentors were faculty members from the PSHS OMC, MSU Marawi, MSU Maguindanao, DOST ARMM, DepED Maguindanao II, Felix A. Pangaribuan Academy of the Philippines, and Cotabato City State Polytechnic College.

---

<table>
<thead>
<tr>
<th>REGION/ DIVISION</th>
<th>SCHOOL</th>
<th>NO. OF PUPILS</th>
<th>GENDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>REGION X/Lanao del Norte</td>
<td></td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Ilistem Maitum CES</td>
<td>15</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Bolkog CES</td>
<td>17</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Sultan Nuga Ampatuan CES</td>
<td>16</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Solobos CES</td>
<td>15</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Marawi Cristina CES</td>
<td>15</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Kaunongnes CES</td>
<td>15</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Total for Region X</td>
<td>95</td>
<td>65</td>
<td>30</td>
</tr>
<tr>
<td>ARMM/Marawi City</td>
<td></td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Balo-of, CES</td>
<td>41</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
<td>108</td>
<td>20</td>
</tr>
<tr>
<td>Lanao del Sur II</td>
<td></td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Balubog CES</td>
<td>15</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Tzin Aira Santos CES</td>
<td>17</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Maguindanao</td>
<td></td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Nars Esp CES</td>
<td>15</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Simpuy Buidong CES</td>
<td>17</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Total for ARMM</td>
<td>94</td>
<td>79</td>
<td>15</td>
</tr>
<tr>
<td>Total Grade VI</td>
<td>149</td>
<td>128</td>
<td>21</td>
</tr>
<tr>
<td>Total Grade V</td>
<td>65</td>
<td>44</td>
<td>21</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>214</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Of the 254 pupil-mentees, 216 took the PSHS-NCE on 04 October 2014. Two pupils made it as principal qualifiers: (1) Xael Joshua J. Sagsado from Salvador Central ES in Laoag del Norte (Region X), and (2) Nathan Wayne F. Ariston from Nuro Central ES in Maguindanao (ARMM).

ACTIVITIES BUILD COMPETENCIES OF SCIENCE AND MATHEMATICS TEACHERS.

Science Teacher Academy for the Regions (STAR) held.

An organized scheme of training programs aimed to improve the teaching and learning of science and mathematics in the country with emphasis on content and pedagogy.

SySTEM Upgrade: A Teacher Training Program on Innovative and Strategic STEM Education. This is a one-day intensive training on innovative teaching practices aimed to improve the creativity and teaching-capability among teachers on Science, Technology, Engineering, and Mathematics (STEM) education. It also showcased the SEI-developed math courseware and modules on inquiry-based science lessons for the elementary level. Education specialists from the UP National Institute for Science and Mathematics Education (UP NISMED) served as resource persons for the elementary level, while teachers from the Philippine Science High School (PSHS) System trained the teachers from secondary level.

The training was conducted at the PSHS Main Campus in Quezon City on July 26, 2014 as part of the 2014 National Science and Technology Week (NSTW). Participants comprised of 220 science and mathematics teachers from elementary and secondary schools from NCR and nearby provinces.

Teaching Elementary Mathematics through Problem Solving. Aimed at enhancing the capability of elementary teachers on the use of problem solving in teaching mathematics, the training also explained the K to 12 mathematics curriculum; the formulation of assessment items or tasks that assess higher order thinking skills; the development, implementation, critique, and improvement of a research lesson on teaching mathematics through problem solving; and the preparation of an action plan towards integration of the innovations introduced during the training.

The training was conducted in two parts: (1) Training of Trainers; and (2) The Regional Training for In-service Teachers.

1. Training of Trainers

The training of trainers was held on September 2-5, 2014 at the Teachers’ Learning Laboratory of UP National Institute for Science and Mathematics Development (UP NISMED). Participants were faculty members of six (6) partner universities, namely: Mariano Marcos State University (Region I), Central Luzon State University (Region III), Philippine Normal University (NCR), Bicol University (Region V), West Visayas State University (Region VI), and MSU-Iligan Institute of Technology (Region X), and DepEd representatives from the five universities stated above.

Participants comprised 17 faculty members from TEsIs and 4 representatives of DepEd regional offices.

2. Regional training for In-service Teachers

Faculty members of Teacher Education Institutions (TEIs) and DepEd representatives served as trainers and resource persons during the regional trainings for public elementary mathematics teachers held in the following dates and venues (See Table 15). A total of 350 mathematics teachers of the elementary level were trained in the five universities stated above.

Signing of the Memorandum of Understanding for the project STAR. A Memorandum of Understanding (MOU) between the Science Education Institute and the six partner universities was signed on December 3, 2014 at the Luxent Hotel in Quezon City. It sealed the partnership in conducting projects and activities geared towards improvement of science and mathematics education in the country.

Participants comprised 17 faculty members from TEsIs and 4 representatives of DepEd regional offices.

<table>
<thead>
<tr>
<th>Region</th>
<th>Training Venue</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Mariano Marcos State University Laoag, Ilocos Norte</td>
<td>November 19-21, 2014</td>
</tr>
<tr>
<td>II</td>
<td>Regional Education Learning Center Angeles City</td>
<td>November 25-27, 2014</td>
</tr>
<tr>
<td>V</td>
<td>Bicol University Legazpi City</td>
<td>November 26-28, 2014</td>
</tr>
<tr>
<td>VI</td>
<td>West Visayas State University Iloilo City</td>
<td>November 12-14, 2014</td>
</tr>
<tr>
<td>X</td>
<td>MSU-Iligan Institute of Technology Iloilo City</td>
<td>November 4-7, 2014</td>
</tr>
</tbody>
</table>

(Manila) Dr. Artemio-seatriz, trainer from MMSU, discussing the answer to a math problem.

(Topmost) Teacher-participants of Iligan City showcase how to teach mathematics through problem solving during their demo teaching.
Seminar teaches Disaster Risk Reduction and Management (DRRM).

Thirty-five [35] selected science and mathematics teachers from the Division of Taguig and Pateros benefited from the intensive seminar-workshop on Disaster Risk Reduction and Management (DRRM). The activity aimed to enhance the scientific knowledge of teachers on natural disasters and disaster response and integrate these in their science and mathematics subjects, as well as capacitate them on how to implement disaster management plan for the school. It was conducted on April 22-25, 2014 at the ITDI conference room, DOST compound in Bicutan, Taguig City. Experts from the Office of Civil Defense NCR, PAGASA, PHIVOLCS, DENR- Mines and Geosciences Bureau, and Philippine Red Cross served as resource persons. The topics discussed included the legal framework of the Philippine DRRM System, disaster risk profile of the country, natural disasters and their hazards, climate variability and climate change, and life-saving skills during disasters. The participants were also trained on how to inspect buildings for hazards, conduct earthquake drill, read hazard maps, weather bulletins and advisories, and to track typhoons. The participants also visited PAGASA and PHIVOLCS offices in Quezon City to learn the different equipment and operations used for weather forecasting, recording earthquakes and volcanic eruptions.

“Publish or Perish” concludes four-year series.

A three-day training entitled “Publish or Perish” was held on March 10-13, 2014 in San Mateo, Rizal. This activity was the fourth and last of a series of trainings and activities for science and mathematics of faculty members of teacher education institutes (TEIs) classified as Center of Development (COD) by the Commission on Higher Education (CHED). The training aimed to enhance the capacity of faculty members in publishing research papers for publication and updating them on the requirements of various local and international refereed journals.

There were 27 participants from the following universities:
- Catanduanes State University
- Cebu Normal University
- Central Bicol State University of Agriculture
- Holy Angels University
- Pangasinan State University
- Western Mindanao State University
- Xavier University
- Ateneo de Davao
- University of San Agustin

In 2011 and 2012, the training exposed the participants to local and global trends in Science and Mathematics Education and on the research process, respectively. On the third year, they were trained on how to package a research proposal for DOST Funding. The top three [3] research proposals were granted a research funding for implementation of the project that same year. After completion of the research, the authors presented their research output in an International Conference held at the UPNVMED in October 2013.

Resource persons were Professors Edwetha Elinore Gayon and Rachel Patricia Ramirez from UP College of Education and UP Integrated School, respectively. At the end of the training eighteen [18] papers were completed in publishable form.

Workshop improves productivity of Senior Citizens.

With the goal of elevating the role of Filipino senior citizens from passive beneficiaries to self-reliant, highly motivated, and productive members of society, a two-day workshop dubbed as “Kaya Ko Pa!” was conducted among 40 science and mathematics teachers in Tacloban City and 10 DOST Regional Office VIII staff who are 60 years old and above.

The workshop included discussions and demonstrations on promoting healthy lifestyle, health management, entrepreneurship and effective response during emergencies. Resource persons were experts from office of the Senior Citizens Affairs, Department of Health, and DOST regional offices. All the participants were given a shot of pneumococcal immunization for free.

Teachers educated in handling visually impaired students.

A one-day forum aimed at sharing to teachers new innovations in handling students with visual impairment was conducted on July 22, 2014 at the Food and Nutrition Research Institute (FRI) building. The program was facilitated by Hennnia Agapsay, a SPED Teacher, and Joyce Lopez, a visually impaired staff from the Resources for the Blind, Inc. (RBI).

Among the highlights of the program was the demonstration teaching by one elementary and one secondary teacher, where visually impaired and regular students participated. The practical tips and techniques shared helped the teachers in terms of dealing with their visually impaired students inside a regular classroom.

Everyone was inspired with the message of Ms. Roselle Ambuluyo, a very successful visually impaired student and the first blind student of Ateneo de Manila University who graduated Summa Cum Laude in BS Mathematics.
Science and Mathematics teachers enhance skills in Training Programs.

Various activities were conducted in 2014 to enhance the professional skills of Science and Mathematics teachers as well as SEI officials and employees and help them meet the new and changing demands of science and mathematics education.

Under this project, the following specialized trainings/workshops for science teachers were conducted:

1. "PGC Clinics School: Genomics and Proteomics". In partnership with the Philippine Federation of Chemistry Societies (PFCS), SEI sponsored the participation of 10 attendees to the workshop held at Villa Caceres Hotel in Camarines Sur on April 9-11, 2014 during the 29th Philippine Chemistry Congress.

2. "Microbiology: A Closer Look". This Lecture-Workshop on Research Methods in Microbiology was conducted by the Institute of Biology, College of Science, UP Diliman on 26-30 May 2014. It was aimed at training Biology and/or Research high school teachers on microbiological principles and laboratory techniques in preparation for the K to 12 Program.

3. The activities included both formal and interactive discussions, introduction to basic microbiological techniques, basic microscopy, writing and performing investigatory projects, and laboratory activities that included proper microbiological sampling techniques, culture isolation and preservation following aseptic techniques, and plasmid profiling—a more advanced technique of characterization and a molecular technique known as genetic transformation.

To broaden their choices of organism in doing microbial researches, participants surveyed eukaryotic microorganisms by examining prepared slides of fungi and algae. Lastly, the participants were introduced to phylogenetic Tree construction and bioinformatics—a system that helps in organizing, analyzing, and presenting scientific data.

Participants included 14 female and six male teachers.

4. "49th Annual BIOTA (Biology Teachers Association of the Philippines, Inc.) Convention and Scientific Sessions". The BIOTA Convention aimed to share research findings, teaching practices and experiences in the implementation of innovations in biology education to support curriculum reforms in different educational levels. The event was held at the University of Baguio, Baguio City on April 3-5, 2014 with 33 Biology teachers in attendance.

To establish linkages and give SEI officials and employees opportunities to participate in international conferences, SEI also renewed its membership to the International Association for the Evaluation of Educational Achievement.

Project HOTS gets hotter.

To help in the development of their science lessons incorporating an inquiry-based approach, 2 district science coordinators, 16 Grade 4 teachers and 1 assistant principal participated in the expanded Project Hands-On Teaching and Learning Science through Inquiry (Project HOTS) from May 20-23, 2014 at the UP NISMED. The seminar-workshop was similar to the first but with the addition of sessions on constructivism as a philosophy of teaching/learning underpinning the inquiry-based approach and a workshop on the forms of assessment appropriate for such an approach.

The participants came from Tenement Elementary School, Upper Bicutan Elementary School and Tenement Elementary School. They were joined by the district coordinators and the education program specialist of DepEd Division of Taguig City and Pateros.

A second phase, which served as the follow through of their collaborative lesson planning, was implemented in the three schools at different dates within 2014. The inquiry-based science lessons developed during the science training were implemented in Upper Bicutan Elementary School, Tenement Elementary School and Ricardo P. Cruz Sr. Elementary School of the DepEd School Division of Taguig City and Pateros.
MORE INNOVATIONS IN SCIENCE AND MATHEMATICS
EDUCATION UNVEILED.

Development and pilot testing of Mathematics Courseware completed.

Grades 2-6 pupils and 50 Mathematics teachers of 20 public elementary schools became the beneficiaries of the digitized learning materials designed to improve the learning and performance of students as well as enhance the content knowledge, pedagogical capacity and critical thinking skills of the teachers in teaching mathematics.

DOST-SEI’s project partners The Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) and Advanced Science and Technology Institute (ASTI) facilitated the provision of netbooks with the Interactive Courseware. Each school received 25 units of netbooks.

The 50 mathematics teachers first underwent a one-week training on the use of the netbooks and familiarization of the Interactive Courseware on January 27-30, 2014 at the DepEd Regional Educational Learning Center (RELC) (See Table 16).

The complete Interactive Courseware package contains 44 modules. The digitization of the first batch of 24 modules comprising 3rd and 4th quarter lessons was completed in 2013 and pilot tested from February to March 2014, immediately after the training of the teachers. After the digitization of the remaining 20 modules for the 1st and 2nd quarter lessons, the second batch of pilot testing was conducted from August to September 2014.

The 44 modules were finalized after the pilot testing and the complete package in one CD was replicated for distribution. The Techno Package was launched on December 2, 2014 at Luxent Hotel, Quezon City.

Secondary Level Mathematics Interactive Courseware launched.

Interactive Courseware for Grades 7 and 8 were also launched on December 2, 2014 at the Luxent Hotel in Quezon City.

The Grade 7 courseware contains 132 modules, 73 in Science and 59 in Mathematics. Topics in Science include Matter, Force, Motion, and Energy; Living Things and Their Environment; and Earth and Space. Topics in Mathematics include Numbers and Number Sense; Patterns and Algebra; and Geometry.

The Grade 8 courseware contains 117 modules, 73 in Science and 44 in Mathematics. Topics in Science include Parts and Functions; Ecosystems; Heredity Inheritance and Variation of Traits; Structures and Functions; Evolution; and Biodiversity. Topics in Mathematics include: Linear Equations; Quadratic Equations; Rational Algebraic Equations; Integral Exponents; Radicals; Arithmetic Sequence; and Geometric Sequence.

More than a hundred participants from the University of the Philippines National Institute for Science and Mathematics, Education Development, Department of Education, Philippine Science High School, Knowledge Channel, and different public secondary schools received the two sets of courseware.

These sets of courseware were also uploaded to the courseware website (www.courseware.dost.gov.ph) and are available for free download. They will also be replicated in 2015 for dissemination to more secondary schools nationwide.

### TABLE 16: List of elementary schools and number of teachers trained on the use of interactive mathematics courseware and netbook

<table>
<thead>
<tr>
<th>REGION</th>
<th>Schools</th>
<th>Province</th>
<th>No. of Teachers Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Pratima Central Elementary School</td>
<td>Panpipasa</td>
<td>2</td>
</tr>
<tr>
<td>II</td>
<td>Tuguegarao West Central School</td>
<td>Cagayan</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>Nueva Ecija Central Elementary School</td>
<td>Nueva Ecija</td>
<td>2</td>
</tr>
<tr>
<td>IVB</td>
<td>Jose L. Basa Central School</td>
<td>Davao City</td>
<td>2</td>
</tr>
<tr>
<td>V</td>
<td>Caramoan Central Elementary School</td>
<td>Caramoan</td>
<td>2</td>
</tr>
<tr>
<td>VI</td>
<td>Rabid Pilot School</td>
<td>Albay</td>
<td>2</td>
</tr>
<tr>
<td>VII</td>
<td>Sta. Catalina Central Elementary School</td>
<td>Negros Oriental</td>
<td>2</td>
</tr>
<tr>
<td>VIII</td>
<td>Depuy Pilot Demon School</td>
<td>Davao City</td>
<td>3</td>
</tr>
<tr>
<td>IX</td>
<td>Oroquiapo Central Elementary School</td>
<td>Oroquiapo</td>
<td>3</td>
</tr>
<tr>
<td>X</td>
<td>Jaro Central Elementary School</td>
<td>Iloilo</td>
<td>2</td>
</tr>
<tr>
<td>XI</td>
<td>Panay Island Central Elementary School</td>
<td>Panay Island</td>
<td>2</td>
</tr>
<tr>
<td>XII</td>
<td>Malayan Central Elementary School</td>
<td>Malayan</td>
<td>2</td>
</tr>
<tr>
<td>XIII</td>
<td>Lapu-Pi Elementary School</td>
<td>Lapu-Pi</td>
<td>2</td>
</tr>
<tr>
<td>XIV</td>
<td>Brg. cảnh</td>
<td>Brg. cảnh</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL: 50
Evaluation of the Effectiveness of CAI Modules in Mathematics for Intermediate Grade Schools.

The SEI-funded project was implemented by the Lasallian Institute for Development and Educational Research (LIDER) of De La Salle University (DLSU) in June 2013 and completed in September 2014. It is aimed at evaluating the effectiveness of the DOST-SEI CAI modules as perceived by the end users (teachers and pupils) in public schools in the Metro Manila area.

The results showed that CAI modules are effective in teaching and learning mathematics for intermediate grade schools. However, various recommendations from the end-users were considered to further improve the CAI modules.

Mobile IT Classroom (MITC) Project gets equipment upgrade.

The Mobile Information Technology Classroom (MITC) is a customized bus equipped with laptop computers, interactive and audio visual learning materials in Science and Mathematics. There were three (3) MITC buses deployed in Region 5 (Camarines Sur), Region 7 (Cebu), and CARAGA (Surigao del Norte) to promote IT awareness through hands-on computer and other interactive learning activities to elementary and secondary students and teachers.

Upon inspection, it was recommended that the on-board laptop computers, printer and LCD projector of the MITC bus deployed in Camarines Sur be replaced. The Partido Development Administration (PDA) and DOST-SEI replaced the said equipment in the same year.

Another MITC bus deployed in Cebu City was pulled out and shipped back to SEI. The Memorandum of Agreement between the Local Government of Cebu and SEI expired in June 2013. Likewise, another MOA among the SEI, Local Government of Suroio del Norte, Department of Education-Division of Surigao del Norte, and DOST-Caraga expired in November 2013.

The MITC bus with plate number SFK 514 currently deployed in Cebu.
HUMAN RESOURCES.

S&T Human Resources study published.

A technical report was prepared and published in 2014 regarding a benchmark study estimating the number of S&T human resources in various professions. Such data can be used to give policymakers a better understanding of the country’s demand for and supply of personnel in S&T, and enable them to craft policies toward investing in human capital.

Estimates were established using the 1990, 2000, and 2010 census data from the National Statistics Office (NSO), which is now part of the Philippine Statistics Authority (PSA).

The report revealed that the most numbered S&T professions were nursing and midwifery, followed by engineering and related professions, as well as health professionals. On the other hand, the least numbered S&T occupations were mathematics, statistics, physicists, chemists, and related professions, as well as life science professions.

While the number of S&T professionals increased over the three survey periods, those in some sectors noticeably declined. There was a huge drop recorded among S&T professionals – nursing and midwifery – has also been shown across the years to have the highest number of professionals leaving the country.

This finding is based on the study detailing the extent of S&T skills migration which was updated in 2014 covering the period 2005-2013. The study has two components, namely: 1) Emigration of Science and Technology-Educated Filipinos (Permanent Migrants), 2) OFWs with S&T occupations (Temporary migrants). Secondary data from POEA for the temporary migrants and CFO for permanent migrants were utilized.

The next biggest group of S&T professional migrants include engineers and related professionals, as well as health professionals. In terms of number, the engineering professional group apparently increased from around 3,000 in 2005 to almost 11,000 in 2013 (7,337). On the other hand, the group of health professionals had negligible change through the years (See Figure 6).

Other details of the study will be included in the published report to be released upon completion of data gathering and analysis phase of the migration study in 2015.
Tracer Study of DOST-SEI Scholar Graduates intensified.

Tracking the scholars graduates of the various scholarship programs being implemented by the DOST-SEI is a continuing activity of the Institute. Tracer Forms were distributed to various DOST attached agencies, including Regional Offices in cooperation with the Scholarship Project Staff of various regional DOST offices. A total of 496 accomplished forms were collected, reviewed and encoded. To intensify the data gathering, an on-line web based survey form using googledocs technology, including EXCEL and PDF version were being designed as alternative strategies for data collection, while the development of an information system of the project is still on-going.

The study aims to assess the effectiveness of the scholarship programs and provide inputs in determining policy recommendations that will improve the administration of the scholarship programs and the status of the country’s S&T sector.

Feedback Survey Questionnaire given to 2015 S&T Undergraduate Scholarship applicants.

During the scholarship application period from August to September 2014, feedback questionnaire forms were distributed to the applicants with the goal of providing valuable inputs to help improve the administration of the scholarship programs being offered by the Institute, and the conduct of application process in particular. This survey was conducted in coordination with the Scholarship Division.

A total of 862 accomplished Feedback questionnaires were retrieved by the end of the application period. The completed report will be available by end of December 2015.

Exit Survey questionnaire disseminated.

Considering the increasing number of DOST-SEI scholars who have benefited from the scholarship program every year, a feedback mechanism dubbed the Exit Survey questionnaire was developed and distributed to various network institutions and DOST Regional Offices by end of September 2014. The goal was to provide information about the conduct of the scholarship program, its relevance to the scholars personal lives, and recommendations regarding its implementation and management that would help legislators, academic, researchers, and SEI management.

A total of 63 accomplished Exit Survey questionnaires were retrieved by end of December 2014 from the first batch target network institutions. About 95% of the graduating scholars responded to the survey among those network institutions who submitted the accomplished questionnaires. The data collection/distribution and follow-up of Exit Survey questionnaires from other network institutions is on-going. The data processing and analysis will be done in 2015.

DOST-SEI EVALUATES SELECTED PROJECTS.

The institute recognizes the need to evaluate event-oriented projects to further improve their implementation in the future. Below are some of the findings for each project evaluated.

Innovation and Climate Science Camp

The 2014 Science Camp, sponsored by Hyundai Asia Resources, Inc. Foundation, consisted of Geology and Marine Science camps, each of which was evaluated using separate tools.

Profile of Campers

The Science Camp drew the participation of 40 students and 20 teachers from 20 high schools from Region II, Region IV-A, and NCR. Most of these were public high schools. More than half (57.5%) of the students were boys, while only one male teacher was among the 20 teachers.

Geology sub-camp

Using a 4-point Likert scale, the top five factors out of 24 statements assessed by campers were the following: 1) I enjoyed doing the field activities (3.96); 2) The facilitators are friendly and accommodating (3.97); 3) The speakers have mastery of the subject matter (3.93); 4) I learned a lot from the field activities (3.96); and 5) The topics are relevant to my teaching (3.91).

Among the factors with relatively low scores were: The topics are relevant to my decision on what to take in college (2.75); I intend to pursue a career in science because of the camp (3.33); I felt like a scientist because of the camp (3.42). The topics discussed presented refreshingly new science concepts (3.52) and The field activities are well-organized (3.53).

The first two factors with low scores indicate that the students already have preconceived interests and attitude towards science that cannot be easily altered by one-time activities. It has been recommended that this camp should also accommodate lower year levels instead of only fourth year high school students. The earlier their exposure to these activities, the more likely they will be influenced to take Science courses in college.

Six out of ten campers rated their overall experience as “well above expectations.” Nobody gave a negative rating. Thematic analysis of responses to open-ended questions on other comments and suggestions revealed 27 positive remarks, 22 commendations and five grateful remarks. Fourteen suggestions were raised, particularly about extension of camp duration and longer time for field activities such as snorkeling and coral reef exposure.

World Space Week 2014

Global Navigation Satellite lecture and hands-on activity

Using a 3-point scale, relatively low scores were given to the following statements: The forum encouraged me to pursue a career in space science in the future (2.53) The time allotted for the forum was just enough (2.64). The forum increased the level of my interest in Space Science (2.66). I understood the ideas/concepts being portrayed in the hands-on activities (2.67) and The keynote speaker had a thorough grasp of the subject (2.97).
Among the aspects with high scores were the following: The venue was appropriate for the activities (2.94); Generally, the event was well-planned (2.93), The facilitators were efficient, helpful and accommodating (2.92). The keynote speaker ably answered the questions posed (2.90), and The keynote speaker actively invited questions (2.90).

Eight out of ten participants rated that event above their expectations. Other comments and suggestions from students were mostly positive and congratulatory remarks. Practical suggestions focused on improvement of food choices, no serving of food during hands-on activity, and provision of presentation handouts.

**Training on Water Rocket making**
Highly rated statements on this activity were the following. Generally the training was well-managed (2.96), I learned a lot from the training (2.88); The venue was appropriate for the activity (2.87); The facilitators were efficient, helpful and accommodating (2.85); And The trainer came prepared for class (2.80). Six out of ten participants rated the event above their expectations.

**Astronomy for Filipino educators**
The teacher-participants gave high scores to the general management of training, the preparedness of trainer and his mastery of the subject matter; and efficiency and friendliness of facilitators. However, lowest score was given to the length of training time. Overall, 64% rated that the training was above their expectations. When asked if they can apply what they learned from the training, all said “yes.” Their responses to open-ended questions were mostly grateful and complimentary. Among the suggestions raised included the extension of training and provision of handouts.

**Water Rocket-launching competition**
Using a 3-point scale, the participants gave high ratings to the statements: The organizers secured the safety of participants during the competition proper (2.94), I had fun participating in the competition (2.94). The judges were fair in deciding the winners (2.93); Group activity enhanced a sense of cooperation and unity among members (2.88). The activity promoted a learning and healthy competition (2.88). The statement about the clarity of guidelines of the competition garnered the lowest rating (2.84).

**Poster Making contest**
Participants gave a perfect score to the statement: Ang tema sa poster making ito na nagbigo sa akin ng interes sa science lalo na sa Space Science. Statements with high ratings were: Malawangan ang panuntunan sa on-the-spot poster making contest (4.90); Nag-enjoy ako sa paggawa ng poster (4.70); Tama ang desisyon ng mga karada sa mga panahon sa poster making (4.70). A relatively low score was given to the statement: Ang tama sa poster making ay angkop at napapanahon.

**#Push4Science Campaign**
More than half of students (65.2%) reached by the campaign did not know about DOST-SEI scholarship programs. Fifty-eight percent (58%) of those with prior knowledge of the programs obtained the information from their teachers, while others learned about these through their friends/associates, the internet and posters.

Forty percent (40%) of those who learned about the scholarship through the campaign changed their initial preferred courses to S&T related ones. Among the courses they planned to take include: Education major in Science and Mathematics, Engineering, Environmental Science, Geology, Information Technology, and Statistics. Nine out of ten students wanted to apply for the DOST-SEI scholarship after learning about it and its privileges. Possibly hindrances to applying for the scholarship were identified as the following: Financial constraint for transportation expenses; difficulty in securing the requirements; distance to application and test centers; parents’ reluctance to let them study far away from their homes; their choice is not a priority S&T course; and low interest/grades in Science and Mathematics subjects.

**Science Explorer**
Students participating in Science Explorer activities gave high rating for the statement: Nakakatulong ang mga gawain naming Science Explorer (4.88). Least agreement was given to the statement: Nagkaroon ako ng interes na maging scientist o engineer (4.77); Nagko-competition (4.77); Nagpakita ang interes na maging scientist o engineer-balang-araw (4.28). This indicates that more effort must be exerted to develop awareness and interest in science and mathematics. More elementary students gave this statement a higher rating than high school students, indicating that sustained effort must be made to maintain interest in science starting at a young age. A significant number of students suggested additional topics related to Space, Planets and Universe (85%), while other topics included Robotics and Modern Technology (14%), Plants and Animals (7%) and Matter & Chemistry (6%).

**Tagisang Robotics**
Almost all participants, both students and coaches, gave positive ratings to the event. The top five highest rated aspects included the following: Appropriateness of venue for the competition; sense of team spirit and espíritu de corps; conducive venues of venue for training; performance of assigned roles; and clarity of each member. Low rated aspects included support given by the community and school; usefulness of instructions given in the website; technical advice given by engineers; and adequacy of time given in the competition.

Notably, there were 14 cases of students who changed their initial choice of college course to pursue science. Engineering, Information Technology, and Computer Science were among the S&T courses they identified.

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*Dr. Reygal Maritess, Focal Person for PISSEP shares his knowledge and enthusiasm with high school students from Palawan to inspire them to get into STEM courses by explaining the career opportunities related to space science.*
Success in building technology capacity is greatest when it is anchored to an explicit national science and technology strategy. If implemented flexibly and carefully, its integration with the needs of the country’s education system and its development priorities will make such linkages produce direct positive impacts on our daily lives.

While investments in ICT have vast importance, these should be complemented by concomitant investments in human capital training and strengthening of established networks. Bridging the technological and social empowerment spheres is critical in enabling inclusive growth, overcoming illiteracy, enhancing productivity, and improving the welfare of the common citizen.
INFORMATION NETWORK SYSTEMS UPGRADED.

To keep pace with the demands of its operations, DOST-SEI invested in the enhancement of its network infrastructure and the IT skills of its workforce. The Institute's internet connection was upgraded from 12 Mbps to 18 Mbps, to provide faster and more reliable speed. While seven new network switches were acquired to replace the outdated distribution switches and speed up the transfer of data within the Institute’s LAN. License productivity software such as Microsoft Office, Adobe Photoshop and windows operating systems were acquired to provide for special network user requirements. Storage disks and back-up devices were also installed to give more room for electronic files building up within the institute expands its operations.

The MIS unit continued to administer www.sei.dost.gov.ph, the agency’s website; www.tagisangrobotics.ph, the portal of the Tagisang Robotics project that enhances the capabilities of high school students in robotics; and www.science-scholarships.ph, the portal of the scholarship program of the agency. The contents of all these websites are fed to the MIS unit by different units of the institute.

The MIS staff also participated in committees inside and outside of the Institute's network of linkages. These include memberships to the DepEd’s Bids and Award Committee II – Technical Working Group that evaluates the demo units of prospective suppliers for the DepEd's Computerization Program of ICT that evaluates all the ICT-related acquisition of the DepED. The MIS personnel was also part of the SEI's Inspection Committee for the inspection process of all the purchases of the Institute and the Technical Evaluation Team for the ICT-related purchases of the Institute.

Technical support for the IT network users of the Institute was continuously provided to ensure functional efficiency.

SEI Director Dr. Ariseto T. Rijo gets interviewed by the media at the launch of the 2014 World Space Week in Puerto Princesa, Palawan.

STRATEGIC COMMUNICATION PLANS IMPLEMENTED FOR SCIENCE EDUCATION.

Several media-based strategies were implemented in 2014 as part of DOST-SEI’s strategic communication plan to promote youth science programs, enhance the interest of students taking up STEM courses and promote S&T to the general public.

The news articles sent out to different media outlets made 96 placements in broadcast, print and cybermedia. (See Figures 6 & 7.) The agency also participated in the 2014 National Science and Technology Week with the theme “Philippines: A Science Nation Meeting Global Challenges.” SEI, together with the National Academy of Science and Technology (NAST) and the Philippine Science High School System, put up an exhibit depicting the achievements the agencies have achieved under “DOST Outcome 7: Highly Skilled and Globally Competitive S&T Human Resources in Support of the National S&T Programs.”

The exhibit generated a total of 2,057 viewers including those from the regional S&T cluster exhibits participated by SEI in Lapu-Lapu City, Albay, Tuguegarao City, Cagayan, Mandaluyong City, Cebu, and Davao City.

SEI also successfully conducted the “Scholars Night,” an evening of honoring the top DOST scholars of the country in a program of testimonials and entertainment. Top scholars graced the event and gave words of wisdom to budding scholars graduates who were about to take on major roles in the Philippine science community. Actor-entrepreneur Christian Hidalgo, academician Dr. Reynaldo Vea, and DOST Region IX Director Dr. Brenda Nazzarelli gave talks on the role of science in entrepreneurship, the academe, and government, enlightening the audience on the importance of science in these fields.

The Institute also used traditional media outlets that helped make the public know more about SEI and the projects it undertakes.

SEI also conducted the 2014 Science Film Festival, an annual film exhibition that uses science films to entice the youth to get into careers in science. A total of 18,610 students viewed the films in all DOST regional offices and five Philippine Science High School campuses.

SEI maintains social media accounts for its different programs, reaching as much as 120,000 netizens. The SEI official website also got to 60,000 viewers in 2014.
DOST-SEI IMPLEMENTS GENDER AND DEVELOPMENT PROGRAM.

In response to Memorandum Circular 2011-01 on the creation, strengthening and institutionalization of the Gender and Development (GAD) Focal Point System, and to PCW-NEDA-DM Joint Circular 2012-01 on the preparation of GAD Plan to implement Magna Carta of Women, DOST-SEI conducted various activities that aim to create gender awareness and identify gender issues and perspectives.

The SEI GAD Program consists of a series of activities which are organization-focused and client-focused. Organization-focused activities seek to implement gender-responsive policies, programs, and projects that address gender issues of employees, particularly those that affect women’s performance. Client-focused activities, on the other hand, seek to address the gender issues of DOST-SEI’s clients. GAD activities may also include the review and integration of GAD in policies, database systems, monitoring and evaluation, or integration of GAD in training modules of government employees.

In 2014, the following activities were successfully implemented:

**DOST-wide Women’s Month Celebration**

With the theme “Juana, ang Tatag mo ay Tatag Natin sa Pagbangon at Pagsulong!”, SEI converged with other DOST attached agencies in celebration of Women’s Month which featured different activities such as: Juana Talk Forum, Juana Walk for a Cause, Juana Dance (Zumba/Morning Exercise), Exhibits and Trade Fair, and Make-over session by Ricky Reyes. All SEI employees participated in these activities wearing their GAD shirts.

**Philippine Commission on Women’s “Human Women’s Symbol Formation”**

On March 8, 2014, SEI supported PCW’s activity and joined other DOST agencies, government agencies, non-government organizations, state colleges and universities and other civil society groups to celebrate the International Women’s Day at Quirino Grandstand in Manila with the theme “Sulong Juana! Human Woman Symbol Formation.” This was a symbolic kick-off activity to celebrate women’s resilience, strength and various roles in nation-building and uniriting volunteerism in times of disasters, conflicts, and other emergency situations. Twelve (12) employees represented SEI in the event that set the largest human gender symbol in the Guinness World Records.

**Gender Analysis and Gender Mainstreaming Seminar-Workshop for DOST-SEI**

On October 8-9, 2014, the GAD Focal Point System of DOST-SEI conducted a training which aims to increase awareness and understanding of Philippine GAD Program and SEI’s role in GAD, and broaden understanding of the key concepts and principles of GAD for the agency’s effective GAD mainstreaming. The activity was held at Fiona’s Farm in Magalang, Pampanga which was attended by 14 employees from various divisions of the Institute. Topics included gender mandates, gender analysis and mainstreaming concepts, and workshop on using a tool on Harmonized Gender and Development Guidelines (HGDG) for attributing programs/projects. Ms. Marita C. Pimentel, PCW-GAD Resource Pool member, was the Resource Person during the activity.
NOMINATION FOR TECHNOLOGY PACKAGE FOR STUDENT LEARNING EMPOWERMENT PROJECT.

Last February 2014, the project was nominated to the award giving body of the Information Society Innovation Fund (ISIF Asia), a program that aims to stimulate creative solutions to ICT development needs in the Asia Pacific region.

The Student Learning Empowerment Project nominated initially involved the development and dissemination of Grade 1 mathematics courseware. With the program’s success, courseware for Grades 2 to 6 eventually followed to complete the set of technology package.

The project contributes to the improved delivery of educational content especially in the primary education, and consequently, to the improvement of the quality of Philippine Education.

It was nominated for utilizing efficient and affordable innovations in ICT, allowing students to adapt to new ways of learning in the information age.

The project also used innovative and sustainable technology and other resources to uplift the quality of education in the Philippines. It employed local talents for the benefit of the marginalized sector and made narrower the technological divide among students.

It was among the 93 nominations received by ISIF Asia in 2014 from 16 economies in the Asia Pacific region.
DOST-SEI STRENGTHENS EDUCATIONAL TIES ABROAD.

Traveling, it is said, presents one of the greatest educational experiences for any individual, as it opens up the mind to the world’s cultural and intellectual diversities. With the purpose of maximizing educational opportunities that lie abroad, DOST-SEI participated in 2014 in two programs designed to broaden the horizons for the youth and educators alike.

Japan-East Asia Network of Exchange Students and Youth.

DOST-SEI sent 79 undergraduate and graduate scholars from various S&T fields in the field of Agriculture participated in the 11th Batch of the JENESYS 2.0 program, which offers youth exchanges between Japan and ASEAN member-states. This program is aimed at revitalizing the Japanese economy, increasing tourism, and promoting global understanding of Japanese values.

The nine-day program includes visits to Japanese corporations; visits to provincial areas of Japan to enhance understanding of Japan’s strengths, local cultures, attractions, and values; and engagements in first hand experiences on “Japan-Brand” by visiting historical architectures, World Heritage sites, and exhibitions promoting high-tech products in Japan.

The program included pre-departure orientation on May 8 and 16, 2014. Afterwards, the Philippine delegation joined the other groups from Malaysia, India and Laos. The local team was supervised by Ms. Ma. Daisy A. Demoni, Ms. Charilyn Joy M. Layus and Ms. April s. Dumayag of the S&T Scholarship Division, SEI.

Australian Awards Fellowship.

The Australian Awards Fellowship (AAF) program is a customized training for Philippine Science High School Campus Directors and DOST-SEI staff addressing issues on managing current educational reforms in the Philippines, and strengthening STEM education in response to the shift to the new K to 12 curriculum.

Held at the Queensland University of Technology (QUT) in Brisbane, Australia, the program was divided into four (4) modules. The first module was on Executive Leadership Program that was held from April 14-18, 2015. It cultivated cohesive leadership teams and system thinking leaders in PSHS and SEI. It focused on authentic leadership, qualities of a good leader, leadership styles, and challenges of a leader. Towards the end of the module, the participants were introduced to the concept of mind-mapping as an approach to build a Re-Entry Action Plan or (REAP).

The next module dealt with Curriculum Development, Assessment and Evaluation. It was held from April 21-May 2, 2014. Lectures, workshops and activities were tucked in this module. Among the topics discussed were: Comparison of Queensland and Philippine curriculum, developing generic skills and competencies, assessment and backward mapping, STEM-ICT interventions, inclusive education, using data to improve school results, among others. The topics served as springboard for drafting the curriculum framework of PSHS and inputs to the REAP as well.

Module 3 dealt with international benchmarking on curriculum development. Traveling to Adelaide and Melbourne, the participants visited secondary schools, observed classroom practices, learned about the curriculum, and also visited a Science Museum.

The last Module was Re-entry action Planning (REAP) and the preparation of Output. Two REAPs were prepared by SEI and presented to the panel composed of members from the QUT Faculty.
<table>
<thead>
<tr>
<th>TITLE OF TRAINING/SEMINARS/TRAININGS</th>
<th>VENUE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GARP: Sustaining Public Trust through Accountability, Credibility and Transparency</td>
<td>DOST Executive Lounge, DOST Compd., Bicutan</td>
</tr>
<tr>
<td>2</td>
<td>Public Sector Accounting Standards (PSAS) and Revised Chart of Accounts (RCA)</td>
<td>Commonwealth Ave., Contributions Hall, Quezon City</td>
</tr>
<tr>
<td>3</td>
<td>Policy Form on Teaching &amp; Learning with Tablet Computers</td>
<td>Rockwell Hotel, Parañaque</td>
</tr>
<tr>
<td>4</td>
<td>Leave Administration Center for Effectiveness</td>
<td>21 Kalayaan St., Quezon City</td>
</tr>
<tr>
<td>5</td>
<td>Enhanced Training on Appointments Preparations</td>
<td>21 Kalayaan St., Quezon City</td>
</tr>
<tr>
<td>6</td>
<td>Making A Difference through Collaboration: A Knowledge Session on Event Management II</td>
<td>21 Kalayaan St., Quezon City</td>
</tr>
<tr>
<td>7</td>
<td>1st International Conference on Sustainable Proactive Advancements in Civil Engineering (SPACCE 2014)</td>
<td>Shilla Asia, Fort Bonifacio Global City, Taguig</td>
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<tr>
<td>8</td>
<td>2014 MS Symposium</td>
<td>Cebu Waterfront Hotel, Cebu City</td>
</tr>
<tr>
<td>9</td>
<td>Advanced PHP &amp; MySQL</td>
<td>UPNISMED, Diliman, Quezon City</td>
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<tr>
<td>10</td>
<td>Training on Enhancing DOST Human Resource Capabilities on Advocacies in Civil Engineering (SPACE 2014)</td>
<td>SMX-Aura, Subic Bay Exhibition and Convention Center, Subic Freeport Zone</td>
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<td>11</td>
<td>&quot;Lessons from Manila: Disaster Recovery of Records and Library Services&quot;</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
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<tr>
<td>12</td>
<td>Motivation Techniques: From Gaming to Learning</td>
<td>DOST Executive Lounge, DOST Compd., Bicutan</td>
</tr>
<tr>
<td>13</td>
<td>Fraud Awareness, Detection and Prevention</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>15</td>
<td>International Conference on Teacher Education-2014</td>
<td>Josephine S. Feliciano – Master of Arts in Education major in Chemistry Education</td>
</tr>
<tr>
<td>16</td>
<td>Disaster Risk Reduction Management</td>
<td>Mr. Bong D. Ledesma – Science Research Specialist II</td>
</tr>
<tr>
<td>17</td>
<td>Outcome-Based Monitoring and Evaluation of S&amp;T Programs/Projects</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>18</td>
<td>International Conference on S&amp;T Education</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>19</td>
<td>Basic SPSS Training for Researchers</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>20</td>
<td>Disaster Risk Reduction Management</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>21</td>
<td>Outcome-Based Monitoring and Evaluation of S&amp;T Programs/Projects</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
</tr>
<tr>
<td>22</td>
<td>International Conference on S&amp;T Education</td>
<td>Ms. April S. Dumayag – Science Research Specialist II</td>
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**Scholars Under SEI Staff Development Program**

<table>
<thead>
<tr>
<th>STATUS</th>
<th>NAME</th>
<th>COURSE</th>
<th>TYPE OF SCHOLARSHIP</th>
<th>START OF SCHOLARSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randolf O. Sasota</td>
<td>Doctor of Philosophy in Education (Research and Evaluation)</td>
<td>Part-time</td>
<td>1st Semester AY 2013-2014</td>
<td></td>
</tr>
<tr>
<td>On Extension</td>
<td>April S. Dumayag</td>
<td>Master of Arts in Education major in Chemistry Education</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>On Extension</td>
<td>June G. Soliter</td>
<td>Master of Arts in Education major in Chemistry Education</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Suspended</td>
<td>Mark Ivan C. Roblas</td>
<td>Master of Development Communication</td>
<td>Start suspension 1st semester AY 2012-2013</td>
<td>1st Semester AY 2012-2013</td>
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</table>

**Appointments Prepared/Issued**

**Promotions:**
- Ms. Rudy B. Lafi – Chief Science Research Specialist
- Ms. June Antonia R. Tiuano – Senior Research Specialist
- Ms. Peter Gerry P. Gavina – Senior Research Specialist
- Ms. Jobelle P. Gayas – Science Research Specialist II
- Ms. April S. Dumayag – Science Research Specialist II
- Ms. April S. Dumayag – Science Research Specialist II

**SCHOLARSHIP**

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<tr>
<td>1st Semester</td>
<td>1st Semester</td>
<td>1st Semester</td>
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**ORIGINAL APPOINTMENT:**
- Ms. April S. Dumayag – Science Research Specialist II

**SCHOLARSHIP**

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<tr>
<td>1st Semester</td>
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<td>1st Semester</td>
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</table>

**APPOINTMENTS PREPARED/ISSUED**

- Ms. April S. Dumayag – Science Research Specialist II
- Ms. June Antonia R. Tiuano – Senior Research Specialist
- Ms. Peter Gerry P. Gavina – Senior Research Specialist
- Ms. Jobelle P. Gayas – Science Research Specialist II
- Ms. April S. Dumayag – Science Research Specialist II

**SCHOLARSHIP**

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<tr>
<td>1st Semester</td>
<td>1st Semester</td>
<td>1st Semester</td>
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</tbody>
</table>

**APPPOINTMENTS PREPARED/ISSUED**

- Ms. April S. Dumayag – Science Research Specialist II
- Ms. June Antonia R. Tiuano – Senior Research Specialist
- Ms. Peter Gerry P. Gavina – Senior Research Specialist
- Ms. Jobelle P. Gayas – Science Research Specialist II
- Ms. April S. Dumayag – Science Research Specialist II

**SCHOLARSHIP**

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<tbody>
<tr>
<td>1st Semester</td>
<td>1st Semester</td>
<td>1st Semester</td>
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</table>

**APPPOINTMENTS PREPARED/ISSUED**

- Ms. April S. Dumayag – Science Research Specialist II
- Ms. June Antonia R. Tiuano – Senior Research Specialist
- Ms. Peter Gerry P. Gavina – Senior Research Specialist
- Ms. Jobelle P. Gayas – Science Research Specialist II
- Ms. April S. Dumayag – Science Research Specialist II

**SCHOLARSHIP**

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<tbody>
<tr>
<td>1st Semester</td>
<td>1st Semester</td>
<td>1st Semester</td>
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</table>
## RECIPIENTS OF LOYALTY AWARD
(Per CSC MC No. 06, s. 2002)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Period of Continuous Government Service</th>
<th>No. of Years in the Gov’t Service with Corresponding Loyalty Award Received</th>
<th>No. of Loyalty Award Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD</td>
<td>Jovette T. Boya*</td>
<td>06-01-1995 to 05-31-2010</td>
<td>15</td>
<td>2</td>
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<tr>
<td></td>
<td>Mana Teresa B. De Guzman</td>
<td>01-01-1990 to 12-31-2014</td>
<td>25</td>
<td>Waiting for 1000 Certification on Loyalty Award received</td>
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<tr>
<td>FAD</td>
<td>Ada T. Ayran</td>
<td>01-21-1974 to 05-22-2014</td>
<td>35</td>
<td>6</td>
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<tr>
<td></td>
<td>Ricaquel M. Teodin</td>
<td>07-09-1984 to 07-08-2014</td>
<td>25</td>
<td>4</td>
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<tr>
<td></td>
<td>Josefina S. Sta. Maria</td>
<td>01-05-1981 to 01-04-2014</td>
<td>30</td>
<td>3</td>
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<tr>
<td></td>
<td>Luz S. Remon</td>
<td>04-02-1984 to 04-01-2014</td>
<td>25</td>
<td>4</td>
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<tr>
<td></td>
<td>Anita E. Gorgonio</td>
<td>01-02-1995 to 01-01-2014</td>
<td>15</td>
<td>2</td>
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<tr>
<td></td>
<td>Susan A. dela Peña</td>
<td>02-01-1997 to 03-31-2014</td>
<td>15</td>
<td>2</td>
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<td></td>
<td>Melba Teresa R. Castillo</td>
<td>06-16-1983 to 06-15-2014</td>
<td>30</td>
<td>5</td>
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<tr>
<td>STSD</td>
<td>Alicia L. Anzunon</td>
<td>06-18-1973 to 06-17-2014</td>
<td>35</td>
<td>6</td>
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<tr>
<td></td>
<td>Ma. Dario A. Demarko</td>
<td>09-26-1990 to 09-25-2014</td>
<td>20</td>
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<tr>
<td></td>
<td>Ma. Rene C. Aghau</td>
<td>02-01-1997 to 01-31-2014</td>
<td>15</td>
<td>2</td>
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</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Period of Continuous Government Service</th>
<th>No. of Years in the Gov’t Service with Corresponding Loyalty Award Received</th>
<th>No. of Loyalty Award Received</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ruby B. Luha</td>
<td>07-01-1982 to 07-01-2002</td>
<td>30</td>
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<td></td>
<td>Rafael L. Olivar</td>
<td>01-02-2001 to 01-01-2014</td>
<td>10</td>
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<td></td>
<td>Imelda S. Sano</td>
<td>10-05-1979 to 10-04-2000</td>
<td>30</td>
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<tr>
<td></td>
<td>Geraldine L. Sabda</td>
<td>02-01-1997 to 01-31-2014</td>
<td>15</td>
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<tr>
<td></td>
<td>Vergie P. Rebata</td>
<td>09-01-1995 to 08-31-2014</td>
<td>15</td>
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<tr>
<td>SEID</td>
<td>Amparo E. Orante</td>
<td>04-16-1984 to 04-15-2014</td>
<td>25</td>
<td>4</td>
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<tr>
<td></td>
<td>Cynthia T. Gayya</td>
<td>09-04-1994 to 09-04-2004</td>
<td>25</td>
<td>4</td>
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<tr>
<td></td>
<td>Rodelio G. De Asis</td>
<td>08-01-1991 to 07-31-2014</td>
<td>20</td>
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<tr>
<td></td>
<td>Edelmira B. Bustamante</td>
<td>07-27-1979 to 07-26-2014</td>
<td>30</td>
<td>5</td>
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<tr>
<td></td>
<td>Josephine S. Feliciano</td>
<td>10-15-1997 to 10-14-2014</td>
<td>15</td>
<td>2</td>
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<td></td>
<td>Ma. Lourdes V. Felicitas</td>
<td>01-02-1996 to 01-01-2014</td>
<td>15</td>
<td>2</td>
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* Transferred to SEI Effective April 1, 2014

Note: 1st Loyalty award received equivalent to 10 years of government service
Managing SEI Resources

Organizational Chart

### STATEMENT OF ALLOTMENT & OBLIGATIONS
(Amount In Thousand Pesos)

<table>
<thead>
<tr>
<th>PAPS</th>
<th>PS</th>
<th>MOOE</th>
<th>CO</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td></td>
<td>Allotment</td>
<td>Obligation</td>
<td>Allotment</td>
<td>Obligation</td>
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<tr>
<td><strong>GENERAL ADMINISTRATION AND SUPPORT SERVICES</strong></td>
<td>18,407</td>
<td>18,407</td>
<td>7,862</td>
<td>6,979</td>
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<td></td>
<td>27,669</td>
<td>26,703</td>
<td>13,731</td>
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<tr>
<td><strong>OPERATIONS</strong></td>
<td>1,721,877</td>
<td>98.45%</td>
<td>1,262</td>
<td>97.96%</td>
</tr>
<tr>
<td>Development, Utilization and Implementation of S&amp;T Scholarships</td>
<td>4,877</td>
<td>4,806</td>
<td>1,675,010</td>
<td>1,674,949</td>
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<tr>
<td></td>
<td>1,679,887</td>
<td>1,679,755</td>
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<tr>
<td>Research, Promotion and Development of S&amp;T Education and Training</td>
<td>11,105</td>
<td>11,050</td>
<td>34,242</td>
<td>31,072</td>
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<td></td>
<td>45,347</td>
<td>42,122</td>
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<tr>
<td>Locally Funded Project: Support to the Presidential Implementing PD 977</td>
<td>355</td>
<td>310</td>
<td>103</td>
<td>79</td>
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<tr>
<td></td>
<td>4,589</td>
<td>4,457</td>
<td>1,717,469</td>
<td>1,713,250</td>
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<tr>
<td><strong>TOTAL BUDGET</strong></td>
<td>34,589</td>
<td>34,457</td>
<td>1,733,250</td>
<td>1,728,969</td>
</tr>
</tbody>
</table>

### BUDGET DISTRIBUTION
(Amount In Thousand Pesos)

- **GASS (General Administration and Support Services):** 18,407 (98.45%)
- **PS (Personal Services):** 1,721,877 (97.96%)
- **MOOE (Maintenance and Other Operating Expenses):** 1,262 (0.07%)
- **CO (Capital Outlay):** 355 (0.02%)

### Organizational Chart

- **OFFICE OF THE DIRECTOR**
  - SCIENCE AND TECHNOLOGY SCHOLARSHIP DIVISION (STSD)
  - SCIENCE EDUCATION AND INNOVATIONS DIVISION (SEID)
  - SCIENCE AND TECHNOLOGY MANPOWER EDUCATION RESEARCH AND PROMOTIONS DIVISION (STMERPD)
  - FINANCE AND ADMINISTRATIVE DIVISION (FAD)
Key Officials

PROF. FORTUNATO T. DE LA PEÑA
Officer-in-Charge, Office of the Director
DOST-SEI

ALICIA L. ASUNCION
Chief, Science and Technology Scholarship Division

DR. JOSETTE T. BIYO
Director

ENGR. MARIA TERESA B. DE GUZMAN
Deputy Director

LILIA R. LAURON
Chief, Science Education and Innovations Division

RUBY R. CRISTOBAL
Chief, Science and Technology manpower Education and Research and Promotion Division

AIDA T. AYRAN
Chief, Finance and Administrative Division

Officers and Staff

OFFICE OF THE DIRECTOR

SCIENCE EDUCATION AND INNOVATIONS DIVISION

SCIENCE AND TECHNOLOGY SCHOLARSHIP DIVISION
Officers and Staff

SCIENCE AND TECHNOLOGY MANPOWER
EDUCATION RESEARCH AND PROMOTIONS DIVISION

FINANCE AND ADMINISTRATIVE DIVISION
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.