



Making science
work for you

Inside

DOST helps Ramblon to have safer communitiesp2
 DOST council names outstanding researchers.....p3
 Inventors' group pushes for "Inventor of the Year" Award.....p4
 InFocus.....p4

UP, USC studies get plum in the BPI-DOST awards

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

Three college students from all over the country received the prestigious BPI-DOST Science Awards last March 6, 2014 at the Mind Museum, Bonifacio Global City in Taguig.

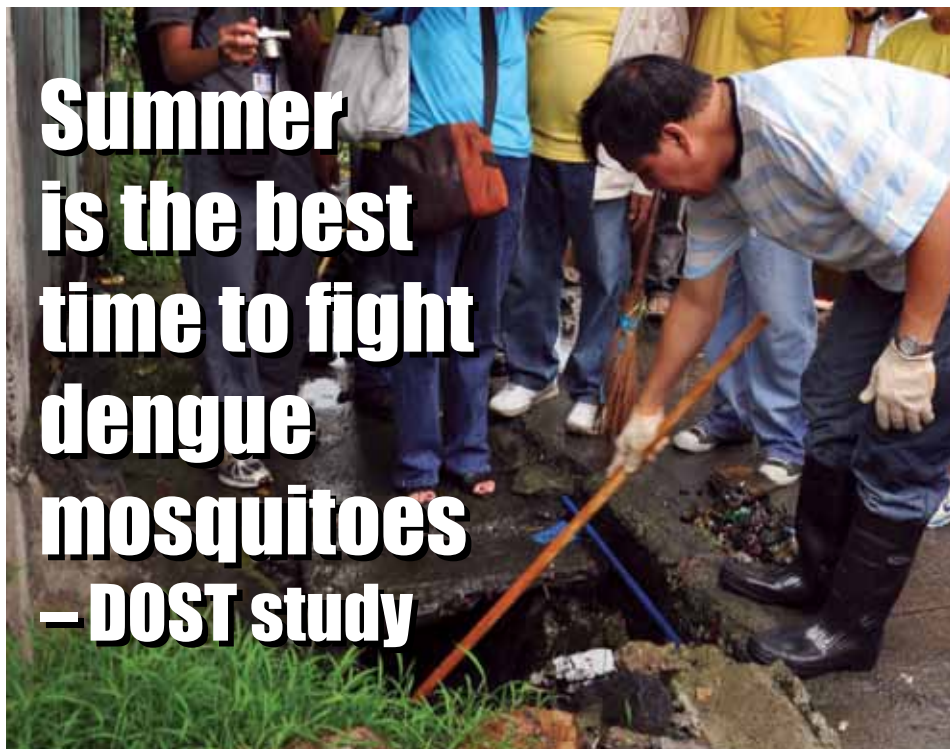
Alexander John Cruz, a BS Chemical Engineering student from University of the Philippines Diliman, bagged the grand prize for his project "Design and Field Testing of a Plasma-Enhanced Optical Fiber Reactor for Hydrogen Production via Visible Light-Driven Photocatalytic Water-Splitting." His study demonstrated the production of hydrogen as water passes through a reactor that uses light as separator. The technology has potential use for power generation or as source of renewable energy, something highly useful as the country struggles with limited power supply. As grand winner, Cruz received P50,000 cash prize from BPI Foundation and a graduate scholarship grant from DOST's Science Education Institute.

Meanwhile, Jessa Marie Makabenta, a BS Chemistry student from the University thePhilippines Los Baños, was awarded a cash prize of P30,000 as first runner-up for her project entitled "Sodium Caseinate Encapsulation of Coconut-Oil Extracted Astaxanthin from Shrimp Wastes for Enhanced Stability, Bioavailability and Bioactivity and Controlled Release." Her study looked into improvement of the properties of astaxanthin, a chemical derived from shrimp wastes, which offers benefits in nutraceutical, cosmeceutical, and aquaculture industries.

Second runner-up was Kevin Colina, a BS Computer Science student from University of San Carlos in Cebu City, for his project entitled "Electronic-Storybook Creator with Cebuano Natural Language Processing-Based Animation for Kindergarten Educators."

continued on page 2

Summer is the best time to fight dengue mosquitoes – DOST study



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By MARIA LUISA S. LUMIOAN
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Summer may be the best time to eliminate the breeding sites of dengue-causing mosquitoes to prevent a dengue epidemic in the coming rainy season.

This was revealed by Dr. Frances Edillo of the University of San Carlos in her talk during the 32nd anniversary celebration of the Department of Science and Technology-Philippine Council for Health Research and Development (DOST-PCHRD).

Her statement stems from a DOST-PCHRD funded study, which she led in Cebu City, proving that transovarial transmission of the dengue virus occurs in the study site. Transovarial transmission is the transmission of a virus from the mother mosquito to its offspring. Horizontal transmission, on the other hand, is the transmission from mosquito to humans and vice versa.

The study is limited to *Aedes aegypti*, the more common vector or carrier of the dengue virus in the country.

The research group collected larvae and pupae from house and field premises in four randomly selected sites in Cebu City, every month from November 2011 to July 2012.

Using Polymerase Chain Reaction (PCR), a technique for making multiple copies of a gene from a sample DNA, the researchers were able to determine the presence of three of the four dengue serotypes or variations from the collected samples. These identified serotypes are DENV-1, DENV-3, and DENV-4.

The research also revealed that the month of April registered the highest minimum infection rate in the mosquito samples.

Edillo explained that if the larvae and pupae infected with dengue virus survive to become mosquitoes in the following rainy season, these mosquitoes could set off an epidemic among humans via horizontal transmission.

In addition, she noted that Cebu City exhibits a pattern wherein a dry season with a low number of dengue cases is followed by a rainy season with a high number of dengue cases.

DOST helps Romblon to have safer communities

The Department of Science and Technology (DOST), in partnership with the Department of the Interior and Local Government and the Office of the Civil Defense, runs its fourth leg of the disaster preparedness information campaign dubbed as "Iba na ang Panahon! Science for Safer Communities" at the Romblon State University, Odiongan, Romblon on March 20 and 21.

The two-day event will provide the local chief executives and other provincial disaster risk reduction managers (PDRRM) with better understanding on the hazards in their own localities. It features science-based tools such as high resolution maps and flood modeling software that will help the local government in reducing the loss of lives and damage to properties and infrastructures during calamities.

Experts from the Philippine Atmospheric, Geophysical, and Astronomical Service Administration, Philippine Volcanology and Seismology Institute, and the Nationwide Operational Assessment of Hazards will discuss further the various hazards in each province down to the communities.

According to Science Secretary Mario G. Montejo, "Iba na ang Panahon! embraces the change in our seasonal climate and weather patterns and the severity of the impact of weather-related natural hazards in the country."

The event will have workshops to provide familiarization on new disaster management tools and create scenario-building exercises for local executives such as governors and mayors and disaster risk reduction managers to develop area-specific disaster management protocols during a calamity.

According to Sec. Montejo, "Our objective is to increase the local risk knowledge of the local executives and the people in their communities, capacitate them to do an effective monitoring of a looming calamity, test their warning and communication protocols, and build their response capabilities."

It is expected that by capacitating the local government to make better decisions in times of disasters through the help of cutting-edge technologies and efficient communication channels, the country can adopt to the devastating effects of climate change in the years to come.

"After these workshops, we expect local leaders and their communities to respond to our early warnings. As we have been doing, we will continue providing early warnings, and we expect the leaders to do early actions to attain zero, or only minimal, damage and casualties whenever a calamity hits their communities," Montejo said.

UP, USC...
from page 1

The storybook, developed as a response to the newly instituted K+12 Basic Education Program, was designed to help educators in using the mother tongue to motivate students to learn while enjoying. Colina received a cash prize of P10,000.

Some 29 students from ten universities made it to the short list and received a cash prize of P25,000 each. Out of the 29, seven finalists were selected, and, finally, three winners bagged the plum after presenting their science projects before a panel of judges during the morning of the awarding.

In his message, DOST Undersecretary for S&T Services Prof. Fortunato de la Peña emphasized the need to continue beefing the S&T manpower of the Philippines. He congratulated the winners and finalists and encouraged them to continue their interest in science and technology to help the country.

"By recognizing our young researchers' innovative works, we hope to encourage many others to follow their path and pursue research," he said.

He likewise thanked BPI Foundation for its support and partnership in building the S&T manpower of the country for the past 25 years.

The BPI-DOST Science Awards was also graced by Roselle Ambubuyog, the first Filipino blind student who graduated summa cum laude with a degree in Mathematics from Ateneo de Manila University and also a past BPI-DOST Science Award winner. Ambubuyog's

speech, which detailed her various struggles and triumphs in pursuing a degree, further motivated the awardees and guests alike.

"Given the right tool, nobody is handicapped," Ambubuyog said.

The BPI-DOST Science Awards, which is in its 25th year, aims to encourage students as budding scientists and researchers to explore higher levels in fields of mathematics,

physics, engineering, chemistry, biology, and computer science.

Building the S&T manpower of the country is one of goals of DOST to help the country's economy. This is achieved through implementation of programs such as scholarships and other science projects in partnership with other private companies such as the BPI Foundation, Inc.



BPI-DOST 2014 Science Awardees, namely, Alexander John Cruz from UP-Diliman, grand winner (middle); Jessa mari Makabenta from UP-Los Baños, 1st runner up (second from left); and Kevin Colina from USnCarlos in Cebu City, second runner up (fourth from left) are flanked by DOST Undersecretary for S&T Services Prof. Fortunato de la Peña (leftmost) and BPI Foundation, Inc. President Cezar Consing (rightmost). The BPI-DOST Science Awards, now on its 25th year, is a joint undertaking of the BPI Foundation, Inc. and the DOST through the Science Education Institute. (Photo by Maria Judith L. Sablan, S&T Media Service, DOST-STII)



26 March 2014, Manila Hotel. The 2013 NRCP Achievement Awardees: (L-R) Engr. Lydia G. Tansinsin, member emeritus awardee; Dr. Auxencia A. Limhap, Government, Educational & International policies; Dr. Maria Corazon A. De Ungria, Medical Sciences; Dr. Rosario G. Monsalud, Biological Sciences; Dr. Jose E. Hernandez, Agriculture & Forestry; Prof. Fortunato T. Dela Peña, Engineering & Industrial Research; Dr. Maria Cecilia G. Conaco, Social Sciences; Dr. Eric A. Galapon, Physics; Dr. Christina A. Binag, Chemical Sciences; Dr. Reuben R. Cañete, Humanities; and Dr. Flaviana D. Hilario, Earth & Space Sciences.

DOST council names outstanding researchers

By JOSELITO A. CARTECIANO
S&T Media Service, DOST-NRCP

The National Research Council of the Philippines (NRCP) of the Department of Science and Technology (DOST) is pleased to announce the 10 outstanding researchers for 2013. The researchers will receive the annual Achievement Award on the first day of this year's 81st NRCP General Membership Assembly to be held on 26- 27 March at the Manila Hotel. The recipients are:

Dr. Auxencia A. Limhap for Education. Dr. Limhap is recognized for her invaluable contributions to the academic community as innovative educator and an advocate of the Lasallian transformative learning framework considered to have changed the landscape of mathematics education in the country. Her studies and researches resulted in the development of various modules and programs for various schools at different levels that contributed to the enrichment of research culture among the youth.

Dr. Marie Corazon A. de Ungria for Medical Sciences. Dr. de Ungria is lauded for her pioneering research in developing and validating forensic DNA technology in the Philippines which has been recognized by the scientific community here and abroad. Among others, her work in the establishment of population databases for forensic genetics and human population genetics in country alongside with her dynamic engagement with other stakeholders to enhancement of forensic science in the Philippines were indeed worthy of the award.

Dr. Rosario G. Monsalud for Biological Sciences. Dr. Monsalud is praised for her 33 years of active research on microbiology/ biotechnology, particularly on mycorrhiza and nitrogen fixing bacteria as biofertilizers, on bacterial taxonomy and on microbial prospecting for enzyme producers, biocontrol, nitrogen fixers and phosphate solubilizers. Her research outputs were published in both international and local refereed journals, including in ISI-indexed journals.

Dr. Jose E. Hernandez for Agriculture and Forestry. Dr. Hernandez is honored for his outstanding leadership in the field of plant breeding that pushed the UPLB- Phil Rice Varietal Improvement Program in developing 15 new rice varieties for irrigated and rainfed lowland areas. The program actively responds to the problems of food security and brings food to the tables of the households of the less privileged and economically vulnerable. He is also recognized for the number of scientific articles he authored and co-authored, all published in international and local refereed journals, that serve as scholarly resources for students and research fellows alike.

Prof. Fortunato T. de la Peña for Engineering and Industrial Research. Prof. de la Peña is commended for his outstanding research on industrial and chemical engineering. He is also recognized for his 13 years of steadfast service as Undersecretary for Science and Technology Services of the Department of Science and Technology (2001-2014). His tireless efforts in advancing research in the country has earned him a number of prestigious international and national awards like the Honorary Fellow of the ASEAN Foundation of Engineering Organization in 2013 and Dangal ng Bayan Award in 2005.

Dr. Maria Cecilia G. Conaco for Social Sciences. Dr. Conaco is recognized for her excellent research productivity in various areas of social psychology. She is also praised for her pioneering studies on Filipino social identity, ethnicity and migration, social categorization and identity in the Philippines, among others. Worth mentioning is her staunch advocacy to the development of the discipline of psychology in the Philippines through her inspiring and conscientious mentoring of graduate students.

Dr. Eric A. Galapon for Physics. Dr. Galapon is lauded for his outstanding research in quantum mechanics, quantum measurements theory, quantum tunnelling

time, quantum arrival time, mathematical physics, and computational physics, which all inspire excellence to his research fellows and students from the graduate and undergraduate Physics courses.

Dr. Christina A. Binag for Chemical Sciences. Dr. Binag is commended for her significant contributions in the field of surface characterization, electro-synthesis of materials, and synthesis of conducting polymers and nanomaterials.

Dr. Reuben R. Cañete for Humanities. Dr. Cañete is recognized for his service to the Philippine culture and artistic community. As a scholar, he authored and co-authored a number of books and academic articles on Filipino art history and criticism which were all recognized in both international and local journals.

Dr. Flaviana D. Hilario for Earth and Space Sciences. Dr. Hilario is lauded for her sustained commitment to excellence in delivering timely and relevant scientific knowledge in the fields of climatology, meteorology, agrometeorology, and remote sensing for immediate and long-term benefits of the country. She is also recognized for her efforts at infusing a culture of research in her organization, DOST-PAGASA, that resulted in the formulation of various critical climate change action plans in the Philippines which help prepare the country for the uncertain climatic future.

Putungan, the practice of honoring and welcoming guests in the province of Marinduque, will be the motif of the awarding ceremonies that will serve as the first day's interlude of song and dance act.

Each awardee will receive Php25,000 and a medallion of excellence. DOST Secretary Mario G. Montejo and NRCP President, National Scientist Lourdes J. Cruz alongside with the members of the NRCP Governing Board and NRCP Executive Director Carina G. Lao will lead the awarding ceremonies.



Members of the FIS during their central membership meeting at the DOST Executive Lounge (Photo by Ceajay Valerio, S&T Media Service, DOST-STII)

Inventors' group pushes for "Inventor of the Year" Award

By ANGELICA A. DE LEON
S&T Media Service, DOST-STII

The Filipino Inventors Society (FIS) is now moving for the Senate to select an Inventor of the Year annually from among the Philippines' crop of talented technology whizzes.

This was announced by FIS Vice-President for Luzon, Inventor Manuel R. Dono, during the group's General Membership Meeting and Annual Assembly last February 28, 2014 at the Department of Science and Technology (DOST) Executive Lounge, DOST Compound, Taguig City.

FIS, one of the oldest government recognized organizations in the country, is supported by DOST and housed within the building of the Technological Application and Promotion Institute, a DOST agency in

charge of commercializing Filipino-made technologies.

The organization is now working for the selection of the first Inventor of the Year toward the end of the year, when the Senate will have its last session for 2014. "We would want to monitor the progress of the inventions of all inventors who would want to vie for the honorable slot given to any inventor for that matter," Dono said.

He added that FIS in its next board meeting will come up with the timetable and criteria for the award, and discuss the cash prizes to be handed out.

"If [somebody] qualifies, then we have to assess and re-assess if the qualifications

are really right as far as the criteria are concerned," he emphasized. "Of course we will be asking some government agencies, including DOST's Science and Technology Information Institute, to help us in assessing and coming up with a good nominee for the position."

At this stage, FIS has already identified the qualified inventors. "We have to tell them, 'okay, you have to move faster, move decisively, to qualify,'" said Dono.

"We would want people to dream dreams and make good with their inventions. A lot of inventors have lost their enthusiasm, lost hope. It should not be like that. There is hope for as long as we live," Dono concluded.

InFocus



President Benigno S. Aquino III shares the stage with Department of Science and Technology Region XI Director Dr. Anthony Sales (left of Pres. Aquino), Undersecretary for Regional Operations Carol Yorobe and Assistant Regional Director for Technical Services Elsie Mae Solidum (2nd from right and extreme right, respectively) for a snapshot during the 16th Philippine Quality Award (PQA) Conferment Ceremony at the Rizal Hall of the Malacañan Palace. (Photo by Benhur Arcayan / Malacañang Photo Bureau)

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