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Queena Lee-Chua: Harness student creativity in math and strengthen basic foundations

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# **EDITORIAL**



STII librarians know how to have fun while at work. Standing (L-R): Dr. Carmelita Nobleza and Mary Cumagon. Front row (L-R): Louise Ian delos Reyes, S&T Post's Framelia Anonas. Gloria Cordoves and Michelle Tabilog.

# **Studying science**

How do you make science attractive?

This has been a perennial challenge to educators and to the DOST in general. This is quite ironical because science itself is a very interesting subject yet it is difficult to market.

Take for instance the dailies. Out of the hundreds of stories in a day, we are fortunate if we unearth one real honest-to-goodness science story. In schools, many students queue up for enrolment but only a handful of them for science courses. Ask a child what he wants to become when he grows up, and most often, his answer will be "to be a teacher," "to be an *artista*," or "to be a doctor" (this is the closest we can get, thank you). "To be a scientist" is such a remote choice, as the term still conjures the image of an old man with thick glasses and wiry hair.

Yet, during times of calamities and controversial issues, the public naturally gravitates toward the most credible source of information: the scientist. We see this happen during earthquakes, oil spills, typhoons, computer scams, and even high-profile murder cases.

In this issue, let us get to know how science and mathematics education are made more appealing to attract more people into having science and technology careers. Dr. Queena Lee-Chua, who gained popularity for her exceptional talent in making mathematics more fun to students, shares some national and local training efforts on mathematics education.

Our Executive Editor, Aristotle Carandang, reports on the how the Washington Accord can accredit our local engineers for international practice. We also have updates on the Engineering Research and Development Program and national efforts to firm up science and mathematics education in the country, as well as on the DOST's Human Resources Development Program for its employees.

To show the span of DOST's efforts in developing people for S&T careers, we also feature here the DOST Day Care Center which has an enhanced S&T program that makes science more fun and practical to small kids. We also have a Q&A article about Pisay to reveal more about DOST's school system which constantly produces winners in science and mathematics tilts here and abroad.

Our head librarian, Dr. Carmelita Nobleza, reveals the make-over of the STII Library which is DOST's arm and portal in providing S&T multimedia materials to various clients, including academic institutions, libraries, and students in all levels. We also have a report on the 10th Science Council of Asia, an international gathering of scientists from various Asian countries, which is held in the Philippines this year.

Science is not only fascinating, it is also the way towards economic prosperity. Therefore, let us attract more people to get into science careers to make the way even better and clearer.

un



SCIENCE POS

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**On the Cover:** Dr. Queena Lee-Chua suggests the harnessing of student creativity in Math and strengthening basic foundations to have a better mathematics education in the country. *(Photo by Henry A. de Leon)* 

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# RP now has tech transfer law, DOST lauds passage

By EDGE GANCIAGAN S&T Media Service, *PCARRD* 

A PROPOSED bill that seeks to roll out mature and potentially important technologies generated by government-funded researches to the market was finally enacted into law recently after almost three years into legislation.

President Gloria Macapagal-Arroyo signed Republic Act 10055, otherwise known as "An Act Providing the Framework and Support System for the Ownership, Management, Use, and Commercialization of Intellectual Property Generated from Research and Development Funded by Government and for Other Purposes" or the "Philippine Technology Transfer Act of 2009" into a full fledged national statute on March 23 at the Malacañan Palace. The new law is expected to serve as the blueprint for a nationally coordinated technology transfer framework of government-funded researches.

Department of Science and Technology Secretary Estrella Alabastro said that the whole science community is overwhelmed with this development.

"We are optimistic that this new law, a landmark policy on technology transfer will revolutionize the commercialization of technologies generated by researches funded by taxpayer's money," Sec. Alabastro said.

The enactment came after Congress approved in December 2009 the Senate version, Senate Bill 3416, authored by Sen. Edgardo J. Angara and co-authored by Senators Manuel Roxas II and Loren Legarda. Senators Pia Cayetano, Gregorio Honasan, Panfilo Lacson, Aquilino Pimentel, Jinggoy Estrada and Juan Miguel Zubiri also served as co-sponsors.

At the House of Representatives, Cavite 1<sup>st</sup> District Rep. Joseph Emilio A. Abaya was at the forefront of the Bill's passage and served as its principal author. Angara and Abaya chair the Committees on Science and Technology at the Senate and House of Representatives, respectively.

Speaking at PCARRD (Philippine Coun-



cil for Agriculture, Forestry and Natural Resources Research and Development) recently, Sec. Alabastro expressed optimism of the law's merit in uptaking technologies to the market as well as preventing brain drain and out migration of S&T professionals, and encouraging students to pursue R&D studies.

A key provision in the law provides for incentives to researchers by according them share in the royalties as well as allowing them put up their own start up companies.

The law was Sec. Alabastro's brainchild, having recognized the need for a national backbone and framework that would push technology generation and application to its maximum potential through efficient and coordinated transfer capability and intellectual property assertions around the country, similar to the Bayh-Dole Act in the US.

The S&T czar also lauded President Arroyo and Congress for taking into account such a much-needed legislation for the science and technology sector.

Alabastro explained that taking advantage of the new law would hasten the process of technology commercialization and broadens the scope of protection of intellectual property rights in government RDIs.

"For the longest time, we rely mostly

on breakthroughs from outside, while our local technologies generated through public funds remain untapped or archived in laboratories around the country. Hence, this is a significant break for us to roll this out to the market and be availed by the public," she added.

Once fully in place, the new law is expected to provide the mechanism to allow important technologies to be commercialized and be made available to the public.

Dr. Patricio S. Faylon, PCARRD Executive Director, meanwhile expressed elation with this development. He described this as a leap for the inter-agency policy advocacy collaboration and a feat in the Council's policy development and advocacy mandate relating to S&T development.

PCARRD, the central planning council of DOST in the agriculture, forestry and natural resources has led the Department's efforts in the Bill's legislative advocacy and public awareness activities since 2006.

Meanwhile, the technical and financial support given by the Intellectual Property Office (IPO) of the Philippines, DOST Planning and Evaluation Service, and DOST councils and institutes were instrumental in the legislative advocacy of the law. Currently, DOST and IPO are preparing the basis for the Act's implementing rules and regulation (IRR).

# **New DOST directors**



**REYES JR.** 

GARCIA

**CRUZ** 

## K+E+T+D+P = Juan S. Reyes Jr., New FMS-DOST director

K+E+T+D+P IS an equation. Just add all the variables and the result is success. And Juan S. Reyes Jr. solved that equation with flying colors, making him the new Director of the Finance and Management Service-Department of Science and Technology (FMS-DOST).

Jun, as he fondly called by his peers, recently assumed the title Director IV of the FMS. In simple rites during the DOST Management Committee Meeting on 08 March 2010 at the Philvolcs Auditorium, Quezon City, he was sworn in by DOST Secretary Estrella F. Alabastro.

For more than three years, Reyes was the Officer-in-Charge of the FMS and held various positions within the organization. His selection as FMS Director was an example that "knowledge + experience + training + determination + potentials" is an equation that when solved properly is equal to success.

Reyes has packed in 16 years of dedicated service to DOST. He was the Officerin-Charge of the Budget Division during his first seven years in the FMS- DOST. Later, he was promoted to the position of Chief Administrative Officer (Management and Audit Analyst V) of the Management Division, FMS-DOS. He was subsequently named OIC of the Accounting Division-FMS and, concurrently, OIC of the FMS.

Reyes, a Certified Public Accountant, earned his Bachelor of Business Administration at the University of the East. He was a DOST scholar when he obtained his Master in Business Administration from the Polytechnic University of the Philippines.

A low-profile worker, Reyes silently and dedicatedly discharged his roles and became a member of a number of working committees within the DOST system, helping him gain familiarity of various financial and administrative transactions. In the course of his service to the system, Reyes has gained extensive knowledge and understanding of the different phases of financial management. In fact, he was also assigned for some time in the Internal Audit System.

His experiences as State Auditor at the Commission on Audit and as Accounting Supervisor in a private firm were strong foundations for his success. On professional affiliations, Jun Reyes is a member of various professional organizations such as the Philippine Institute of Certified Public Accountants, Government Association of Certified Public Accountants, Association of Government Internal Auditors, Association of Government Accountants of the Philippines, Philippine Association of Government Budget Administrators, SIKAT DOST Employees Union, and DOST Employees Association. (Josephine Darm, Michelle Sulit, Aileen Casa, STII, S&T Media Service)

### Edgar I. Garcia: Meticulous multi-tasking expert is new TAPI director

Always referred to as the meticulous multitasking expert by those who had worked with him, Engr. Edgar I. Garcia's dynamicity helped him move his way to the top post of the Technology Application and Promotion Institute-Department of Science and Technology (TAPI-DOST). He was appointed as Director by Secretary Estrella F. Alabastro on March 22, 2010.

Director Garcia, Egay to his friends, has an extra-ordinary ability as a team player, with exceptional knowledge in technology transfer and commercialization programs. His

# s appointed



**AGGANGAN** 

dedication and desire to acquire advanced managerial skills and modern strategies prove to be his weapon in his for perfection.

A graduate of Bachelor of Science in Chemical Engineering at the National University in 1978, Engr. Garcia went to University of the Philippines Diliman for higher studies where he obtained his Master of Statistics degree in 1986. He was recipient of Certificate of Merits as College Scholar. In 1989, he received his Postgraduate Diploma in Chemical Engineering from the Tokyo Institute of Technology, Tokyo, Japan where he was a research fellow of the UNESCO and Ministry of Education and Culture of Japan (MONBUSHO). At present, he is completing his PhD in Food Science at the University of the Philippines Diliman with all academic courses completed.

Engr. Garcia joined the DOST system in 1979 at the Food and Nutrition Research Institute then joined TAPI in 1992 as Senior Science Research Specialist. He became Supervising SRS in 2004 then rose to becoming Chief SRS in 2007. Since then he has acted on various and concurrent capacities within the Institute as officer-in-charge of the Office of the Deputy Director and the Office of the Director.

As a science worker, Engr. Garcia has written and published a number of country paper reports and technical papers. He is undoubtedly one civil servant who upholds excellence, possessing strong analytical skills in various fields and the ability to relate to peers on policy issues on science and technology.

Aware of the importance of education and mentoring, Engr. Garcia continues to be part of the academic community as a parttime lecturer at the Polytechnic University of the Philippines (1987 to present) and the Technological University of the Philippines (1981 to present) where he teaches food science courses, Calculus, Statistics, and Analytic Geometry to undergraduate technical and engineering students. (Josephine Darm, Michelle Sulit, Aileen Casa, STII, S&T Media Service)

### Engr. Arthur Cruz: Moving up the ladder

Bringing the Metals Industry Research and Development Center to new heights is not new to this man who had a long time romance with the industry since his younger days. Engr. Artur Lucas D. Cruz, registered mechanical engineer, was appointed Executive Director of the MIRDC by DOST Secretary Estrella F. Alabastro on March 22, 2010.

Engr. Cruz started as Junior Methods Engineer at MIRD in 1977, and then rose up to Division Chief, Department Manager, and Director II, until he was promoted as Deputy Executive Director III of the Office of the Deputy Executive Director for Research and Operations. He served as MIRDC Officerin-Charge from 04 March 2009 until his assumption to the top position of the Center.

Cruz, a holder of a Career Executive Officer (CEO) IV rank, is one of the few people who rose from the ranks. In fact, he started his mechanical career as a helper in a small mechanical shop in Angeles, Pampanga in 1975 but was later hired as instructor at the National University where he took his BS in Mechanical

Engineer. He obtained his MBA from the San Sebastian College in 1977. Joy M. Lazcano (STII) and Marlyn Ramones (MIRDC)

### Dr. Romulo Aggangan, FPRDI's ray of hope

With his high competence and extensive experience as a forester and an environmental researcher, the Forest Products Research and Development Institute of the Department of Science and Technology (FPRDI-DOST) sees no sun setting in the horizon in this once sunshine industry, the forest products.

At the helm of FPRDI, DOST's lead agency in research and development for innovative and environmentally safe forest products, is Dr. Romulo T. Aggangan, a professional forester with various published articles in leading peer-reviewed journals.

Dr. Aggangan took his BS and MS at the UP Los Baños and his PhD in Biological and Environmental Sciences at the Murdoch University, Perth, Western Australia. He led several National R&D programs and projects on National Furniture R&D. Currently, he is a member of the programs on national biofuels and the integrated R&D on Jathropa curcas as feedstock for biodiesel.

His collaborative work at the Sustainable Agriculture and Natural Resources Management Collaborative Research Support Program in Southeast Asia has led to the successful completion of this large multidisciplinary R&D program. His other project involvements include the improvement and maintenance of bamboo productivity for quality timber and shoots, and the S&T program for industrial tree plantation species for CARAGA.

He was Director of the Forest and Environment Research Division of the Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development before joining FPRDI. He also chaired several committees and as project coordinator to some international funding agencies. (Joy M. Lazcano, S&T Media Service, STII)

# Aurora water confab focuses on science-based technology



By ARISTOTLE P. CARANDANG S&T Media Service, *STII* 

WHAT USED to be an isolated, sleepy province of Aurora is now a major tourist destination and a business growth area. More importantly, new technologies have become the drivers of these developments initiated by Sen. Edgardo J. Angara, Senate Committee on Science and Technology chair.

On May 14-16, 2010, the province hosted 'Water W.A.T.C.H.' or Water Conference for the Wise Adaptation of Technologies for Clean  $H_2O$  at the scenic Bahia de Baler Garden Resort.

In his keynote speech, Senator Angara undescored the importance of water. "Water is life. Without water, we will have nothing to drink and we will have no food to eat," he said.

The water conference, with over a hundred participants, assembled major decision-makers and stakeholders from various offices and interest groups all over the country to discuss water and sanitation. Important aspects tackled were water supply and demand management, bottled water technologies, and alternative water sources such as rainwater harvesting and membrane technologies. Leading the discussions were national leaders and representatives from various local government units, academic institutions, financial institutions, local and international experts, and non-governmental organizations. The conference aimed to acquaint the province of Aurora to the proper science and the most relevant technologies for exploring possibilities in water supply and water services investments.

Dr. Leonardo Q. Liongson, UP Institute of Civil Engineering professor, discussed "S&T Strategy for Water Supply and Sanitation," emphasizing the importance of science-based solutions to water and related problems. He urged for the review of priority water resources development projects in view of new challenges posed by population growth, urbanization, environmental degradation, technological changes, shifts in global economy, and effects of climate change. " There should be a collaboration among government agencies such as the National Water Resources Board, Department of Environment and Natural Resources. Department of Public Works and Highways, and Department of Interior and Local Government," he added .

Among the scientific and technological issues on water and climate change Liongson undescored include downscaling of temperature and rainfall global predictions in climate change to Philippine regions, provinces, and seasons. He also recommended a multi-stakeholder sharing of climatic data (rainfall, evaporation, wind, etc.) for scientific, engineering design, and operational uses to upgrade and modernize the National Water Information Network or NWIN in both online and published formats.

Liongson recommended the inclusion of adaptation measures in the review and revision of hydrologic and hydraulic design criteria and practices, taking into account downscaled climate change parameters for a revised rainfall intensity-duration-frequency statistics, wind statistics, among others. He underlined the importance of using modern geomatic technologies for resource mapping needs in water resources development and management, and water-hazards mitigation. Such technologies include remote sensing, geographic information system, space technologies (such as Tropical Rainfall Measuring Mission), airborne technologies (such as laser-based LIDAR for topographic surveys of river basins), and other methods.

"The need for multi-dimensional and multi-variable water systems modeling for the simulation, optimization and decisionmaking in water resources development and management is equally important," he added. He also cited the mechanisms for incentives and promotion of investment in water purification, supply conservation, and sanitation technologies from small to large scale systems, including rainwater harvesting. He suggested the review and revision of mandates of existing water-related agencies, as well as incentives and promotion of investment in wastewater treatment technologies and hydrometric instrumentation technologies.

As well, Liongson pointed out the crucial role of reviewing and evaluating the management and use of groundwater and surface water resources for municipal, agricultural, and industrial supply to ensure long-term water sustainability and safe yields; to prevent salt water intrusion of aquifers, pollution of water resources, and land subsidence due to excessive groundwater pumping; and to distribute water equitably to users.

He also pitched the need to review and evaluate management practices of and

# what's new?

# **MIRDC** upgrades facilities to strengthen fire prevention

By MARLYN RAMONES S&T MEDIA SERVICE, *MIRDC* 

FIRES CAUSED by liquefied petroleum gas (LPG) cylinder have been quite common in the country. From 1995 to 2000, the Bureau of Fire Protection (BFP) of the Department of the Interior and Local Government (DILG) reported a total of 1,475 LPG-caused fire incidents throughout the country. From 2004 to 2008, BFP again recorded 756 fires caused by LPG tank explosions.

According to the LPG Association of the Philippines, half of the 12 million LPG tanks in the country today are not fit for public use. The group also estimates that out of the six million unfit LPG tanks, three million are for scrapping and could no longer be fixed. Another three million are for requalification or for inspection and certification by concerned government agencies

An LPG tank explodes and causes fire when it has considerable leak. This leak, which may emanate from the hose or from the burner, bursts once the LPG is ignited. Thus, ensuring the safety of LPG cylinders becomes of utmost importance in preventing fire, particularly in high density household areas.

The Metals Industry Research and Development Center (MIRDC), an ISO/IEC 17025 accredited laboratory by the Department of Trade and Industry's Philippine Accreditation Office (PAO), has upgraded its fire prevention facilities to address the growing problem on LPG-related fires. Among the tests conducted by MIRDC on LPG cylinders are radiographic, tension and bending, and bursting.

The radiographic testing detects internal welding defects of the weld joint portion of the LPG cylinder. It is exposed to radiation with attached film using an industrial X-ray of 300 kVA capacity.

Tension testing involves determining the tensile properties of both materials and weld joints (tensile strength, yield strength, and elongation) using test samples machined to specified dimensions, while bend testing determines ductility of the weld joint. Both tests are done using a Universal Testing Machine (UTM).

Meanwhile, in the bursting test, the finished LPG cylinder is subjected to a very high pressure using a hydraulic system. A burst testing equipment is used to prove that the LPG cylinder will not rapture up to at least four times its designed pressure.

These testing processes employed by the MIRDC are in accordance with the Philippine National Standard (PNS).

LPG cylinders require mandatory certification issued by DTI's Bureau of Product Standards (BPS) for local manufacturers and importers. The local manufacturers are required to secure Product Safety (PS) mark, while importers have to secure the Import Commodity Clearance (ICC).

Recently, MIRDC's facilities and expertise in providing technical requirements were featured in ABS-CBN's morning television program Umagang Kay Ganda in collaboration with the DTI-BPS.

# **Balik Scientist talks on international food safety issues**

DR. MANUEL M. Garcia, a Food Development Center visiting consultant from Canada, led the seminar on Enhancing Food Safety in CALABARZON last March 15 to 19, 2010 at the Splash Mountain Resort, Los Baños, Laguna.

The seminar, one of several banner activities of DOST CALABARZON's program on Regional Food Safety and Quality Assurance, tapped into Dr. Garcia's expertise through DOST's Balik-Scientist program. Dr. Garcia is also a corresponding member of the National Academy of Science and Technology. In his return to the county, he served as visiting foreign adviser of the Natural Sciences Research Institute-UP Diliman, Philippine Coconut Authority and the Career Executive Service Organization. His program of activities as Balik Scientist includes working with universities, industry, and other government agencies.

During the seminar, he discussed current international perspective on local food safety issues and responded to queries in an animated forum with 100 participants. He likewise provided workable technologies that would improve the efficiency and economic viability of local food manufacturing operations.

Meanwhile, Guilberto A. Veluz, officerin-charge of the Technical Operations Division of DOST CALABARZON, gave empirical but technically sound guidelines on Farm-to-Table Food Safety. Emelita P. Bagsit, head of the Regional Standards and Testing Laboratory, supported Veluz' exposition with a discussion of the various tests, calibration and other related services of DOST CALABARZON. Emmylyn A. Tagnia of the Food and Drugs Administration presented FDA's inspection and licensing requirement.

Meanwhile, seven leading national companies exhibited state-of-the-art rapid test kits and other technologies on food hygiene, workplace sanitation and food safety. These companies were 3M Philippines, Brownstone Asia-Tech, Inc., BW2 Holdings, Dakila Trading Corporation, Glenwood Technologies International, Inc., PHILAB Industries, Inc., and Santienz Philippines, Inc. The seminar-exhibition was attended by 16 local food manufacturers, 15 local government units, six food service units of hotels and food shops, five academic institutions, and five national government agencies.

A lecture on Predictive Microbiology through use of the ComBase-Pathogen Modeling Program (PMP), and meeting of the Food Safety team were also held to close the weeklong activity.

Launched in 2008, the program on Regional Food Safety and Quality Assurance advocates the precept of food safety among seven regions in Luzon, Visayas and Mindanao. Veluz is the Food Safety Team Leader of the Luzon Cluster Shepherd Region which includes DOST-CAR, DOST Region I, DOST Region II, DOST Region III, DOST MIMAROPA Region, and DOST-NCR. This year, DOST Regions II, III and IVB joined them in the seminarexhibition. Members of the DOST CALABARZON Food Safety Team include food technologists Guilberto A. Veluz, Jane Agnes U. Olivares, Lyn F. Aggangan, and Jeny S. Bronburac; chemists Emelita P. Bagsit and Maria Lorelle P. Dorado; nutritionist Amor C. Chozas; and industrial microbiologist Niña S. Giron. (Adelia M. Guevarra, S&T Media Service, DOST IV-A)

# what's cool?



# DOST fetes basic research achievers

By JOWI A. CARTECIANO S&T Media Service, NRCP THE DEPARTMENT of Science and Technology's National Research Council of the Philippines (NRCP) awarded eleven researchers in different fields for their outstanding accomplishments in the field of basic research on March 10, 2010 at the Manila Hotel during the 77th NRCP General Membership Assembly.

Awarded with a plaque and medallion of recognition plus PhP25,000.00 cash incentive each are: Dr. Emily B. Tan (Governmental, Educational, and International Policies); Dr. Aurea C. Matias for Dr. Amorita V. Castillo (Posthumous Award, Pharmaceutical Sciences); Dr. Windell L. Rivera (Biological Sciences); Dr. Rex Victor O. Cruz (Agriculture and Forestry); Dr. Maria Natalia R. Dimaano (Engineering and Industrial Research); Dr. Josefina V. Cabigon (Social Sciences); Dr. Maricor N. Soriano (Physics); Dr. Drexell H. Camacho (Chemical Sciences); Prof. Mauricia D. Borromeo (Humanities); Dr. Nathaniel T. Servando (Earth and Space Sciences); and Dr. Mauro F. Manuel (Veterinary Medicine).

The awardees' outstanding researches include the following: the development of science and mathematics education and faculty (Tan); the phytochemical investigation of Philippine medicinal plants (Castillo); the development of diagnostic tool differentiating the morphological identity of Entamoeba species (*Entamoeba histolytica and Entamoeba dispar*) (Rivera); technical papers on watershed management guidelines and impacts of climate change (Cruz); the assessment and evaluation of possible materials as potential sources of biofuel (Dimaano); reproductive rights advocacy and population studies (Cabigon);

The innovative use of color, video, and image processing as applied to marine science (Soriano); the improvement of the semiconductor industry that dealt with the assembly process and material properties (Camacho); for pioneering the ethnomusicological research on Gaddang folk songs of Nueva Viscaya and vocal music of the Cordillera (Borromeo); the analysis and prediction of rainfall associated with monsson surge through numerical modeling using highspeed computing system (Servando); and the pioneering studies on veterinary parasitology and protozoology, particularly on blood, gastrointestinal and ecto-parasites of domestic animals and poultry (Manuel).

Dr. Jaime C. Montoya, NRCP President, Prof. Fortunato T. de la Peña, DOST Undersecretary for S&T Services, and Dr. Napoleon P. Hernandez, NRCP Executive Director led the awarding ceremonies. The Assembly was attended by approximately one thousand member researchers, scientists, and technologists from the different research institutions of the country. Other activities during the Assembly were plenary discussions that anchored on the theme "Facing Challenges of Climate Change through Science and Technology."



# DOST & CHED partner against brain drain

By JOY M. LAZCANO S&T Media Service, *STII* 

THE DEPARTMENT of Science and Technology (DOST) joins hands with the Commission on Higher Education (CHED) through a ceremonial signing of a memorandum of agreement held at the CHED office in UP Diliman last February 24. DOST Secretary Estrella F. Alabastro and CHED Chairperson Emmanuel Y. Angeles signed the MOA which officially kickstarts the DOST and CHED joint initiatives of bringing technology experts from abroad through DOST's Balik Scientists Program (BSP) and deploying them to select Higher Education Institutions (HEI) for short- to long-term mentoring engagements for students and professors.

The BSP aims to upgrade the country's higher education system to international standards and produce globally competitive graduates.

Trainings and seminars on modern science researches under the BSP's priority areas will top the activities of the visiting scientists and technical experts in the identified HEIs in the country.

Moreover, CHED Commissioner Nenalyn P. Defensor hopes that DOST would bring in 1,000 Balik Scientists in the country to augment the need for more experts.

DOST's Balik Scientist Program, under DOST Assistant Secretary Ma. Lourdes P. Orijola, has brought home 101 returning scientists since it commenced the 2007 Revised Implementing Rules and Regulations, exceeding Secretary Alabastro's promise to President Gloria Macapagal-Arroyo of 100 returning scientists in four years.

# Guarding the shelves through product safety

By JOY M. LAZCANO S&T Media Service, STII

IN 2008, Chinese milk manufacturers hit international headlines when several milk and infant formula products were found to contain melamine, a chemical compound used in the manufacturing of formica boards, glues, housewares, among others.

The chemical reportedly caused more than 50,000 infant hospitalizations due to kidney damage and six death cases. There was also a number of animal deaths due to poisoning.

Here at home, the government tightened its reins in testing products, especially the consumables, to ensure product safety, quality, and integrity. The Department of Science and

Technology's Industrial Technology Development Institute harnessed its Standard Testing Division (STD) to ensure product safety through strict quality testing and standard screenings before products hit the market shelves.

Since its establishment in 1987 through Executive Order 128, STD has provided standard and laboratory testing services to its clients in the manufacturing industries, schools, hospitals and other institutions to ensure public safety.

STD also helps in harmonizing product quality to meet standards and boost local manufacturers' capability to penetrate both local and international markets.

According to STD Chief Hermelina H. Bion, "STD provides to the public affordable but extensive testing services for research, product development or legal and/or regulatory issues."

She said that the division receives an estimated 300 sample products every month from various manufacturers such as in the food and beverages business, herbal and pharmaceutical products, insecticides, water (domestic and industrial) and environmental samples, fuels, organic and inorganic chemicals, minerals, metals, plastics and rubber, and construction and engineering materials.

STD performs microbiological and chemical tests and analyses of products in the market, primarily to check if the products comply with the manufacturing standards.

The division's testing laboratories are ISO/IEC 17025:2005 certified. ISO is an international standard certifying agency that determines the technical competence of testing and calibration laboratories. Its microbiological section is also recognized by the Food and Drug Administration of the USA. One of the STD-maintained laboratories is the ITDI Laboratory Animal House used in the testing of plant isolates/food supplements, cosmetics and pesticides. It is registered under the Bureau of Animal Industry in compliance to RA8485 (Animal Welfare Act) and a standing accreditation from the Philippine Association for Laboratory Animal Science.

Presently, STD maintains a number of competent technical experts complemented by modern laboratory equipment to ensure credible laboratory results. STD personnel, according to Ms. Bion, are also continually trained on new analytical techniques to keep abreast with the industry.

Ms. Bion mentioned the need for training on new equipment among DOST's inhouse engineers to maintain smooth operation of the laboratories. She also looks forward to STD's coming acquisition of state-of-the-art laboratory equipment.

For questions regarding STD's services, please call the DOST trunkline at 837-2071 loc. 2197.

# what's cool

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# Quo vadis S&T

What have we done so far and how ready are we to overcome the challenges ahead?

By LOUIE ALONSO BELMONTE S&T Media Service, *STII*  SST III

A syou sow so shall you reap." This old adage holds true to many Filipino scientists that are now internationallyrecognized for their exceptional contributions in advancing science and technology. Their hard work, patience and perseverance are finally paying off. Their sweet success not only put the Philippines in the world map but provides inspiration for would-be scientists.

One of these scientists is renowned chemist Baldomero Olivera who received the Harvard Foundation's Most Outstanding Scientist Award three years ago for his discovery of a pain killer extracted from a cone shell that is a thousand times more potent than morphine. His accomplishment was cited by President Gloria Macapagal-Arroyo in Washington, USA recently and stated that Olivera's discovery is only one of the untold riches hidden in the Philippine oceans.

Truth was unfolded years ago that many of the country's experts in the field of science and engineering are being tapped by different companies abroad to advance their respective research and development (R&D) programs. The overwhelming talents of these Filipinos are being used to expand the product innovations and services of their foreign employers that compete in the global arena.

Ironically, with the demand of Filipino talents abroad, the Philippines has yet to develop a progressive S&T culture in its own backyard. The country's current state of S&T is largely blamed on the alleged lack of priority from the government to fund R&D and the poor promotion of science education among Filipino students.

This huge demand of science experts abroad has spelled big trouble in the country's S&T development. Undersecretary Fortunato T. dela Pe a was earlier quoted that the science community is faced with the unabated exodus of Filipino scientists and science scholars abroad where they are offered higher salaries. Sad but true.

#### What are they doing?

While there are many things that need to be accomplished to strengthen the S&T development in the Philippines, the government and its partner sectors continue to strive to build a progressive science culture in the country.

Throughout her term, President Arroyo has released hundreds of thousands of pesos to finance science and mathematics scholarships through the Commission on Higher Education (CHED). She likewise signed a number of executive orders to uplift the state of S&T in the country. One of these is EO 604 which creates the Presidential Coordinating Council for Research and Development (PCCRD) that will review and take charge of R&D projects of various government agencies.

Another is EO 583 that establishes the creation of National Science Complex in the University of the Philippines –Diliman. It is currently being completed at a total cost of P1.7 billion using funds provided by the national government in fiscal years 2006, 2008 and 2009. Construction started in March 2007 with the final building to be completed in January 2012.

This particular effort is expected to boost the country's scientific and technological capabilities and their application to productive systems which requires complementary initiatives in new scientific knowledge and technology, technology transfer and diffusion, and technology utilization and management.

Aside from the complex, the government also poured in billions of pesos in R&D between 2007 and 2010 to nurture the growth of R&D in the country which is primarily aimed to propel the nation's economy.

# Uplifting the sagging state of science education

Since an educated society is vital in the country's economic progress and stability, DOST along with its partners are proactively addressing the poor state of science and math comprehension among elementary and secondary students by undertaking various projects that aim to improve the education system in the country.

Father Bienvenido F. Nebres, SJ said there are recent efforts to improve the quality of public elementary and secondary education, particularly through the Presidential Task Force for Education.

In the Progress Report on the Database Project for Philippine Public Basic Education, Fr. Nebres noted that even in

the poorest schools in Quezon City, some students were identified as "very bright." Based on the achievement test conducted by Ateneo De Manila University in 2009, some children obtained 90 percent ratings in Mathematics and English in very poor Quezon City schools such as Culiat Elementary School, Payatas B Elementary School and Rosa Susano Elementary School.

He added that genuine improvement in participation rates and student achievement were seen through the collaboration among the national and local level government agencies, local government units and private groups.

Moreover, the UP National Institute for Science and Mathematics Education Development (UP NISMED) has been doing its share to raise the quality of science and mathematics education in the country by helping teachers through its professional development programs, innovative curriculum and instructional materials, and research outputs shared with varied stakeholders.

This is very crucial because the interest of students to learn and appreciate science and mathematics lies on the ability and creativity of teachers to teach and open the eyes of the youth on the wonders and beauty of these important subjects.

The DOST, through its Science Education Institute (SEI), is beefing up science education by popularizing science and technology among the youth. One program that catches the attention of young students is robotics which creates a friendly S&T environment for young students who are generally fascinated with robots. Such interest will hopefully inspire them to walk into the S&T path in their tertiary years. SEI Director Dr. Ester Ogena said that robotic competitions provide the youth the opportunity to grasp and apply electronics and information technology.

Aside from robotics, SEI also provides undergraduate and, along with DOST Councils, offer post-graduate science scholarships.

Usec. Dela Pe a earlier said that for many years now, science education has been helping the Philippines develop a workforce to support the needs of industries, services, agriculture, the academe, and government. It has also been instrumental in coming up with technological innovations that can be applied in many areas.

#### Allies in media

While DOST looks forward to a day when science development articles will be prioritized by the print, online and broadcast editors, it certainly has on its wings a bunch of loyal allies in media that publish and broadcast science-related stories.

While political, sports and entertainment stories dominate the local media, science stories put a balance to the newspapers and broadcast programs. The balancing act is spurred mainly by science journalists who play a vital role in the promotion of science culture in the country. Through responsible information dissemination, they bridge the gap between the science community and the masses.

Promoting a science culture in the country, however, poses a huge challenge to science journalists, particularly on how to market their stories to the public and make it more appealing to their audience.

#### Forthcoming challenges

The science community has always been faced with many challenges. One of which is whether the next set of government leaders will still support and promote R&D programs and projects. While there is the proverbial long and winding road ahead, the community needs to move forward with a sense of anticipation and continue to reflect on how to realize their main goals.

As DOST and its partners struggle to promote and develop a progressive science culture in the Philippines, the advocates should not lose sight of its goals and visions to plant a seed and cultivate the minds of the young students to learn and enjoy science.

The push to strengthen the S&T culture in the Philippines may not be an easy task but with the help of all sectors of the society led by the unyielding show of force of the science community, this goal will soon be realized. Nobody said that it will be easy but surely, it will be a worthwhile ride on the road towards a progressive science culture in the country.

# Problem Solving in the Phili

(Excerpted from the Invited Lecture "Successful Problem Solving in the Philippines," delivered by the author at the Third East Asian Regional Conference on Mathematics Education, Shanghai, China, August 2005)

#### By QUEENA N. LEE-CHUA, Ph.D. Ateneo de Manila University, Philippines

Filipinos in general have never been noted for mathematical ability. International surveys (including the Trends in Mathematics and Science Study, TIMSS 2004) have placed the country near the bottom; and local studies similarly reflect such performance---by students and teachers alike. In 2004, the Department of Education (Dep Ed) launched a bridge program to address basic deficiencies in elementary math, among others (less than 10 percent of elementary graduates scored 75 percent). Several years ago, the Mathematics Teachers Association of the Philippines (MTAP) tested preservice teachers in arithmetic, algebra, and geometry, and discovered that the overall mean for high school teachers was 16 out of 50 (questions), while that for their elementary school counterpart was only 10 (Lee, 1993).

THE PHILIPPINES is a country of paradox. We are a vibrant part of Asia, yet our sensibilities have been heavily influenced by the West, especially the US. We pride ourselves on being the only predominantly Catholic country in the continent, and on speaking English well enough to give us an edge in overseas professional employment (many teachers and nurses in the West are Filipino). Our pro-West stance is usually thought to be due to lengthy colonization by Spain and the US, and archival documents reveal this to be quite likely in the case of education.

At the end of the 19th century, the revolutionary Filomeno Bautista noted that Filipinos were conquered "not by American guns, but by American schools" and that "boxes of books were the real peace makers" (Gates, 1973, p. 277). Certainly these boxes contained various math primers. In 1906, the most prolific textbook writer in the US, George Wentworth, authored A First Book in Arithmetic for the Philippine Islands. When native-born authors started producing their own books in the 1920s, they were hugely influenced by their US counterparts.

In 1925, a committee of educators headed by Prof. Paul Monroe of Columbia

University, tested 32,000 children, interviewed teachers, and observed classrooms. They reported that primary arithmetic teaching was done well, and that Filipino students performed at par with their US peers. (Only when the English language became more difficult to understand in higher texts did Filipinos lag behind.) Monroe also later reported that of the many countries he visited, the advances he saw in the Philippines were the most impressive (Pecson & Racelis, 1959).

However, even with a US-style education system still in place at the start of this millennium, Filipinos seem to have lost their edge. In the TIMSS, even though the US has mid-range scores, other Asian countries such as Singapore and Chinese Taipei occupy the top ranks. Much research has been conducted concerning the factors behind our poor performance, such as society (Abasolo-Ababa, 2002), teacher education (Ibe, 1995), learning styles (Arellano, 1997), curriculum (Ulep, 2000), and ways of remediation.

### Learning From Each Other

A possible solution lies in the Philippine paradox itself----its amalgam of East and West. Why not harness student creativity in math, at the same time strengthening basic foundations? Filipinos are known worldwide for creativity, from song and dance to poetry and debate, so why not channel such creativity into math and science? During the 9th International Congress on Math Education (ICME 9) in 2000, we realize that emerging from individual national reports of math education and cross-cultural comparisons of teaching practices was the recognition that we should learn from one another.

# National and Local Training Efforts in the Philippines

In recent decades, several groups in the Philippines have aimed to develop in the youth a balance between foundational understanding and higher-level creativity.

Program of Excellence in Mathematics (PEM). Established in 1989 at the Ateneo de Manila University under the leadership of Dr. Jose A. Marasigan, PEM primarily trains gifted students for the most prestigious fest --- the International Mathematical Olympiad (IMO). PEM invites qualified instructors from secondary and tertiary level institutions to be co-trainers, and screens potential IMO participants from all over the country. Patterned after Germany, the two-pronged screening process divides participants from the National Capital Region (NCR) from those from the rest of the country. For the NCR, at the start of each school year in June, challenging questions are formulated and distributed through the Dep Ed network. Solutions are submitted by September, and PEM invites the top 30 scorers for each level to undergo a training program---from October till July of the following year.

Members of the Philippine team to the IMO are selected from the participants, who are rigorously exposed to number theory, combinatorics, functions, solid geometry, advanced algebra---all beyond the scope of the average Filipino secondary math curriculum, which centers on elementary algebra, geometry, trigonometry, and statistics. Since 1988, approximately 20 Filipino students have garnered silver/bronze medals, or honorable mention in various IMOs, and most of the winners have taken advantage of scholarship offers by universities abroad.

Philippine Mathematical Olympiad (PMO). For students in the 15 other regions of the country, the route to the IMO is just as challenging. They have to be winners in the premier local math competition: the PMO. Under Prof. Josefina Fonacier of the University of the Philippines, Diliman, the first PMO was conducted in 1984, and since then it appears every two years, with the Department of Science and Technology as major sponsor. The PMO also promotes professional growth of teachers, with expert coaches from the NCR conducting free seminars for teachers in other areas. These sessions, which have become very popular, deal with specific problem-solving skills and content. The PMO is now under the leader-



ship of the Mathematics Society of the Philippines (MSP).

### Mathematics Trainers Guild (MTG).

A non-government organization headed by Simon Chua, president of Chong Hua University in Zamboanga City (south of the capital) since 1996, MTG has been extremely successful in developing in eight- to 16- yearolds "discipline, appreciation, innovativeness." These students have won more than 2,000 medals and merit awards in non-IMO international math individual, group, and correspondence competitions in China, Singapore, Asia Pacific, Indonesia, Canada, US, Australia, Russia, and Hong Kong. MTG has sought the advice of educators from China, who annually visit the group and train the trainers.

Gifted classes in primary and secondary schools. Aside from these major undertakings, other local efforts to promote mathematics excellence have been done, mostly in schools, with the full cooperation of parents. Public science high schools centralize talent, and many Chinese-Filipino schools and a few private Catholic-run institutions have advanced classes in math and science starting from grade school (e.g., Magis classes in the Ateneo).

Ateneo tertiary problem solving class. Advanced classes in problem solving for the tertiary level are not known, so in the summer session of April to May 2001, we decided to teach high-level non-routine problem solving to selected college science majors, with the help of Paul Zeitz' The Art and Craft of Problem Solving (1999). Encouraged by the positive response of the students (as shown by class participation and reflection papers), we decided to continue the course. We authored a case study, providing concrete data regarding factors and effects surrounding structured problem solving (Nebres & Lee-Chua, 2001). Year level, gender, course major, and high school background do not significantly affect subsequent problem solving performance---but beliefs and attitudes do.

According to the students, the techniques and mind set acquired are perceived to be useful in other classes and in real life. They also feel a sense of satisfaction, especially after having solved problems they had grappled with for so long; and learn to appreciate the beauty of math, especially the elegance of proofs and the connectedness of seemingly disparate ideas. They also feel that learning under master teachers enables them to fully understand the abstract concepts involved. After taking this course, some college volunteers train gifted grade school and high school students themselves, in an attempt to develop the problem-solving culture early on. The ability and knowledge they acquire are showcased in the Ateneo Math Olympiad, now on its third year.

#### Conclusion

We have a long way to go. In our fragmented world, openness and cooperation are needed now, more than ever, not just in politics and economics, but also in mathematics education.

Editor's Note: Dr. Queena Lee-Chua is a professor of mathematics and psychology at the Ateneo de Manila University and one of DOST's "50 Men and Women of Science" in the field of science communication.

#### References

- Abasolo-Ababa, Z. Y. (2002). Cultural orientation and high school classroom contexts as factors affecting Meranao students' performance in college mathematics. Unpublished dissertation. University of the Philippines, Diliman.
- Arellano, E. L. (1997). Mathematical learning styles of Filipino high school students. Unpublished dissertation. University of the Philippines, Diliman.
- Chua, S. (2004). Mathematics Trainers' Guild. Unpublished paper. Zamboanga City: Chong Hua High School.
- Department of Education Bureau of Public Schools. (1954). Annual reports, 1901-1905. Manila: Bureau of Printing.
- Fonacier, J. C. (1996). Interfacing tertiary and secondary math teaching efforts via the Philippine Math Olympiad. Matimyas Matematika 19(1), 43-47.
- Gates, J. M. (1973). Schoolbooks and krags: The United States army in the Philippines, 1898-1902. Westport, CN: Greenwood Press.
- Ibe, M. D. (1995). The scenario in mathematics teacher education: Issues and constraints. Paper presented during MATHTED Conference 1995. Ateneo de Manila University. 21-22 April 1995.
- Lee, Q. N. (1993). Are math teachers competent?. In In the beginning and other scientific journeys, 48 – 56. Makati: Bookmark, Inc.
- Lee-Chua, Q. N. (1999). The road to the International Math Olympiad: The Philippine experience. The Mathematical Intelligencer 21(4), 45-53.
- Lee-Chua, Q. N. & Sison-Dionisio, M. (2004). Helping our children do well in school. Pasig: Anvil Publishing.
- Marasigan, J. A. & Lee, Q. N. (1996). Concept paper on the International Math Olympiad. Unpublished paper. Quezon City: Ateneo de Manila University.
- Nebres, B. F. (1988). School mathematics in the 1990s: Recent trends and the challenge to developing countries. Plenary address. Proceedings of the 6th International Congress on Mathematics Education (ICME 6), 11-28. Budapest. Hungary.
- Nebres, B. F. & Lee-Chua, Q. N. (2000). Report on Topic Study Group 22 Topics in mathematics education in Asian countries. 9th International Congress on Mathematics Education (ICME 9). Tokyo, Japan. 31 July to 5 August.
- Nebres, B. F. & Lee-Chua, Q. N. (2001). An exploratory case study of high level non-routine mathematics problem solving in a tertiary Filipino classroom. Loyola Schools Review 2, 63-91.
- Pecson, G. T. & Racelis, M. (1959). Tales of the American teachers in the Philippines. Quezon City: Carmelo & Bauerman.
- Zeitz, P. (1999). The art and craft of problem solving. New York: Wiley.

# What's next for Filipino engineers and engineering education?



**Cooperation sealed.** Engr. Alfredo Antonio, Philippine Technological Council (PTC) President and Dr. Rosita Navarro, PACU-COA Chair shake hands after the signing of the Memorandum of Agreement that will set up an accreditation system for Philippine schools in gaining membership in the Washington Accord. Joining them are (from left) Acd. Ceferino L. Follosco, NAST-ESTD Chair; Greg Tangonan, COMSTE Executive Director; Sen Edgardo J. Angara, COMSTE Co-chair; and Acd. Reynaldo B. Vea, Mapua Institute of Technology President.

#### By ARISTOTLE P. CARANDANG S&T Media Service, *STII*

owadays, the keyword for success and development is 'globalization'. Unfortunately, its definition is as many as there are Filipinos.

Surely, for Filipino engineers, they already know where they want to go and perhaps, they have already mastered their own meaning of globalization. The bigger problem is for the wannabes (read: engineering students). What kind of future awaits them in what seems to be a borderless society?

Critiques have been emerging since the mid-2000s when some of the country's engineering professionals, government officials, and academics explored the possibility of 'elevating' the status of engineering education in the Philippines. A number of roundtable discussions and consultative meetings ensued and came a splendidly bright suggestion---the Philippines has to join the Washington Accord.

Dr. Reynaldo B. Vea, President of Mapua Institute of Technology and member of the Engineering Sciences and Technology Division of the National Academy of Science and Technology, shared that from small group discussions, where he tried to convince his fellow engineers and academics on the merits of the Philippines joining the Washington Accord, came a legion of fanatics pushing for and expediting the country's bid for such membership. Today, major stakeholders have joined the initiative with support from the Congressional Commission on Science, Technology, and Education (COMSTE) cochaired by Sen. Edgardo J. Angara and Rep. Joseph Emilio A. Abaya.

#### **The Washington Accord**

The washingtonaccord.org website states that the Washington Accord is an international agreement among bodies responsible for accrediting engineering degree programs. The Accord was signed in 1989. It recognizes the substantial equivalency of programs accredited by those bodies and recommends that graduates of programs accredited by any of the signatory bodies be recognized by the other bodies as having met the academic requirements for entry to the practice of engineering. The website also proudly bears the tagline "Working Together to Advance Benchmarking and Mobility in the Engineering Profession."

At present, member-signatories of the Washington Accord are Australia, Canada, Chinese Taipei, Hong Kong, Ireland, Japan, Korea, Malaysia, New Zealand, Singapore, South Africa, UK, and USA. And some countries are seriously busy working their way in.

"Membership in the Washington Accord is important in order for our individual engineers to be eligible to be members of international registers of engineers. They cannot be outside looking in, without a



Reynaldo V. Vea

place at the dinner table," said Dr. Vea.

#### The Philippines and its efforts

"For the Philippines to be eligible for membership in the Washington Accord, it needs to set-up an accreditation system that is keyed to global engineering practice," clarified Dr. Vea. "It should also be national in scope, unified in approach, outcomes-based, continuous quality improvement-promoting, industry-linked, independent of schools, and run by professional engineering societies."

He explained further on issues faced by the stakeholders. First, the professional engineering societies have never done and are not doing accreditation work. Second, the existing accreditation bodies have schools that are members (therefore, not independent) and are not industry-linked. It is only now that they are moving to outcomesbased and continuous quality improvement scheme.

Experts agree that at present the Philippines produces enough professional engineers. However, the increasing global demand for engineers must be addressed in the years to come, as well as the need for more of our engineers to be deemed suitable for global practice.

The country does not produce enough graduate engineers capable of improving and generating new product and process technologies. There is also the need to scale up graduate engineering education and research and development. These moves are expected to improve Philippine global competitiveness.

Thus, the effort towards membership in the Washington Accord must be pursued vigorously.

In an earlier report, Dr. Vea said that the various existing accreditation agencies already agreed to implement an accreditation system that would be acceptable to the other Washington Accord member-countries. In this new system, the agencies will adopt the desired engineering education learning outcomes that are used by the other members. They will also use an outcomes-based instrument that promotes continuous quality improvement. Furthermore, they will also include engineering professionals from industry in the accreditation teams that visit the schools.

The existing accrediting bodies will do the assessment/evaluation of the engineering programs and will render the accreditation decision. This decision will be subject to the certification of the Philippine Technological Council (PTC) – Certification and Accreditation Board for Engineering Education stating that the terms of the Washington Accord have been followed in said accreditation. PTC is the umbrella organization of all professional engineering societies.

The latest development on this multi-

institutional cooperation was the signing of the Memorandum of Agreement between the PTC and the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA) to set up an accreditation system for Philippine schools in gaining membership in the Washington Accord. The MOA signing was hosted by COM-STE at the Sofitel Philippines Plaza on March 02, 2010.

Senator Angara explained that without membership in this exclusive group, our engineers are at a disadvantage as their education is not considered at par with international standards. "With the signing of the MOA, we are taking a step towards leveling the playing field by giving our engineers international accreditation and recognition," he noted.

He stated that COMSTE has been instrumental in the push to have the Philippines become an accredited member of the Washington Accord. This accord is an agreement between nations that recognizes the equivalence of engineering programs, and therefore allows our Filipino engineers to practice as professionals in the signatory countries. Angara said that the PTC and PA-CUCOA are taking the initiative to come together and work toward achieving accreditation for the Washington Accord. In this time of global crisis, this step would enable the country to keep its competitiveness level high in order to not just survive but also to prosper.

Dr. Vea, who also chairs the Science, Math, and Engineering (SME) panel of COM-STE, said that the panel has identified the accreditation of the Philippines into the Washington Accord as an essential step in helping keep the country globally competitive.

#### AURORA WATER CONFAB . . . FROM PAGE 6

programs for natural lakes, swamps, and other wetlands to conserve water, maintain biodiversity, and sustain community-based livelihood. The organizers - the Congressional Commission on Science & Technology and Engineering (COMSTE) which Angara and Rep. Joseph Emilio A. Abaya chair; Aurora Pacific Economic Zone; and Institute of Civil Engineering-UP College of Engineering - resolved to push for the attainment of sustainable water-related programs and infrastructures goals, anchored on the Millennium Development Goals (MGDs).

The COMSTE is mandated to review and assess the state of competitiveness of S&T and Engineering research and development systems in the country. The Commission is also tasked to provide an S&T strategy in the water sector, applying science-based approach in decision-making in the areas of technology identification, transfer, and even project implementation once investments come in.

Angara, a native of Aurora Province, and the local government of Aurora held the conference in the province to gather investments in water services into the province, organizers said. This is a move towards maximizing Aurora's available water resources to provide water not only to Aurora but also to its adjacent provinces, including providing bottled water to consumers in Metro Manila.

# **ERDT Updates**

By MICHELLE ANN V. SULIT, AILEEN F. CASA, and JOSEPHINE G. DARM S&T Media Service,  $ST\!I\!I$ 

he Engineering Research and Development for Technology (ERDT) Program rolled out in 2007 upon approval of President Arroyo who infused a P3.5 billion funding for three years.

ERDT is a consortium of seven-member universities that offer mature master's and doctoral degrees in various engineering fields in the country. It is composed of De La Salle University, Mapúa Institute of Technology, Ateneo de Manila University, Mindanao State University Iligan, University of San Carlos, Central Luzon State University, and the University of the Philippines-Diliman.

The scholarship aims to address the lack of engineers, researchers and scientists with advanced degrees to work in various fields from agriculture to semiconductor industries. Having a critical mass of experts also ensures a sustainable environment and affordable energy for the future. The scholars are expected to produce indigenous technologies to improve the lives of Filipinos.

Researchers, scientists, and engineers are considered vital to national development because of their capability to translate R&D results into viable industries, carry out high-impact research, transfer knowledge, and identify new S&T directions. The ERDT Program targets 1,000 scholars per year.

### Human resource development

The human resource development component of ERDT pertains to the awarding of scholarships to deserving and motivated graduate students. The three-year duration of the program produced total of 354 MS and 67 PhD scholarships in the Consortium Universities. The Program graduated 29 scholars, with electrical engineering, energy engineering, and industrial engineering having the most number of graduates.

Another component, the research grant, is a form of assistance that aims to ensure the timely completion of the scholar's research. The research grants entitled students the privilege of availing equipment for use in their study. I t also covers the publication of their researches in journals or presenting them in conferences. A total of 21 scholars benefited from the research grant in the last three years, with the degree programs Electrical Engineering and Energy

Engineering having the most number of scholars who availed of the research grants.

#### Faculty development

In the faculty development program component, a total of 14 slots were allotted for the Faculty Development grant for 2009 but only six slots were filled out. The said program aims to help faculty members who wish to pursue their doctoral studies. According to the ERDT report, Junior faculty members who earlier committed to the Faculty Development grant backed out due to: (1) resignation from the department, (2) inability to finish their M.S. on time, and (3) other commitments that need to be prioritized. As of 2009, a total of 16 faculty members of the UP College of Engineering were awarded the ERDT Faculty Development grant, with the degree program in Electrical Engineering having the most number of scholars.

Another program of the ERDT is the Visiting Professors Program. To administer the program, the Consortium Universities invited nineteen Visiting Professors for the SY 2009-2010 to deliver lectures, seminars and the development of graduate curricula in key areas in engineering. The program serves as a means for establishing concrete relationships with professors from respectable institutions around the world. This year, a number of Visiting Professors served as session chairs and key speakers for the 3rd and 4th ERDT Conference which was held last September 11, 2009 and February 19, 2010, respectively.

## Postdoctoral and Visiting Researchers' grant were also availed by the faculty members. Out of the five slots available for Postdoctoral grant, only two slots were filled. The Postdoctoral program provides opportunities for retooling and training of faculty members to ensure that the researches conducted and proposed under the ERDT program were relevant. Qualified applicants who have significant research contribution in their areas of expertise may wish to apply for the Visiting Researcher's grant. However, the latter has not taken off as expected for only one out of the ten slots was filled out.

To increase the quality of research engineering in the country, international exposure using paper presentation and journal publication was established by ERDT via the Faculty Dissemination Grant. This enabled faculty members from the UP College of Engineering to present important research results in international conferences or publishes in international journals. For SY 2009-2010, 15 faculty members availed the said grant.

There are other activities which support ERDT in its objectives. Such programs include the ERDT Conference which serves as a venue for scholars, faculty members, and researchers from government agencies to present their research results to peers; the Technology Entrepreneurship Class which was offered in Summer 2009 prepares the scholars for possible technopreneurship;

**TO PAGE 24** 

• Ateneo de Manila University

- Central Luzon State University
- De La Salle University

THE ERDT CONSORTIUM

Engineering Research and Development for Technology

- Mapúa Institute of Technology
- Mindanao State University Iligan
- University of the Philippines Diliman

ERDT Consortium

University of San Carlos

# Stepping up science workers

By JOY M. LAZCANO and FRAMELIA V. ANONAS S&T Media Service, *STII* 

felt quite inadequate in my job as I slowly realized that my knowledge and skills are becoming obsolete," Miles Cabradilla confessed. "It was more than 20 years since I last went to school."

This admission is quite startling, as Miles, for nearly ten years, has been the Human Resource Management Officer of one of DOST's councils. Having dealt with all sorts of personnel management issues, Miles should have perfected the skill of handling people and situations. But just the opposite, she thought her skills were no longer up to date. Until she went back to school to take her Master in Public Management as a DOST scholar.

Fortunately for Miles, and all other DOST employees who availed of DOST's Human Resource Development Program (HRDP), their horizons just got a lot wider. All of them not only gained more skills and knowledge but improved their competencies in the fields they want to pursue, whether management, technical, or pure science. Most of them have already moved up the ladder.

DOST's HRD Program was designed to develop the full potentials of DOST employees, according to Atty. Mario Bravo, Asst. Secretary for Administration, Legal and Financial Affairs, and chair of the HRDP Committee.

The program provides graduate degree scholarships, short-term training programs, and other relevant benefits to deserving DOST officials and employees, Asec. Bravo said.

As science workers, whether technical or support, it is indeed important for DOST employees to sharpen up their skills or develop new ones and upgrade their education to be able to keep abreast with the dynamic field of science and technology.

#### **HRDP** updates

Records show that from 2005 to 2009, DOST's HRPD has produced 68 graduates in the Master's Degree and 12 in Doctorate in the regular programs.

The most popular program so far is Master in Public Management, a 14-month customized program developed as a collaborative venture between DOST and the Ateneo



Photo by Ateneo MPM class

School of Government. Initiated in 2007, the program raised great interest among the ranks of DOST personnel. Its two-year implementation has produced 37 graduates with specialization on Technology-based Enterprise Development. The MPM program is on its third wave of scholars, and, so far, has been the most sought-after program, followed by the Master in Environmental Science/Studies.

#### Benefits

UNDER THE HRDP, a full-time master's scholar receives a monthly stipend of PhP15,000, while a part-time scholar gets PhP7,000. Moreover, full-time doctorate scholars are given PhP23,000 monthly stipend and parttime scholars, PhP11,500.

Each scholar also receives a book allowance each term and entitled to thesis/ dissertation grant with a maximum of PhP30,000 for Master's and PhP60,000 for Doctorate. These are on top of other benefits such as tuition and other school fees, graduation fee, reimbursement of roundtrip transportation expenses once a year using the most economical fare, and group accident insurance.

Full-time grantees are obliged to serve their respective agencies one year for every year of scholarship. For part-time grantees, they are required to serve half a year of service for every year of scholarship.

Aside from the degree programs, the program also supports non-degree and short-term training courses offered in-house or by other institutions. It also conducts in-house trainings to DOST personnel with the aim of advancing their skills in their field of expertise.

# DOST's HRD Program was designed to develop the full potentials of DOST employees

HRDP also provides thesis/dissertation grants to non-HRDP scholars. Financial assistance may also be provided to employees to augment registration requirements in board or bar reviews.

Moreover, the program approves endorsements of personnel who are qualified for foreign trainings sponsored by other agencies. It likewise provides incentive program for self-financed graduates of master's and doctorate degrees.

DOST has indeed stepped up the pace of scholars like Miles through the HRDP. "I'm giving it my best shot," Miles beamed as she told she made it to the age cut-off.

Other DOST employees also gave their best shot and even got gold medals, like Bleshie Querijero of the Office of the Asst. Secretary for Technology Transfer and Janet Puerto of the Regional Operations office. Joven Litana made a quantum leap from a clerical position to being DOST-Central Office's Records Officer after obtaining his MPM as a DOST scholar. And he is not about to stop yet. This year, he applied for Ateneo's PhD in Leadership program.

The success of DOST's HRD program shows that its employees see the need to step up their competencies to keep up with the dynamic world of S&T.



# Grand make-over for DOST's grand library

By CARMELITA F. NOBLEZA Head Librarian, *STII* 

B orn at a time when libraries were quiet places full of books, the Science and Technology Information Institute (STII) Library has come to a point when it has to grapple with the realities of change. This means changing its looks and increasing its collections to meet its clientele's changing needs and preferences.

Since April this year, hammers and saws have started working to fix up the reading rooms. The librarians are tirelessly working double time to look for more impressive collections, both printed and multimedia.

By the fourth quarter of this year, the grand library of the Department of Science and Technology system—so called because it not only services the widest range of clients but also serves as the main base of the DOST's network of libraries—will welcome its clients back with more user-friendly and information technology-oriented features.

#### Modernization, finally

Modernizing the STII Library actually began via small steps in 2005. In 2006, DOST Secretary Estrella Alabastro approved in principle a P7 million budget to include upgrading the DOST agency libraries. Then in 2009, through the department's Grants-In-Aid funding, the project received some P14,142,828.00, with the STII library taking the bigger slice at P8,799, 599.00 and the rest for the PSHS system.

The STII Library's modernization has two components. One is the upgrading and updating of the library and information collections to be shared with DOST System libraries. This beefing-up is needed to meet the demand for information of the science community and the general public, as well as to help in building up content of the Philippine eLibrary System.

The other component is the upgrading of ICT facilities of STII and PSHS libraries to facilitate information delivery, and provide easy access and retrieval of S&T information. The upgrading also intends to help improve the teaching and learning environment in the PSHS campuses nationwide.

The first steps of the modernization was the acquisition of 18 desktop computers for the library staff and clients and three servers to handle the various information systems developed by the Institute. Other ICT equipment and peripherals were also acquired at the close of 2009.

# Home-grown integrated library management system

One of the STII-developed systems is the ScINET Integrated Library Management System (SILMS), now being used not only by the DOST System libraries and information units but also by other libraries and information units outside DOST. Some are academic institutions while others are government and private agencies.

The SILMS is STII's solution to the prohibitive cost of commercial ILMS. We used to subscribe to commercial ILMS which cost us almost half a million pesos annually.

### More goodies for our clients

By the fourth quarter of 2010, we expect to have added substantial collections and enhanced our ICT facilities. But there are more things we have in store for our clients, such as:

- subscription to specialized online databases such as the Institute of Electrical and Electronics Engineers (IEEE) Digital Library and American Society for Testing and Materials (ASTM) 2009 Standards Complete Package (available to the whole DOST System from October 2009 until September 30, 2010), accessed through links at the STII and DOST websites. (IEEE is the world's largest association for the advancement of technology through its highly cited publications, and professional and educational activities. ASTM is an organization concerned with the development of standards and characteristics and performance of materials, products, systems, and services.)
- an online registration system for walk-in and online clients to help us develop a complete profile of our clients. This will enable us to categorize our clients according to demographic information and their information needs. In succeeding visits, clients only need to key-in their username and password and their topic of research;
- a color-coded catalog/directory for users

to provide information on the extent of our collection in all fields of S&T. Users can search the whole DOST System or STII through color-coded buttons on the touch screen monitor available at the entrance of the library's two sections: the Reference and Foreign Books Section and Filipiniana Section;

 a 40-inch TV at the STII Lobby that continuously shows techno videos, film clips of Philippine S&T events covered by our S&T media staff, video clips of STII and DOST products and services, and others. Through this marathon film-showing, we aim to create awareness and raise greater understanding among our clients and visitors on STII and the DOST System's programs, services, and activities; Also available in the library are materials on specific S&T topics, such as the Official Methods and Recommended Practices of the American Oil Chemists' Society (concerns ITDI); Handbook of Food Analysis and Handbook of Food Preservation (concern FNRI), etc. This is because the resource sharing arrangement in the DOST, STII, and SciNET requires STII to cover materials that cannot be provided by DOST agencies due to budgetary constraints.

Current library collection consists of books, serials, theses and dissertations of DOST scholars, winning investigatory projects from the Science Education Institute and PSHS, Bato Balani copies donated by its publisher, S&T articles downloaded from the IEEE and other specialized databases, CDs and DVDs

With the STII Library's new features that come with its modernization, we look forward to providing a better and more fruitful service to our library clients, both walk-in and online.

- wireless Internet access in the whole STII building;
- latest multimedia reference materials on general science and technology, including the Audio-Visual materials produced by the A-V unit of STII's Communication Resources and Production Division;
- network security cameras to curb vandalism and theft in the library;
- additional six computers with LCD monitors for the Multi-purpose Room to facilitate IT training;
- laptop computers to selected STII officials and staff to facilitate their S&T information dissemination activities, and in conducting field trainings, when necessary;
- ICT equipment, peripherals, and furniture to handle printed and digital materials processing, search and retrieval, and networking with counterpart libraries in the country and abroad;
- ergonomic chairs for the library staff, lobby sofa, and kiosk computer tables; and
- renovated library reading rooms.

#### The library collection

The STII Library collection previously focused on general S&T reference materials in all formats. But as we stepped into the digital age, preference for digital formats prevailed, mainly to keep up with the demands of the time and constraints in the library's physical space. on S&T, abstracts of feasibility studies from TAPI, analytics of local and foreign technical journals, including press releases published in Philippine dailies. All of these materials can be accessed at the Online Public Access Catalog (OPAC) at *http://:scinet.dost.gov.ph*, at the Philippine eLib portal *www.elib.gov.ph*, and at www.science.ph. The A-V library collections of CRPD, already accessible at the OPAC, can soon be accessed at the STII Library.

#### Page 1 and following

The STII Library's first page of history was written in 1975 as the Scientific Library and

Documentation Division from the National Institute of Science and Technology (now Industrial Technology Development Institute) of the National Science Development Board which, in 1982, became the National Science and Technology Authority, now DOST.

At the then NSTA, the library was transferred to the Science Promotion Institute (SPI) where it was renamed Scientific Clearinghouse and Documentation Services Division. It even had its own building.

However, in the next government reorganization, SPI was abolished and its two divisions were elevated as the current SEI and STII by virtue of E.O. 128 dated January 1987. The library's former building is now STII's home, which means that the library was reduced into only one floor to give way to other divisions. At its current state, it could hardly accommodate the collections and the clients, especially during peak seasons, when library users from various schools are preparing term papers, thesis and reports.

As libraries of today strip down their bulky bookshelves to give way to multi-purpose community centers that feature multimedia resources, cybercafés, ranks of computer, and other modern features, the STII Library does its best to keep in step.

With the STII Library's new features that come with its modernization, we look forward to providing a better and more fruitful service to our library clients, both walk-in and online. Our built-in feedback mechanism in our catalogs will help us assess our library service and ascertain where we can go from here.



# Starting 'em young

By MARIA JUDITH L. SABLAN S&T Media Service, STII

YOU SEE these small kids, aged three to six, in the DOST compound walking single file, checking on plant leaves, or even holding an exhibit. After classes, they crowd around the small playground, wait for their *sundo*, or simply mingle with adults busy with work. These kids, pupils of the DOST Day Care Center, are children of DOST employees who enrolled their kids to be within close supervision or trained early on in science and technology, or both.

Established in 1997 through DOST Administrative Order 040, the Day Care Center has nursery and kindergarten classes. It was organized to address the needs of parentemployees, especially mothers, to have an institution to train their kids while they work. That the Day Care was just within their work area assured parents that their young children are properly cared for. In 2006, the DOST A.O. was amended to cover not only children but also grandchildren of DOST employees.

#### Enhanced S&T program

Operating for over 12 years now, the Center's basic operational expenses, including salaries of the two teachers, are provided by the DOST central office. The parents' minimal monthly contribution is used to augment expenses for the daily activities such as experiments, artworks, and exhibits, among others.

Ms. Edna Ebon, Day Care kindergarten teacher, states that in her 12 years at the Day Care, "I am proud to say that we have graduates who became excellent students in the Philippine Science High School, Don Bosco, and other premiere schools."

Through Science Education Institute's enhanced science and technology program, the curriculum and facilities of the Day Care were further improved. The classroom now boasts of construction manipulatives such as K'nex, Magnatiles, blocks, and scientific materials such as Geo-Safari microscope, binoculars, magnifying glasses, magnets, books, puzzles, videos, and a computer unit. These materials are part of the curriculum's



goal of fostering characteristics inherent in budding scientists – curiosity, perseverance, out-of-the box thinking, and creativity, among others.

The program, which covered curriculum development, purchase of equipment and materials, teacher training, and facilities modification, ran from July 2008 to December 2009. It originally aimed at developing a model framework that would increase student's intrinsic motivation and inclination toward science and create a stimulating and engaging environment. The long-term goal, however, according to SEI Director Dr. Ester B. Ogena, is to contribute to the increase of the country's human resource in science and engineering. "If the interest of these kids in science is stimulated at a young age, it is hoped that they will eventually pursue degrees related to science when they go to college," Dr. Ogena said.

#### **Inquiry method**

The inquiry-based method used in the Day Care, in which learning is based on student's questions, is more participative. The curriculum focuses more on conceptual understanding and development of skills and attitudes rather than on isolated facts that are memorized and fed by teachers. Students enjoy participative activities such as dissection of chicken and fish, and simple science experiments that were designed by two consultants hired by the program.

Ms. Criselda Gumera, Day Care nursery teacher, is thankful of the SEI program because she was able to closely observe the development of the students. Usual things such as alphabet recognition, reading and writing skills, social skills, and value formation are primarily taught in the nursery



level, but she is proud of the advancement in the nursery level's curriculum.

"Teaching nursery class is a taxing job because students are very young," she admitted. "But I took delight in the fulfilment and love of the children after we are done with the activity they enjoyed."

#### Supplementing classroom learning

Key events like field trips to the Manila Ocean Park, Malabon Zoo, Science Centrum, La Mesa Ecopark, family day, and science camp were conducted to supplement classroom learning. In fact, a science fair was exhibited last year as a year-end community sharing of children's learning.

Mr. Joel Dublin, a nursery parent and president of the Parents' Council last 2009 expressed his happiness that his child was enrolled at the Day Care. "As a parent, I'm really glad because aside from the fact that he got to visit these places like the Manila Ocean Park for free, my son learned a lot," he said. "When their lesson was on animals, the children were asked to draw the animals they observed in the Ocean Park. That made the field trip very significant to the children."

Because of the positive result of the program, SEI Director Dr. Ogena said that the model framework is ready for adoption. She said that they will recommend to the DOST management the sustenance of the program. "Any experimental project is catalytic; its sustenance depends on the agency," she further said.

Classes for school year 2010-1011 at the Day Care Center will start on June 15.

## 4 teens

# Pisay The School



IF YOU have not seen the film "Pisay The Movie," you might be wondering what the Philippine Science High School is all about. First, Pisay is not a single campus school, but a school system with campuses in nine regions in the country. Another, students here have diverse courses of study, not just science and mathematics. They also have arts, music, sports, social sciences, Filipino, and even journalism, just like any other secondary schools.

Of course, the core curriculum is packed with science and mathematics courses. This allows students to maximize their potential intellectual skills. But the rich humanities courses balance the curriculum, fostering the full growth of each student's individual personality.

This article will help you get to know more about this leading science high school system in the country.

# Why is there a Philippine Science High School?

PSHS, also called "Pisay," is intended to prepare high school students for careers in science and technology. The school accepts graduating elementary students via a rigorous entrance examination. Passers are automatically awarded with scholarship.

# Where can I find PSHS campuses in the country?

There are nine currently campuses that you can find in the following regions:

- NCR (Main Campus) Diliman, Quezon City (founded 1963)
- CAR (CAR Campus) Baguio City (founded 2009)
- Region I (Ilocos Region Campus) San Ildefonso, Ilocos Sur (founded 2003)
- Region 2 (Cagayan Valley Campus) Bayombong, Nueva Vizcaya(founded 1998)
- Region 3 (Central Luzon Campus) Clark, Pampanga (founded 2009)
- Region 5 (Bicol Region Campus) Goa, Camarines Sur (founded 1998)
- Region 6 (Western Visayas Campus) -Jaro, Iloilo City (founded 1993)
- Region 7 (Central Visayas Campus) Argao, Cebu (founded 2006)
- Region 8 (Eastern Visayas Campus) -Palo, Leyte (founded 1994)

#### Number of Students in School Year 2009-2010

Region 10 (Central Mindanao Campus) Baloi, Lanao del Norte (founded 1998)

Region 11 (Southern Mindanao Campus) - Tugbok, Davao City (founded 1988)

# Will there be other PSHS campuses in the future?

The law (R.A. 9036) states that there shall be one PSHS campus in each of the administrative regions of the country. This means that five more Pisay campuses shall be established in the following regions: Region IX, CARAGA, Region 4A/4B, Region 12, and ARMM.

# How can I or any of my friends get admitted to Pisay?

You have to be in the top 10% of the graduating elementary class to be qualified for admission to Pisay. Then you should take the PSHS National Competitive Examination, and your score should be within the set cut-off score to qualify for admission.

Pisay students are admitted based on the results of the National Competitive Examination. If you belong to the top 240 candidates (nationwide), then you are considered as principal qualifier for the PSHS Main Campus. Meanwhile, the top 90 students with scores that fall within the regional campus mean are considered principal qualifiers for the regional campuses. There are also alternate qualifiers who may be admitted depending on availability of slots (usually slots not accepted by principal qualifiers), their scores, and region of origin.

NEXT PAGE

CAMPUS	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	TOTAL
CAR Campus	66	-			66
Ilocos Region Campus	65	49	49	44	207
Cagayan Valley Campus	64	57	67	73	261
Central Luzon Campus	68	-	-	-	68
Main Campus	238	239	236	235	948
Bicol Region Campus	70	79	71	72	292
Western Visayas Campus	90	89	82	77	338
Central Visayas Campus	59	41	34	25	159
Eastern Visayas Campus	90	90	90	88	358
Central Mindanao Campus	52	45	44	45	186
Southern Mindanao Campus	90	90	88	90	358
Total	952	779	761	749	3,241

## 4 teens

# Who can take the PSHS National Competitive Examination?

All graduating elementary pupils can take the NCE if they:

- belong to the upper 10% of the class (certified by the school principal), or have a special aptitude in science and math (as reflected in the report card and letter of recommendation).
- are Filipino citizens with no pending application to migrate to any foreign country
- are not more than 15 years old by June
  30 of the incoming schoolyear
- are in good health and fit to undergo a rigorous academic program are of good moral character
- have not taken the PSHS NCE previously

#### How can one be a PSHS scholar?

To be considered a Pisay scholar, you should maintain a year level average of 2.5 or better in all subjects. If you have a grade of 5.0 in any subject in the final quarter of the school year, your scholarship will be terminated. Moreover, as a scholar, you are expected to achieve academically and behave according to standards.

# What are the scholarship privileges received by a PSHS scholar?

PSHS scholars get a monthly stipend in addition to free tuition and free loan of textbooks. Uniform, transportation, and living allowances are also given to those in low income groups. Scholars are classified into four scholarship categories based on their family socio- economic status

Living	Allowance	Stipend
Full	P2,500	P500
Partial 1	1,600	500
Partial 2	1,000	500
Special	-	500
	Living Full Partial 1 Partial 2 Special	Living Allowance Full P2,500 Partial 1 1,600 Partial 2 1,000 Special -

# How many students are admitted every schoolyear?

Every schoolyear, 240 slots are allotted for freshmen at the Main Campus, and 90 slots for each of the eight regional campuses.

# How many Pisay students were enrolled in schoolyear 2009-2010?

The table on page 21 shows the number of scholars enrolled in PSHS campuses for school year 2009-2010.

How much does the government spend for

#### Number of Graduates Per Campus in School Year 2009-2010

Campus	Class of 2010	Graduates from 1969 to 2010	
Ilocos Region	44	143	
Cagayan Valley	73	591	
Main Campus	230	7,941	
Bicol Region	72	546	
Western Visayas	77	1,138	
Central Visayas	25	25	
Eastern Visayas	88	1,123	
Central Mindanao	45	483	
Southern Mindanao	90	1,529	
TOTAL	744	13,519	

# Pisay graduates are trained to become professionals and leaders who make decisions and influence policy

#### every PSHS student?

The government spends about P86,000.00 per year for every PSHS scholar. The amount covers stipends and living allowance, uniform allowance, textbooks, operating expense and salaries of teaching and non-teaching personnel.

#### How many graduates does PSHS have?

Since 1969 to 2010, the PSHS System has produced a total of 13,519 graduates. The table above shows the number of graduates for 2010 and the combined number of graduates per campus from 1969 to 2010.

# Pisay graduates are expected to become what?

Pisay graduates are trained to become professionals and leaders who make decisions and influence policy. They are expected to help raise the country's economy and global community as they live up to their ideals and fulfill the dreams and hope given to them by the Filipino people.

# What makes Pisay different from other science high schools in the country?

First, Pisay students are admitted based on the results of the National Competitive Examination prepared by a commitee of PSHS teachers who undergo workshops and finally write the test items that are filed in a test bank. This examination measures aptitude in science and math. Second, the PSHS curriculum is more focused on the development of high-end scientific skills for high level S&T courses, as well as for new and emerging technologies. The PSHS curriculum is both intensive and extensive in science, math and technology. Students take up Computer Science, Physics, Biology and Chemistry for 3 to 4 years. Research is taken as a subject. Science and Technology electives are offered in all year levels to prepare students for courses or careers in basic sciences, engineering, and mathematics, and to address specific interests.

Third, the PSHS System also provides an environment that fosters innovativeness, dynamism and flexibility. This environment is cultivated to adequately respond to the demands of a highly intelligent student population and to keep abreast with the needs of a fast changing technological environment.

#### What challenges does the PSHS face?

The biggest challenge is the full complement of the PSHS campuses in the 16 administrative regions in accordance with RA 9036 which mandates the establishment of one PSHS campus in each region. Another challenge is the modernization and upgrading of facilities and services. The third challenge is making the curriculum relevant to the times which prompts PSHS administration to do continuous curriculum review and updating. (Source: PSHS Factsheet)

# special reports

# The Science Council of Asia

FOR EIGHT years (1993 - 2000), the Science Council of Japan hosted the Asian Conference on Scientific Cooperation (ACSC) in Tokyo with the aim of encouraging cooperation in scientific research among Asian countries. Participants to the SCA are leading scientists from various Asian countries, such as Japan, China, India, Indonesia, the Republic of Korea, Malaysia, Singapore, Thailand, Vietnam, and the Philippines.

As scientists from these ten countries established strong links through their participation in this annual conference, they agreed to transform the ACSC into a permanent and independent entity to pool the wisdom of the scientists from this region and communicate their research results to the rest of the world.

This strategic framework addresses the diverse and urgent science-related issues common to Asian countries, such as population problems, medical care, food, water, energy, and knowledge of and education in the sciences.Thus on the 8<sup>th</sup> ACS meeting in May 2000, representatives from the ten countries agreed to establish a new scientific organization. They named it the Science Council of Asia (SCA). Mongolia later joined the SCA in 2004 to become the 11th member country.The annual SCA conference is held on a rotational basis so that each member country can actively participate in and contribute to the SCA. Every event includes various activities, such as general sssembly, management board meeting, and symposium. The first SCA conference was held in Bangkok, Thailand, in May 2001.

In May 2005, DOST Undersecretary for S&T Services and concurrently NRCP President Fortunato T. de la Peña was named Philippine representative to SCA. Usec de la Peña was likewise co-chair for the SCA Joint Continuing Projects on Bioscience for Health, Environment, and Agriculture.

Later in June 2009, during the 9<sup>th</sup> SCA Conference, held in Singapore, current NRCP President Jaime C. Montoya took over the reins. On June 13-16, 2010, NRCP will host the 10<sup>th</sup> SCA with the theme "Meeting the Health Challenges in the Asia Pacific Region: Responding through an Integrated and MultiDisciplinary Approach in Science and Technology" at the Philippine Plaza Hotel (formerly Hotel Sofitel) in Pasay City.

The SCA will feature various simultaneous scientific sessions on Climate Change and Health Culture, and Health and Technology on Health. World-renowned researchers from across the globe will also share their experiences and breakthroughs on said topics. Other activities in the SCA include discussions on on=gong projects on water, natural disasters, open data, knowledge environment, and pop culture.

Two hundred fifty researchers, scientists, and technologists from the eleven member countries and in selected research and R&D institutions in the country are expected to participate in the SCA.

# International conference to tackle wellness and health

By: JOWI A. CARTECIANO S&T Media Service, *NRCP* 

THE PHILIPPINES, through the National Research Council of the Philippines of the Department of Science and Technology (NRCP-DOST), will host the 10th Science Council of Asia Conference on June 13-16, 2010. The conference will focus on the theme "Meeting Health Challenges in the Asia Pacific responding through an integrated and multidisciplinary approach in science and technology."

To be discussed in the forum are major health challenges in Asia and the Pacific, including food- and water-borne diseases, and the scourge of tuberculosis to emerging health security due to climate change and globalization.Shigeru Omi, former regional director of WHO's Western Pacific Office, said that while the region has done well in addressing health threats and concerns during the past decade, the challenges ahead remain daunting.In 2004, Assistant Director General for UN Food and Agricultural Organization Hartwig de Haen reported that 700,000 people die from food and water borne diseases every year in Asia-Pacific countries. Moreover, WHO Director General for Food Safety Kerstin Leitner reported that the danger of food-related outbreaks is particularly high in the Asia-Pacific Region because people and animals often live near each other in locations that have sporadic food production and distribution.Meanwhile, Alice-Alma C. Bungay, a Filipino veterinary microbiologist, found in her research that the unprecedented change in microbial population triggers the emergence of micro-organisms that are evolving virulently, stronger, and dangerous to human health. Her research was published in DOST's Philippine Journal of Science, Vol. 131, June 2002.

NRCP President and concurrent chair of the 2009 – 2010 SCA Jaime C. Montoya

said that it is "a great privilege for the Philippines thru the NRCP – DOST to lead and host the annual conference and serve as venue for the discussion and framing of a plan of action to address these health challenges."

NRCP is the country's premier institution for basic research, with more than three thousand member researchers, scientists, and technologists in 13 scientific fields. NRCP Executive Director Napoleon P. Hernandez announced that NRCP now accepts technical papers and posters for plenary presentation and exhibitions during the conference. The papers should follow the topics outlined and should be relevant to the conference theme. Details on the conference matters are available at www.10thsca.ph or at www.nrcp. dost.gov.ph. Interested parties may also call the SCA Secretariat at 837-61-42.

# **SCA schedule**

10<sup>th</sup> Science Council of Asia 13-16 June 2010 SOFITEL Philippine Plaza Manila Conference Program of Activities

### June 13

special reports

Arrival and registration of foreign delegates/visitors/observers

#### June 14

7	:30AM	- 11:00AM	Opening Ceremonies (Luzon Function Room)
11	:00AM	- 1:30AM	Photo Ops
11	:30AM	- 12:30PM	Viewing of Exhibits
12	:30PM	- 1:30PM	Lunch
1	:30PM	- 5:00PM	Technical Paper Presentations:
			Culture and Health
6	:00PM	- onwards	Welcome Dinner
			Cultural Presentation
June	15		
7	:30AM	- 11:30 AM	Technical Paper Presentations:
			Climate Change and Health
11	:30AM	- 12:30PM	Viewing of Exhibits
12	:30PM	- 1:30PM	Lunch

Technical Paper Presentations:

Technology and Health

### June 16

8:00AM	-	10:30AM	Technical Paper Presentations:	
10:30AM	_	12:30PM	Synthesis	
Closing Program				
Turn-over Cere	emo	onies:SCA	Flag from the Philippines to Mongolia	
12:30PM	-	1:30PM	Lunch	
1:30PM	-	onwards	City Tour	

# **SCA officers**

### President



Dr. Jaime C. Montoya President National Research Council of the Philippines

PHILIPPINES

### Vice President



Prof. Batbold Enkhtuvshin President Mongolian Academy of Sciences

MONGOLIA

## Secretary General/Treasurer



**Prof. Yoichi Muraoka** Council Member Science Council of Japan

## JAPAN

## Immediate Past-President



Prof. Hong Wanjin Deputy Director Institute of Molecular and Cell Biology Agency for Science, Technology, and Researrch SINGAPORE

## ERDT UPDATES ... FROM PAGE 16

1:30PM - 4:30PM

and the Benchmarking of Research Institutes which helps in finding the appropriate Research Model for the country.

#### Research and development

In 2009, the ERDT Program approved eight research project proposals with a funding of P P37, 302, 470. 60. Eighty-one (81) new proposals are still in the pipeline. Some were already submitted to the appropriate DOST councils for review. For CY 2009, there were 103 projects proposed, 17 of which were carried over from the previous calendar.

Every proposal comes from the different proponents of the Consortium Universities covering the four broad tracks of multidisciplinary research in the ERDT R&D Program, namely: Energy, Environment and Infrastructure, Information and Communications Technology, and Semiconductor and Electrons.

The ERDT Energy R&D Track aims to develop energy technologies and corresponding expertise that can encourage new industries to drive the country towards greater energy security. Areas included here are Biofuels, Renewable Energy Systems, and Waste-to-Energy Systems.

Moreover, the Environment and Infrastructure R&D Track aims to address the pressing needs of the community, with focus on areas such as DRINK – drinking water in every home; GRASS – green affordable shelter systems; BETTER MINE – better mining technologies; ITS – intelligent transport systems; TAMER – tactical maps of environmental risks; and MARINE – marine technologies.

Meanwhile, the Information and Communications Technology R&D Track has wide areas of research applicable to Education, Health, and Resource Management and Logistics. Furthermore, the Semiconductor and Electronics R&D Track focuses on sensors and instrumental development programs.



Arissa Lourdes G. Yala is just like most Pinays – she is sweet. She also happens to have a conspicuous likeness for sweets, especially those oozing with creamy, gooey chocolate. As a typically Pinay, Marissa translated her partiality for the goodies into baking and concocting a chocolate covered "pulvoron." She must have a real chocolate touch because her products are fast becoming favorite repast and pasalubong.

The thriving candy business initially started in 2003 with Marissa dishing out "polvorons." Locals make this candy from ordinary sifted and sweetened all-purpose flour. Marissa, however, was not satisfied with the simple concoction. Her candies, she dished, should have something special. "Siyempre, para bilhin at balik-balikan ng mamimili, di ba?" (Of course, so that customers will keep buying and going back to your product.)

Relying once again on her innate sweet-talking ability, she was able to convince her husband Joel to try coating their pulvoron with chocolate. Thus, Choco-Vron Bakeshop in San pedro, Laguna was born. "Mahirap pala," she related. "Ang daming dapat aralin at gastusan. Gustung-gusto ko nang tumigil. Pero pag nakikita ko ang mga ginagawa naming produkto, alam ko, may bentahe kami. Naiiba talaga," she continued. (It's difficult. There are so many

# Chocolate candy licks techno problem

By ADELIA M. GUEVARRA S&T Media Service, DOST IV-A

# DOST's intervention through SET-UP gives Choco-Vron consistent in quality, safety, and freshness.

things to learn and spend for. I wanted to quit but when I look at our product, I realize we have a distinct advantage. Our product is different from

others.)

Money was but one of among many in a very long list of problems.

Engr. Samuel L. Caperiña, S&T Director of the Department of Science and Technology's Provincial Science and Technology Center – Laguna (DOST-PSTC), shared that the couple was fortunate at the time they were having these problems. At that time, all PSTCs of DOST CALABARZON were then looking for new but thriving business to support through DOST's Small Enterprises Upgrading Program (SET-UP). Evaluation was also sweet, because in no time, Choco-Vron was granted support by SET-UP.

"This is how Choco-Vron and PSTC-Laguna made it," Engineer Caperiña recounted.

The rest was, as the cliché often says, history. PSTC-Laguna assisted the Yala couple in acquiring an automatic flow-wrapping machine and packaging materials. Valued at PhP .95M, the technical assistance included improvement of the quality of the candies through standardization and analysis. These procedures prolonged the shelf life of the products and improved the way they did things at the shop. Chocolate-coated polvoron can now last up to a year! Use of the machine eliminated manual wrapping of products thus enabling the bakeshop to reduce its monthly direct labor costs by PhP 35T.

"We can now produce 468,000 packs of polvoron annually," Marissa proudly said. With a pack containing six pieces of polvoron, their annual production is valued at PhP 22M. Polvoron is also now available in chocoloate, white chocoloate, and strawberry coats. One can buy these in Metro Manila, Metro Cebu, and 12 other cities, namely, Baguio, Olongapo, Legaspi, Bacolod, Silay, Davao, Cotabato, Surigao, Butuan, Cagayan de Oro, Osamis, and Zamboanga. *"Aba, pati sa apat na probinsya kamo* (We also sell in four other provinces)," Marissa added as she enumerated Tarlac, Pangasinan, Laguna, and Cavite.

So what are the key ingredients to their recipe's sweet success? Marissa and Joel were one in saying "Simple lang. Commitment namin, technological innovations na nakuha namin mula sa DOST CALABARZON at iba pang ahensya. Ano pa? Consistent kami pagdating sa quality, quaranteed ang safety at freshness ng aming produkto. Syempre, di rin dapat mawala ang pagiging matiyaga at malikhain sa paqbebenta." (Simple. Our commitment, technological innovations we got from DOST CALABARZON and other agencies. What else? We are consistent in quality, the safety and freshness of our product is guaranteed. Of course, patience and creativity in selling should always be there.)

In 2006, chocolate-coated polvoron received the 2006 National Shoppers Choice Award. True enough Marissa'a sweetness has gone a long, long way.



Photos by DOST-CAR

# Tasty nuts roast at Spark



Sparkling Iron owner, Ms. Myrna Chawag answers queries from the media during a project visit at the firm's production area in Green Valley, Baguio City Feb. 16, 2010.

#### By JOHN D. SANTIAGO S&T Media Service, CAR

want a name that will be remembered for a long time," said the founder and owner Ms. Myrna M. Chawag, 41, single, and a native of Barlig, Mountain Province.

This explains the unique trade name of the "Sparkling Iron" brand, registered legally as Sparkling Iron Livelihood Enterprise, based at Dontogan, Green Valley, Baguio City. Chawag's firm produces creamy nuts, as well as coated and choco nuts.

Just like her firm's trade name, Chawag's company is solid, unyielding, and resolute all-woman group who wants to make anybody's day sparkle through its delicious sweets and nuts.

#### A hodge-podge of products

The business, established in 2006 as a single proprietorship, initially produced peanut butter, polvoron, and chocolate bars with peanuts. However, after a year of several product trials and experiments, the current product line evolved to become highly acceptable to the market.

## set-up

Market outlets are local hotels and restaurants, caterers of government events and activities, and school canteens. Expansion of markets continued in 2008, covering some neighboring provinces such as Mountain Province, La Union, and Abra, to as far as Manila and Cebu.

But Chawag's success did not come easily. There was a time that she hit the slump.

#### Need to focus

"After some discouraging times when our various products flopped, we came to realize that we have to focus on which product we wanted to sell," confided Chawag. "Product improvement and competitive pricing are key factors that we needed to polish to achieve our goals of penetrating the market. This is what made us decide to focus on peanut processing."

Creamy nuts, the most saleable product, is made of ground oven-roasted peanuts baked in milk and other ingredients. Before being called creamy nuts, it was named "milky nuts." However, the melamine scare



urged her to change the label to "creamy nuts."

#### **SET-UP** intervention

Enrolled in 2009 as Upgrading of Sparkling Iron Livelihood Enterprise project under the Small Enterprise Technology Upgrading Program, the firm expected to adopt good manufacturing practices, increase its production volume and income, and improve quality of products.

According to Dr. Ben Ladilad, DOST-CAR regional director, DOST-SET-UP's technology intervention provided to the firm the acquisition and installation of an oven toaster, a peanut grinder, stainless tables, and trays. These equipment enabled the Sparkling Iron to increase its productivity in production, cost-efficiency, volume, and quality by five percent. Aside from the equipment, DOST assistance also include trainings on Good Manufacturing Practices, Hazard Analysis Critical Control Point, and improved product packaging.



Sparkling Iron workers and DOST-CAR personnel try the newly-delivered mechanical cutter acquired by the firm through the DOST SETUP project.

"Being known as a DOST assisted project makes a lot of difference, particularly in marketing our products," said Chawag. "Customers are assured of the excellent quality of our products which are also safe and environment friendly."

She added that ever since she used the sticker packaging labels designed by DOST, "more orders were coming even during the off-season," she said. "In fact, we are expanding our market outlets to cater additional clients outside Baguio-Benguet."

Before engaging in food processing, Chawag worked with a recruitment agency. However, she came to realize that her boss, the owner of the agency, was the only one getting rich without even sharing the wealth with the workers.

"I told myself, 'Why not put up my own business and share with my workers whatever income I have?'," she said. She resigned from the recruitment agency and enrolled in skills training activities sponsored by private and government institutions. Soon, she focused on food processing trainings.

Government's assistance through the DOST-SETUP helped Chawag achieve her dream of helping young mothers and students in her neighborhood have additional income to augment their family's financial needs.

Aside from benefits guaranteed to regular employees, Sparkling Iron is also sponsoring one-child per worker in schooling. A monthly stipend of P300.00 is provided to deserving children-students of the workers. Presently, the firm is sponsoring four children who will receive stipend until they graduate from college. "But, of course, the kids should not have failing grades," Chawag clarified on the availment of this privilege.

Chawag handles the overall management of the firm. Workers are assigned to handle specific functions like packaging, purchasing, and delivery of products. Currently, there are 10 regular (including the owner) and five part-time workers composed mostly of young mothers, a widow, and working students.

Sparkling Iron is lined-up for Manufacturing and Productivity Extension Program (MPEX) consultancy for 2010. MPEX is another program of the DOST designed to provide manufacturing and productivity consultancy services under the following sectors: agro and food processing, furniture, gifts and holiday decors, information technology, material-based (wood, bamboo, minerals, and leather), metals and engineering, and microelectronics.

## nutrition

# Growing older but getting healthier

AS PEOPLE grow old, they start to feel body aches and pains. The ageing body undergoes physiological, psychological, and economic changes. Tiring bones and muscles have given way to fat because of the inactive hormones. All of these changes contribute to poor nutrition among elderly persons.

The key to health is balanced diet. Like everyone else, older people need a balanced diet to preserve good health and maintain quality of life. The following nutrients will be of great help as one grows older:

#### Water

Older person often suffer from dehydration. This is because the body's water content decreases as one grows older. Older persons should remember to regularly drink at least an ounce of water for every kilo of body weight. For quick reference, follow the Daily Nutritional Guide Pyramid's recommendation of eight glasses a day.

#### Protein

Protein is essential as a person ages. Protein is needed to maintain a healthy immune system and to prevent muscle wasting. Foods such as egg whites, chicken without skin, lean meat, and fish, which are low-fat sources of proteins, are very much essential for the older persons.

#### **Carbohydrates and Fiber**

Carbohydrates provide energy for the entire body. Carbohydrate-rich foods are bread, pasta, cereals, among others. Older persons usually suffer from constipation. Prevent constipation by taking a diet that is rich in water and fiber.

#### Fat

The diet of older people should be low in fat but not fat-free. Limit fat intake by using only lean meats and low-fat dairy products. Limit frying as a means of cooking the food.

#### Iron

Iron helps build and maintain blood supply. It gives the healthy red color to the blood. Iron deficiency is common among older people who do not eat much. Such people should eat plenty of green leafy vegetables, breakfast cereals or red meat.

## Zinc

Elderly bodies find it difficult to assimilate zinc. Zinc helps the body use protein and carbohydrates. It also helps hasten wound healing. Take fish, poultry, and meat in order to satisfy the zinc requirements of your body.

#### Calcium

When people age, they hardly get enough of calcium. The elderly require at least 800 milligrams (mg) of calcium per day according to the recommended energy and nutrient intakes (RENI) for Filipinos. Many of the older persons avoid drinking milk out of fear that it might upset their digestive processes. If a person is averse to milk, one could use non-fat milk powder instead of regular milk. Calcium can also be obtained from foods such as low-fat cheese; dried fish, especially if eaten with bones (dilis, bia, tabios, ayungin); malunggay; saluyot; kintsay; mustasa; and squash.

#### Vitamin B12

Cobalamin or vitamin B12 facilitates maturation of red blood cells. It also protects the "myelin," the fatty material that covers the nerves and enables one to transmit electrical impulses (messages) between nerve cells. Vitamin B12 is usually absorbed by an intrinsic factor in the stomach. Many of the elderly suffer from vitamin B12 deficiency because they are afflicted with atrophic gastritis, a medical condition characterized by inflammation of the walls of the stomach, growth of bacteria, and lack of the intrinsic factor that is responsible for the absorption of this vitamin into the system. The elderly need each of these nutrients to keep themselves healthy. The elderly should be as active as possible and maintain a balanced diet. Following the FNRI's Daily Nutrition Guide Pyramid for Older Persons can serve as a reference. Growing older does not mean one have a reason to neglect the body. An elderly should always eat well and follow good nutrition practices to enjoy a long and healthy life. CSDU

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For more information on food and nutrition, contact: Dr. Mario V. Capanzana, Director, Food and Nutrition Research Institute, Department of Science and Technology, Gen. Santos Avenue, Bicutan, Taguig City; Trunkline: 837-2071 local 2296 or 2287; Telephone/Fax No.: 837-3164; e-mail: mvc@fnri.dost.gov.ph or mar\_r\_c@yahoo. com; Website: http://www.fnri.dost.gov. ph (Victor J. Alfonso, S&T Media Service, FNRI)

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**Multi-awarded scientist pays courtesy visit to Pres. Arroyo.** Dr. Lourdes Cruz, winner of the L'Oreal-UNESCO Awards for Women in Science for Asia Pacific, exchange animated talk with President Gloria Macapagal Arroyo in Malacañang during a courtesy call May 5. Dr. Cruz is the first Filipina to receive the award which hailed her discovery of marine snail toxins that can be used as painkiller for people afflicted with cancer, epilepsy, and brain disorder. Conferred National Scientist in 2006 by the Department of Science and Technology's National Academy of Science and Technology (NAST), Dr. Cruz's heart goes to the development of poor rural communities. When asked what she will do with L'Oreal-UNESCO's cash prize of \$100,000, she said that she will use it to buy a piece of land to serve as rural livelihood laboratory for the Aetas as a means to preserve and tap into their vast knowledge of traditional medicine. *(Photo by Henry de Leon, S&T Media Service)* 



Multi-awarded scientist, inventors present international awards to Pres. Arroyo. President Gloria Macapagal Arroyo proudly welcomed and congratulated multi-awarded scientist Dr. Lourdes Cruz (fourth from left) and inventor couple Dr. Virgilio Malang (leftmost) and Yasmin Espiritu Malang (second from left) for their various awards that added feather to the country's science and technology cap. Dr. Cruz bagged the L'Oreal-UNESCO Awards for Women in Science for Asia Pacific for her discovery of marine snail toxins that can be used as painkiller for people afflicted with cancer, epilepsy, and brain disorder. Meanwhile, the Malangs bagged international invention awards in Europe and Bangkok for their invention named "Vitamin Beer," a light beer fortified with multivitamins that serves as alternative to regular beer for the health-conscious. With the group are science secretary Estrella Alabastro (second from right) and Engr. Edgar Garcia (rightmost), director of the Department of Science and Technlogy's Technology Application and Promotion Institute. Pres. Arroyo pledged to give additional support to the awardees' projects. (Photo by Henry de Leon, S&T Media Service)

Philippine Science High School - Eastern Visayas Campus students won Fourth Place Grand Awards in the Team Awards category of this year's Intel International Science and Engineering Fair (ISEF) held last May 9-14 in San Jose, California, USA. The group was recognized for their study entitled "Creating a natural treatment for red tide using indigenous materials." The group was welcomed by Department of Science and Technology Undersecretary Forunato T. de la Peña (middle) in a courtesy meeting recently. Others in photo are (L-R): Cecilia Ubarra, Intel Philippines, Education Programs Manager; Marc Mapalo, Marc Arthur Limpiado, Maria Clara Isabel Sia, and Jean Reni de Guzman of the Philippine Science High School- Eastern Visayas Campus; and Dr. Claro Santiago Jr., Intel ISEF mentor/trainor and DOST Scientist. (By Joy M. Lazcano, S&T Media Service)

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