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S&T POST

Pinoy Idols IN SCIENCE & TECHNOLOGY

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Pinoy Idols

"Science must serve a human purpose."

This quote, made famous by no less than National Scientist Gelia T. Castillo, has also been her guiding principle. She also immortalized the following line as once quoted by the Pioneers Project, "when the best science and scientists are devoted to the problems of those who have less in life, that is equity and ethics at its best."

By these lines, some may have been inspired. Yet, not so many of them have been known.

It is noteworthy that a number of Filipino men and women of science have become the best role models not only for the youth but for everyone as well. They have since been dubbed as new *Pinoy Idols* who deserve more than heartwarming accolades but more importantly the unquestionable respect for what they have done. They serve as beacons, silently proving that Filipinos can do it.

For the last issue of the S&T Post in 2014, the editorial team decided to showcase a 'few good men and women' in the Philippine science community who have generously shared more than what was expected of them so that human development is pursued through science and technology; so that more would be informed.

To give you a glimpse of what is in store for this issue, the team is proud to present its featured personalities who have contributed significantly to this endeavor: Professor Fortunato T. Dela Peña who served the Department and the scientific community with all this heart and best of intentions and reliable expertise; Dr. Jaime C. Montoya, Academician and Career Executive Service Awardee for his innumerable contributions in the field of health research; Engr. Rowen R. Gelonga, DOST Region VI Director and Career Executive Service Awardee as well for being an outstanding administrator of science; and the DOST-ITDI OL Trap Research Group for the innovation to help curb the menace brought about by the dreaded dengue; among others.

The contributions made by these outstanding personalities have added much to the strengthening of science and technology in the country. By way of their unquestionable dedication, they have undoubtedly been pushing the limits of what they can do and offer to narrow down the obvious inequalities in Philippine society.

Other stories appearing in this issue complement our features on these personalities. Among these are articles on locally developed technologies, improved S&T services, development initiatives, and a lot more.

Interestingly, there is an increasing trend in scientific and technological activities that include patent applications, an area of expertise of the Department's Technology Application and Promotion Institute (DOST-TAPI); and the upgrading of facilities for the safe use of nuclear technology in the country as pursued by the DOST's Philippine Nuclear Research Institute or DOST-PNRI.

Also, a few of the Department's interventions for the country's micro, small, and medium enterprises or MSMEs are, once again, featured as development initiatives of SETUP or the Small Enterprise Technology Upgrading Program, one of the flagship programs of the DOST.

Latest updates on disaster related initiatives of the Department through the now famous Project NOAH or the Nationwide Operational Assessment of Hazards, such as its winning an international award, are also included in this issue.

Outstanding individuals, pioneering efforts, and world-class technologies are seen as the 'new normal' in this highly competitive world, especially now that the country braces for the country's integration into a wider and more dynamic ASEAN economy.

Now more than ever, the need is great for more *Pinoy idols*.

Aristotle P. Carandang, PhD

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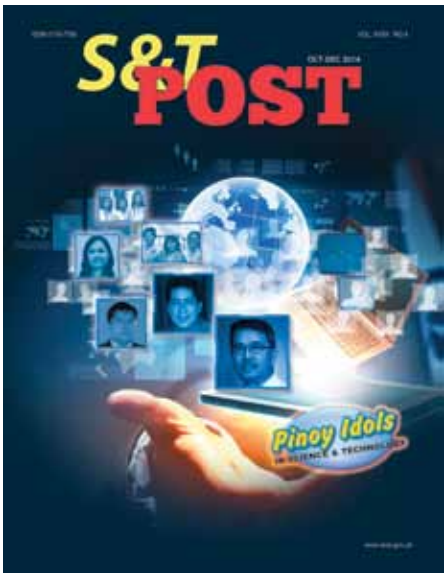
OUR COVER



In this issue, we showcase homegrown personalities who helped build science and technology (S&T) in the Philippines and thus received appropriate recognition in 2014. Living in a country where S&T potentials are far from being fully mined, these personalities do not only boast of high-impact contributions with global significance; they also represent the others in their field – those who came ahead of them and those still waiting in the wings – whose contributions to science are lesser known. They are the faceless pioneers who have blazed the trails now being tread by our featured personalities and the nameless neophytes who are soon to follow their footsteps. Through these generations of scientists and technologists, S&T in the country is slowly being built, shaped, and enhanced for the future of our nation. Thanks to them, the Philippines is in good hands.

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Game development competition launched

By ALAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

THE PHILIPPINE Science Heritage Center (PSHC), the country's resource center highlighting the significant contributions of Filipinos in the world of science, will start becoming interactive in 2015 as the Department of Science and Technology (DOST), through its advisory body, the National Academy of Science and Technology (NAST), launched the Salinlahi Evolution: Game Development Competition last December 5, 2014 at PSHC in Bicutan, Taguig City.

The competition, open to college students with the skills and talent for creating digital learning games anchored on science and technology (S&T), features group and individual categories. The computer games should run on Windows while mobile games should run on Android devices. They should be in English and may be played even without internet connectivity.

The winning digital games will be featured at the PSHC, which is under the management of DOST-NAST. The plan is to have it exclusively distributed in the center for six months.

"Being a vital partner in education, centers have now ventured into the use of digital technology, especially interactive digital exhibits, to increase engagement of the public and to facilitate learning better," said Dr. Jaime C. Montoya, executive director of DOST's Philippine Council for Health and Research Development (PCHRD) and focal person for PSHC.

Dr. Montoya added that it is preferable that the games are not time consuming and should incorporate S&T concepts reflecting PSHC's aim to honor and promote Filipino scientists and their contributions. They should not contain vulgarity, violence, defamatory language or any other subject deemed inappropriate for the tone of the competition.

The criteria for the competition are: 20 percent for relevance to the topic, idea/enjoyability, and game mechanics; 15 percent for graphics and sound; and 10 percent for trailer.

For more inquiries about the competition, please call 632) 837-3170 / 838-7739 and (632) 837-3170 email at secretariat@nast.ph. (S&T Media Service)

Trash raker to help rid QC of garbage problems

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

QUEZON CITY will soon rid its estuaries of tons of garbage clogging its waterways with the recent turnover of an Automatic Trash Raker Facility (ATR) by the Department of Science and Technology (DOST) to the city.

The waterways run all the way to San Juan River which is blamed for the above-the-waist flooding in G. Araneta Avenue in QC and its nearby barangays.

Developed by DOST's Metals Institute Research and Development Center, the ATR was patterned after existing foreign developed trash rakers in Metro Manila's pumping stations. At five meters high and six meters wide, the machine has six rakes and is run by a 10 HP motor output. It collects trash thrice a day for 5-10 minutes, depending on the volume of garbage that flows especially during typhoons.

The ATR stands in the middle of Balingasa Creek along G. Araneta Avenue corner Mauban Street in Barangay Manresa, QC.

According to DOST Secretary Mario G. Montejo, studies showed that among the major contributors to Metro Manila floods is the inefficiency of garbage collections in estuaries and canals. Tributaries such as the Balingasa Creek are likewise blamed for the immediate rise of flood waters during torrential rains.

"So what we did is look for an efficient garbage collection technology that will take these out of the creeks and go straight to the garbage trucks for proper disposal," he explained.

Montejo added that President Aquino asked for DOST's long-term solution to the problem concerning Manila Bay which has been bearing the brunt of major typhoons as tons of solid wastes from nearby cities end up sprawled over its shores.

Meanwhile QC Mayor Herbert "Bistek" Bautista called for government officials to work together and refrain from blaming each other when calamity strikes. "I will talk to the League of City Mayors and convince them to adopt this technology from DOST," said Mayor Bautista.

The ATR is scalable depending on the requirements of the adopter.

The technology does not only efficiently collect garbage from the estuaries, stressed Montejo, but also generates livelihood and jobs. "You (Mayor Bautista) might be proud that the fabricator of this technology is from Quezon City, so it does not only help us clear our waterways but it provides livelihood for your constituents," he explained.

Raking trash off Quezon City. Department of Science and Technology Secretary Mario G. Montejo explains to Quezon City Mayor Herbert "Bistek" Bautista (right) during the formal turnover of the Automatic Trash Raker Facility (ATR) project how the ATR can help clean the city's open canals and estuaries of garbage that goes all the way to San Juan River system that is blamed for the above-the-waist floods in the G. Araneta Ave. area and nearby barangays. The locally designed ATR can collect solid wastes from canals and estuaries and serve as an alternative to existing foreign developed equipment that are stationed in Manila, Taguig, and Pasig pumping stations.(Photo by Gerardo P. Palad, S&T Media Service, DOST-STII)

In 2008, the Supreme Court issued a Writ of Continuing Mandamus which directed 13 government agencies "to clean up, rehabilitate and preserve Manila Bay, and restore and maintain its waters to make them fit for swimming, skin-diving, and other forms of contact recreation." Until this day the Manila Bay waters remain polluted. A report by the Metro Manila Development Authority in 2012 said they collected 1,800 tons of garbage in Manila Bay, mostly plastics and wrappers washed out during heavy rains.

Montejo keen on raising $18B revenue thru IT-BPM

By ALLAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

SCIENCE SECRETARY Mario G. Montejo recently presented various Department of Science and Technology programs that aim to boost the Information Technology-Business Process Management (IT-BPM) industry, the sector that expects to raise $18 billion revenue by the end of the year.

Addressing guests and participants of the 2014 International IT-BPM Summit at Makati Shangri-La, Sec. Montejo showed how DOST's existing programs would help boost the productivity of various companies in the IT-BPM industry.

One of said programs is called the "Next Wave Cities" implemented by the DOST-Information and Communications Technology Office (ICTO). This program aims to establish IT-BPM hubs in areas outside Manila and Cebu, such as Baguio, Iloilo, Sta. Rosa, and Bacolod, and develop them to be among the top 100 IT-BPM hubs in the world.

"Next Wave Cities" helps in achieving ideal ecosystems suitable for IT-BPM operations. One of the program activities is conducting road shows in different areas in the provinces to increase the awareness of residents on other BPO segments aside from call centers. These segments include animation, game development, healthcare outsourcing, and software development, in which Filipinos can be highly competitive.

Meanwhile, DOST-ICTO Deputy Executive Director Monchito Ibrahim introduced the Rural Impact Sourcing program which capacitates residents in areas that are not yet ready to host IT-BPM companies. Through the program, individuals are mentored on how to build start-up companies and develop other desired skills for ICT.

For example, residents in the countrysides can work for clients located in major cities in the country. According to Ibrahim, there are now about 300,000 in the countryside working in the IT-BPM industry.

Meanwhile, Sec. Montejo said, "The IT-BPM industry had 525,000 full-time employees in June of 2010, and reached the one million mark in August this year. The goal of targeting 1.3 million jobs by 2016 is very achievable."

"We expect to raise $18 billion of revenue by the end of the year, and that makes the $25 billion target by 2016 more realistic," he added.

Secretary Montejo also said that even DOST's disaster preparedness programs actually help the industry.

As the country is prone to different natural calamities such as typhoons and earthquakes, DOST deploys Doppler radars in different parts of the country to provide accurate and timely information about the weather and disturbances. DOST through the DREAM-LiDAR project also develops hazard maps to provide information to local governments on their risks to certain hazards.

Montejo said that with this available information, IT-BPM companies could make better assessment and adjustments in all aspects of their operations.

Throughout the years, apart from the call center segment, the industry has expanded into other services. In fact, nursing and engineering graduates can now find opportunities in the IT-BPM industry. Nursing graduates and board passers, for example, have found jobs in the healthcare outsourcing segment.

Careers in healthcare information management include medical transcriptionists, medical secretaries, medical coders and billers, medical assistants, medical representatives, medical butlers and clinical research associates. (S&T Media Service)

Return to Ph, scientists urged

By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

"BALIK PUSO, balik Pinas." This was the call of Department of Science and Technology (DOST) Secretary Mario G. Montejo to Filipino scientists based abroad during the Gala Night for Balik-Scientists held last October 10 at the EDSA Shangri-la Manila, Mandaluyong City.

Montejo lauded the scientists who have returned under the DOST's Balik Scientist Program (BSP) "offering their life's work as shining testimony to the power of knowledge sharing and good old Pinoy bayanihan", and urged others to do the same.

First established in 1975 and revived in 1993, BSP was established to encourage foreign-based Filipino scientists, professionals, and technicians to share their expertise back home and boost the scientific, agro-industrial and economic development of the Philippines.

"BSP has become a model for drawing the nation's best and brightest minds toward the task of technological modernization and inclusive economic growth," Montejo remarked.

"We celebrate the milestones, big and modest, that we have been able to achieve as a result of our focus and dedication toward greater capability-building, keeping in mind the urgency of serving the needs of our network partners and most especially our constituents," he said as he commended the men and women behind the BSP.

Modern-day Dr. Jose Rizal

Dr. Joseph Adrian L. Buensalido, an infectious diseases fellow at the Wayne State University/Detroit Medical Center in Michigan, returned to the country under the BSP to extend his services and expertise to the Department of Medicine-Philippine General Hospital from August 2014 to July 2017.

"It is truly great to be back, but the reality is our home country is still a work in progress," Buensalido said.

He draws his inspiration from Dr. Jose Rizal whom he said was one of the earliest and probably the most famous among all the Balik Scientists.

"Like Rizal, we are experts in our respective fields. Many of us worked and trained abroad, giving us added perspective in our fields of expertise and in general how it is and how things are done in other countries," he pointed out.

Living by Rizal's famous quote "Ang hindi lumingon sa pinanggalingan, di makararating sa paroroonan" (Those who do not look back to where they come from will never arrive at their destinations), he said to "always remember the lessons you have learned while you're on your way up."

Not content to give his services only in Metro Manila, he also restarted his medical practice in Sta. Rosa Laguna, where he used to serve before he left for Michigan.

However, he admitted that the reach of one man's or one doctor's personal clinical expertise has its limits. "This is where trainings and research come in. As Balik Scientists we can train others, and they can pay it forward to the rest of the country."

He encouraged his co-Balik Scientists to encourage other world-class colleagues abroad to apply for the program.

He also commended the Balik Scientist Program for being prompt and efficient in providing assistance for the incentives due to him.

A long-term Balik Scientist like Buensalido is entitled to the following incentives: roundtrip international economy class airfare for him/her, spouse and two minor dependents; exemption from payment of travel tax; grants-in-aid for research and development projects approved by the Secretary; assistance in securing a certificate of registration without examination or exemption from the licensure requirement of the Philippine Regulations Commission to practice profession, expertise, or skill in the Philippines; among others.

On the other hand, BSP awardees who will stay for a minimum of 30 days to a maximum of 90 days under the short-term category will receive a daily subsistence allowance of US$150 per day and free roundtrip international economy class airfare.

For more information about the Balik Scientist Program, visit http://bsp.dost.gov.ph. (S&T Media Service) #balikscientistprogram #sciencePH #filipinoscientists #dostPH

The latest batch of DOST Balik Scientists (seated) pose with Sec. Mario G. Montejo (standing, third from left) and DOST officials (standing, from left) Dr. Jaime C. Montoya, Dr. Amelia P. Guevara and Dr. Rowena Cristina L. Guevara

Next Wave Cities eyed to ease traffic woes

By ALLAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

THE NEXT Wave Cities, a program of the Department of Science and Technology (DOST)'s Information and Communications Technology (ICT) Office, is one way to help solve Metro Manila's worsening traffic situation.

This is according to Monchito Ibrahim, deputy executive director of DOST's ICT Office, who attributed the daily traffic in Metro Manila to the many companies that still choose to operate in Eastwood, Makati, EDSA, and other major commercial destinations in the metro.

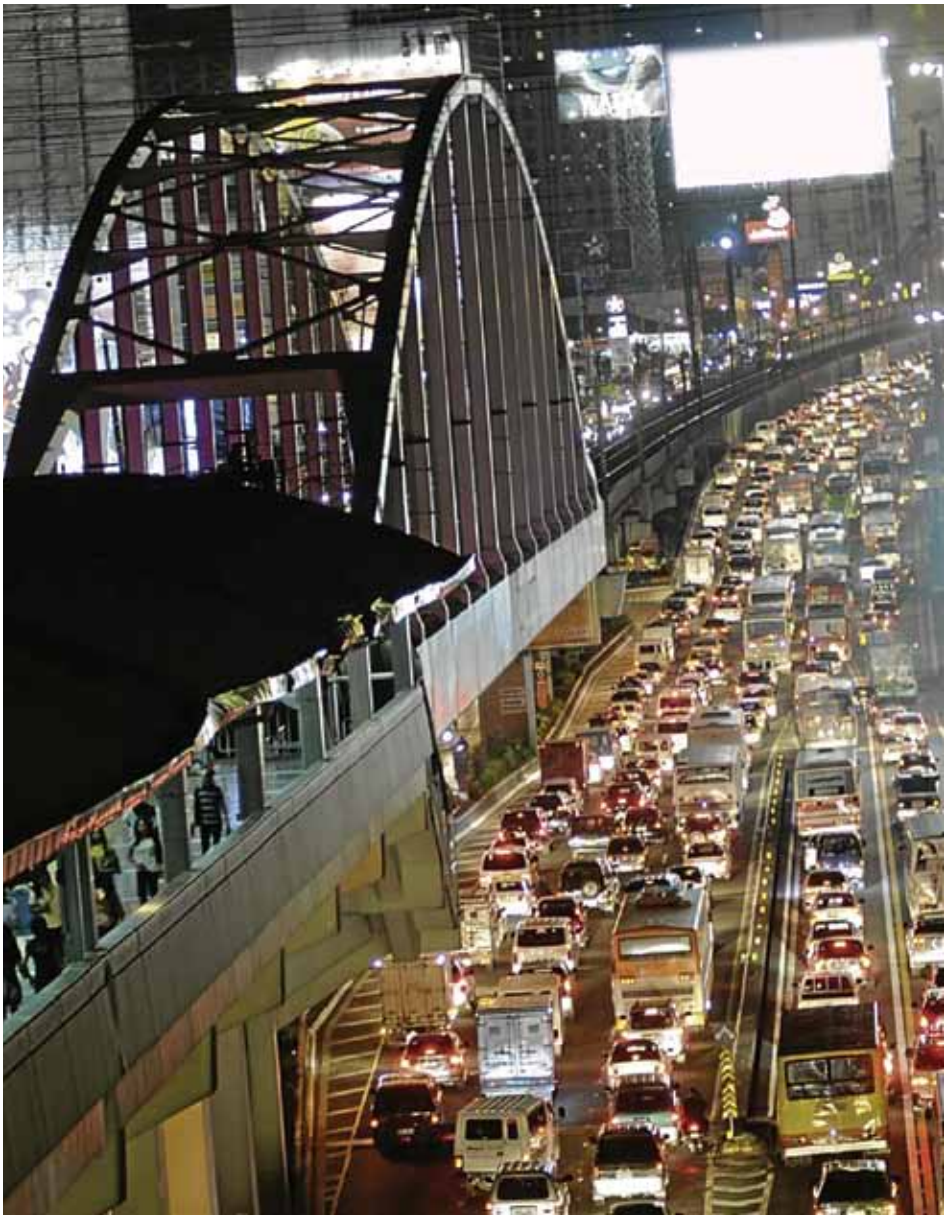
"This is why many Filipinos in the rural areas still opt to migrate to Metro Manila to take advantage of these job opportunities," said Ibrahim. "This leads to a scenario where office workers go to the same commercial districts, use the same mode of transportation at the same period of time, thus causing heavy traffic during rush hours."

"Through the Next Wave Cities Program, the DOST-ICT Office managed to introduce and recommend places in the regions that are ideal for IT-BPM operations," Ibrahim explained.

The ICT Office provides industry investors with extensive reports on the competency of these Next Wave Cities, such as number of quality educational institutions, infrastructures, and crime rate, according to Ibrahim.

The positive business environment offered by the identified Next Wave cities encouraged the establishment of IT-BPM hubs in the provinces instead of Metro Manila. Talent and office locations are already available, Ibrahim said, such that investors who decide to have IT-BPM operations in the provinces get less competition and avoid the so-called pirating of talent.

"We want the local residents in the countryside to have decent employment opportunities, wherein they can earn salaries that are enough to support their needs without leaving their families," he said.



business.nquirer.net_8_2v.

Ibrahim revealed that the number of full-time IT-BPM employees in the provinces has increased from more than 63,000 in 2010 to more than 300,000 as of August 2014.

ICT Office also conducts Stepping-Up the Value Chain, an awareness program that aims to promote other IT-BPM career opportunities aside from call centers or voice services to the provinces. These include game and software development, animation, healthcare information, accounting and finance, and engineering outsourcing services.

"We want them to present various options. If you are a nursing graduate and you are finding difficulties in searching for a job, particularly in other countries, you can use your expertise in healthcare information services. If you are an IT or multimedia arts graduate, you can maximize your creative skills in various IT-BPM services such as animation, game and software development," Ibrahim said.

Huge increase in patent applications reported

By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

IN LINE with Secretary Mario G. Montejo's directive, the Department of Science and Technology (DOST) through its agency Technology Application and Promotion Institute (TAPI) has facilitated the filing of 81 patents and utility models this year and is expected to fulfill its target of 100 applications by the end of the year.

Engr. Edgar I. Garcia, director of DOST-TAPI, announced during the Awarding Ceremonies for Filed Patents and Utility Models held last December 1 at the Heritage Hotel, Pasay City, that this year's feat is a significant leap from the previous years. TAPI was able to facilitate only seven patent and 11 utility model applications last year.

A patent is an exclusive right granted by the government to an inventor to manufacture, use or sell an invention for a certain period of time. A utility model on the other hand is a protection option for innovations that are not sufficiently inventive.

Engr. Garcia attributes the success to the more aggressive patent assistance program of TAPI and its collaboration with private partners which include the Association of PAQE Professionals (APP) and some member institutions of Innovation and Technology Support Office (ITSO) Network, namely University of San Carlos, Mapua Institute of Technology, Adamson University, Bicol University and University of the Philippines Cebu.

APP is the sole association of registered patent agents who passed the Patent Agent Qualifying Examination (PAQE) administered by the Intellectual Property Office of the Philippines. On the other hand, the ITSO

Engr. Edgar I. Garcia, director of Technology Application and Promotion Institute, reveals that the agency is close to achieving its target of facilitating the filing of 100 patent and utility models for 2014 during the Awarding Ceremonies for Filed Patents and Utility Models last December.

network – mostly composed of universities and research and development institutes throughout the country is a project of the Intellectual Property Office Philippines (IPOPHL).

Among those assisted by DOST-TAPI are research and development institutions within and outside of DOST, the academe, and private inventors.

Atty. Bayani Loste, president of the APP, welcomed the development as he revealed that there were only 193 Filipinos who filed for patents last year. In contrast, 2,900 foreigners have filed for patent in the country for the same period.

"Because of the partnership of DOST-TAPI with private practitioners, we should anticipate the momentum of increased patent grants beyond 2020," he added.

He explained that increase in patent grants will have positive effect on the Philippine economy.

"Imagine if we have 1,000 patent grants every year, and if each patent granted becomes a basis for a startup company, we would have 1,000 new companies each year. If each startup has a minimum of five employees, that translates to 5,000 new jobs based on patents alone," he said.

"If we assume that no one wants to fund startup companies, we can license them to foreign companies and let them produce these products and services. If we speculate that absolute royalty earned yearly is around $1,000 for each, we can get S1 M every year for the one thousand patents," he expounded.

Meanwhile, Mr. Jimmy Catanes, director of Virgen Milagrosa University Foundation, one of the beneficiaries for patent assistance, expressed his appreciation of DOST's program saying that this would help in making sure that the research outputs of the university will be put to good use and not "remain on the shelves."

Roman Lugto, inventor of a self-propelled grain collecting machine, also commended DOST for the immediate assistance given to him in filing his application.

Branding DOST

MediaCore comm plan to bring programs to public reach

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

The DOST MediaCore, the Department's network of information officers, crafted a two-year communication plan to position DOST's known and promising brands closer to the public. The group's main goal was to make the public aware and appreciate how DOST services and programs improve people's quality of lives.

Moreover, the group aimed to move stakeholders to adopt, support and advocate towards technological self-reliance, as espoused by Sec. Mario G. Montejo.

Brainstorming in the scenic Island Garden of Samal in Davao City, the group worked on messaging that would empower Filipinos to adopt S&T solutions in improving their lives, and win policy and budgetary support for S&T development.

"IEC", a usual fare among communicator groups, took on a new meaning from the usual "information and education campaign" to "inspire, engage, and convert", as coined by Asst. Sec. Raymund E. Liboro who challenged the group to "to bring out the best" of DOST.

Among the identified DOST "brands" to be prioritized in 2015 to 2016 are the following:

- ***One Lab*** – This allows networked laboratory transactions among DOST regional offices that enable clients to complete their testing requirements without transporting specimens from one testing center or laboratory to another.
- ***SETUP*** - The Small Enterprise Technology Upgrading Program is a nationwide strategy encouraging and assisting SMEs to adopt technology innovations to improve their operations and thus boost their productivity and competitiveness.
- ***Halal Laboratory*** - This includes testing whether the products have Haram contents that are forbidden for Muslims like pork, dog, horse and lard.
- ***Diwata*** – This is the first Filipino-developed micro-satellite to be launched into space in 2016
- ***PAGASA*** - The Philippine Atmospheric, Geophysical and Astronomical Services Administration is an institution that provides weather and climate-related information.
- ***PHIVOLCS*** – The Philippine Institute of Volcanology and Seismology is an institution that provides information on the activities of volcanoes, earthquakes, and tsunamis, and other specialized information and services primarily for the protection of life and property and in support of economic, productivity, and sustainable development.
- ***ADMATEL*** – The Advanced Device and Materials Testing Laboratory is a national testing facility equipped with state-of-the-art analytical equipment for failure analysis and materials characterization.
- ***RxBox*** – This is a multi-component program (biomedical device, electronic medical record system and telemedicine training) designed to provide better access to life-saving health care services in isolated and disadvantaged communities nationwide.
- ***Pisay*** – The Philippine Science High School is the country's foremost S&T specialized secondary school.
- ***Pinggang Pinoy*** - This is a new, easy to understand food guide that uses a familiar food plate model to convey the right food group proportions on a per-meal basis to meet the Filipino adult's energy and nutrient needs.
- ***STARBOOKS*** – The Science and Technology Academic and Research-Based Openly Operated Kiosk Station is a stand-alone one-stop S&T information shop that enables access to hundreds of thousands of S&T materials (digitized, video, and photos).
- ***Filipino Inventors***
- ***S&T Scholarships***
- ***Rice, goat, abaca*** – These will be the priority commodities for the next two years.
- ***Tuklas Lunas Centers*** – These centers are under the drug discovery and development program that aims to develop new drugs for tropical and other diseases including cancer using indigenous medicinal plants.

- ***Packaging and Labeling Services*** – This is the only Institution in the country that provides a one- stop shop for packaging and labeling solutions.
- ***CEST*** – The Community Empowerment through Science and Technology is a program that aims to help alleviate poverty by providing community-based livelihood to be run by the community itself through respective LGUs and the people.
- ***Non-Forest Products*** (bamboo, water hyacinth)
- ***Project NOAH*** – The Nationwide Operational Assessment of Hazards is a responsive program for disaster prevention and mitigation specifically for the Philippines' warning agencies to be able to provide a six-hour lead time warning to vulnerable communities against impending floods, and to use advanced technology to enhance current geo-hazard vulnerability maps.
- ***TECHNICOM*** – The Technology Innovation for Commercialization program provides funding for commercial prototype development, pilot plant production and intellectual property protection., as well as financial grant and access to research facilities and personnel of research and development institutes and other government institutions.
- ***Coral Reef Restoration***

These priority brands will be promoted through various methods and channels including printed materials, audio-visual presentations, indoor and outdoor advertisements, events, and media-based activities.

The group also agreed to a number of guidelines to strengthen the branding strategies of the agency.

The DOST MediaCore is a network of DOST personnel that plans and carries out information and marketing tasks in the DOST agencies and offices.

PNRI boosts nuclear safety & research facilities

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

THE DEPARTMENT of Science and Technology - Philippine Nuclear Research Institute (DOST-PNRI) strengthened its capability in monitoring and irradiation through the latest additions in its stable of nuclear facilities. Particularly, PNRI inaugurated its Electron Beam Facility and received the Environmental Radiation Monitor during the opening of the Atomic Energy celebration last December at the PNRI Compound in Commonwealth Avenue, Quezon City.

The Environmental Radiation Monitor System called ***EFRD-3300*** stationed in Korea.

(From left) PNRI Director Alumanda M. Dela Rosa, Cong. Francis Gerald A. Abaya and DOST Usec. Dr. Amelia P. Guevara observe the demonstration of a PNRI researcher on the detection of radioactivity from beach sands containing allanite using an RS230 portable gamma-ray spectrometer.

Warming up the event, DOST Secretary Mario G. Montejo opened the celebration with the weather update on Typhoon Hagupit. "When we speak about the weather, let's believe in PAG-ASA, when it's about nuclear, let's believe in PNRI. Let's believe in ourselves," he cheered the audience composed of institutional partners, stakeholders, media, students, PNRI personnel, as well as foreign dignitaries from Argentina, Russia, France, USA and Japan.

Montejo likewise lauded the PNRI staff for their commitment.

"I witnessed the vigor and enthusiasm of the PNRI workforce, the mature staff mentoring the new wave of nuclear scientists in fulfilling the commitment of PNRI to explore the peaceful uses of nuclear science and technology for the benefit of our people," said Secretary Montejo.

The Secretary also thanked the Korean Government for the turnover of the radiation monitor, and the international community including the USA, Japan, Russia, and Argentina for supporting the PNRI's project on the Electron Beam Facility. This facility, the first of its kind in the country, will be useful for research, semi-commercial electron beam services, and other radiation processing related applications.

Meanwhile, the Environmental Radiation Monitor System called EFRD-3300 provides continuous and real-time monitoring of ambient gamma radiation. Itwill be part of a nationwide early-warning system for monitoring radiation emergencies such as that which transpired at the Fukushima Nuclear Power Plant Station in 2011.

According to PNRI Director Dr. Alumanda M. Dela Rosa, "The additional facilities and equipment will be very helpful in improving our capabilities, not only in nuclear research but also in radiation protection and nuclear safety."

Congressman Francis Gerald Aguinaldo-Abaya, First District Representative of Cavite and keynote speaker during the opening program, said, "You might be wondering what a congressman and an architect are doing in this highly scientific occasion. To be honest, it is my brother Sec. Jun Abaya who is the science wiz in the family," referring to Sec. Joseph Emilio Abaya of the Department of Transportation and Communication who himself is also a former House representative.

"In the 14th Congress, one of (my brother's) legacies to me is the pursuit of the passage of the Comprehensive Nuclear Energy Law," said Abaya, a member of the House Committees on Information and Communications Technology, and Science and Technology.

House Bill 147 or the Comprehensive Nuclear Law will create a separate Regulatory Body independent of PNRI.

On the said law, he said, "I am proud to work with PNRI in shepherding (its) passage... in

Congress ...the bottomline is, there is a need for the Philippines to be internationally compliant with our nuclear regulatory practices."

He then pledged to the audience that he will "continue to work hard to push for its passage during this congress."

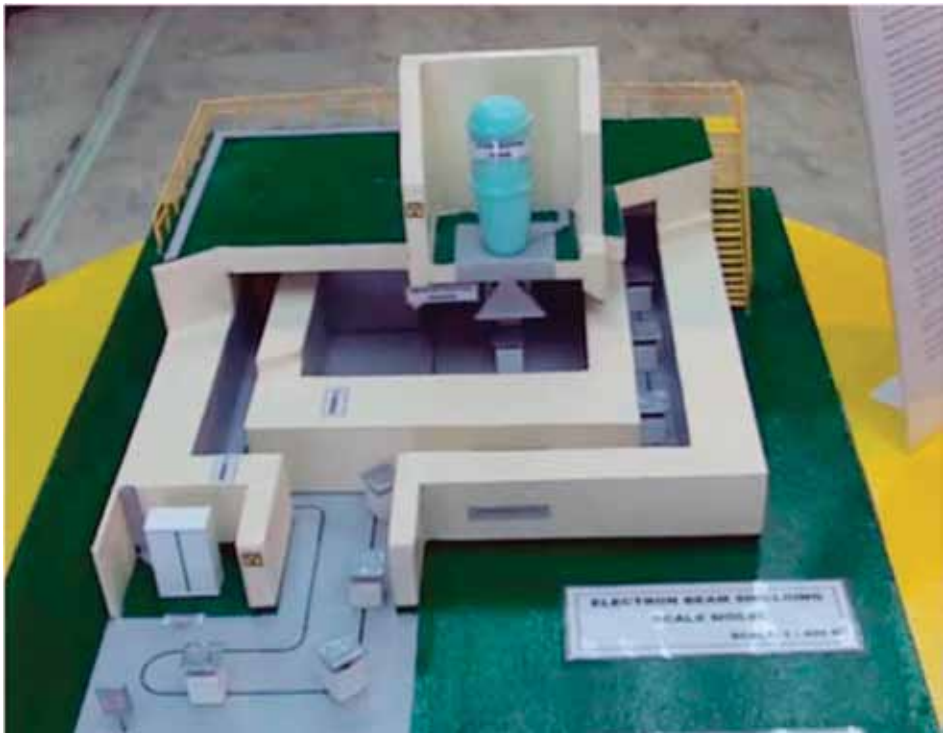
The ceremonies were attended by Dr. Sunil Sabharwal, International Atomic Energy Agency (IAEA) technical officer, Dr. Young Yong Ji, Korea Atomic Energy Research Institute senior researcher, and Dr. Bumsoo Han, CEO EB Tech., Co. Ltd.

Students likewise jampacked technical sessions on Dec. 10 with speakers from PNRI, the IAEA and South Korea discussing electron beam applications, environmental radiation monitoring, and various applications of nuclear analytical techniques in food, agriculture and marine industries.

Meanwhile, high school students competed in a showdown of knowledge on December 11. Parañaque Science High School won first place with Lawrence Glen Sabaria, Justine Mateus Medina and coach Jane Andrea Nitro. Second place went to Caloocan City Science High School with Patrick Canacana, Ma. Steffi Lucum and coach Angelo Cabic, while third place went to Manila Science High School with Benedict Anuta, Christopher John Limos and coach Ferdinand Bautista.

The first placer received a cash price of Php 30,000, the second placer Php 20,000 and the third placer Php 10,000, all including plaques and certificates of recognition.

At the closing ceremonies on December 12, PNRI gave recognition to DOST International Publication awardees, staff who patented their works, exemplary civil servants, and PNSQ winners. Dir.Dela Rosa also proudly announced that PNRI won the DOST International Awards for the highest number of ISI publications and approved patents. Moreover, she announced with pride that PNRI was finally awarded the ISO 9001:2008 certification as of December 2014, prompting loud cheers from the PNRI employees and staff.



Scale model of the Electron Beam Facility at the DOST-PNRI. (Photo by Shirley Marie S. Bernardo, S&T Service, DOST-STII)

Dr. Graceta Cuevas, the 42nd Atomic Energy Week Chairperson (on podium) gives the welcoming remarks during the opening ceremonies. Seated (from left) are PNRI Director Dr. Alumanda Dela Rosa, DOST Secretary Mario Montejo, Congressman Francis Gerald Abaya and Minister Counselor Guillermo Eduardo Devoto of the Embassy of Argentina.

"This is a team effort, and even I know that it involved very difficult work," said the Director as she thanked everybody for their efforts to achieve yet another milestone for the Institute.

Meanwhile, veteran scientists, employees and staff of PNRI who have already retired came home in a heartwarming reunion in An Afternoon in PNRI. *(With reports from Shirley Marie Bernardo, and Justina S. Cerbolles, S&T Media Service)*

Acknowledge scientists' role, DOST Balik Scientist tells studes

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

DURING THE National Biotechnology Week held at the Commission on Higher Education (CHED) in Quezon City, visiting UP professor and DLSU consultant Dr. Gonzalo C. Serafica urged the youth in the audience to acknowledge the role of scientists, who create the different products used by people in their daily lives, in the betterment of their lives and advancement of the economy.

Scientists are more respected in the United States, he stated during his talk on "Career Orientation Towards Biotechnology" held at the CHED auditorium last November 26, 2014.

He shared an experience in the States when he was asked about his profession. When he said he was a scientist, the person remarked that it was a very noble profession. "He looked at me as if I was a rock star," he recalled.

Serafica is a Department of Science and Technology (DOST) Balik Scientist, a program which encourages Filipino scientists and technologists abroad to come home to the Philippines and share their knowledge with fellow Filipinos for the advancement of the national economy.

DOST Balik Scientist Dr. Gonzalo C. Serafica during the National Biotechnology Week.

Encouraging the students to pursue a career in the sciences particularly biotechnology, he told them that science is financially rewarding.

The DOST Balik Scientist went to the US for further studies in Chemical Engineering in the late '80s. After earning his doctorate in 1995, he co-founded Xylos Corporation, which produced artificial skin or medical implants to replace or reinforce body parts such as patches for the shoulders and the brain. He got funding from the US government to develop an artificial skin for treating bed sores, diabetic foot ulcers and Venus ulcers.

"I was doing my doctorate on the production of the material but I knew that the money was on applications. So I filed a patent in '95. Then I started to market the technology," he related.

By the time he was 35 years old, Serafica had raised $25M and Xylos Corporation was doing well.

"There is a gap to be filled if you want to become an entrepreneur," he said as he reminded the audience how fulfilling it is for a scientist to see his own creation being used by people and benefiting from it.

Serafica eventually sold his company, retired at age 45, and decided to come back to the Philippines to put up another company by 2015. For the meantime, he helps local universities on technology utilization and advises private companies on intellectual property and patent issues. He also acts as consultant for the USAID's Science and Technology Research and Innovation Development for Economic Growth program or STRIDE.

He admitted that the Philippines lacks science oriented students and does not have enough jobs for graduates of S&T courses. However, he is hopeful that time will come when the country will be able to utilize whatever its scientists produce and at the same time attract those who've been away like him, to come back to the country and help the scientists who have stayed behind.

"The country stands to benefit in all these efforts," he said.

Science communication strategies featured in int'l fora

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

DR. ARISTOTLE P. Carandang, chief of the Communication Resources and Production Division of the Science and Technology Information Institute (STII), gave international science communication experts a glimpse of science communication strategies and S&T activities in the Philippines via presentations in three different international gatherings last 2014.

Most recently, Dr. Carandang presented the National Science and Technology Week (NSTW) during the "International Symposium on SHER (Science, Health, Environment, Risk) Communication in Asia with a Special Focus on Science Festivals" held at the Indian National Science Academy in New Delhi, India last October 14-17.

NSTW is an annual week-long event serving as a show window for Filipino ingenuity, innovation and S&T developments as well as a platform for promoting S&T as key drivers of economic development. It features various exhibits, fora, bazaars, technology demonstrations, launchings, and competitions, among others.

In particular, the annual event showcases Filipino innovations in agriculture, countryside development via enterprises, industry, IT-BPM, connectivity, health and nutrition, human resource development, and disaster preparedness.

With the theme "Philippines: A Science Nation Meeting Global Challenges," NSTW 2014 attracted more than 56,000 S&T enthusiasts in the country including high school and college students, as well as children - the biggest attendance in NSTW history.

"NSTW is an event that creates experience," Dr. Carandang noted in his presentation. "It shows how science and technology can improve the quality of people's lives, offer opportunities, lead to prosperity, and save lives."

Dr. Aristotle P. Carandang (third from left) with other delegates of the "Scientific Conference on Innovating the S&T Policy and S&T Communication" held in Danang, Vietnam.

Earlier in the year, Dr. Carandang touched on information communication (InfoComm) at the "Scientific Conference on Innovating the S&T Policy and S&T Communication" held in Danang, Vietnam from May 7-10. InfoComm, according to Dr. Carandang, has evolved from the rapid emergence and growth of new technology platforms.

"InfoComm highlights the power of convergence of Information and Communications Technology (ICT), Social Media, and Content Generation and Management – three of the most pervasive elements that define the relevance and success of businesses and service institutions today," said Dr. Carandang in his talk titled "S&T Communication Strategies: Initiatives from the Philippines' DOST-Science and Technology Information Institute."

He added that STII makes use of InfoComm to generate awareness of DOST's various programs and events, and push for its intended outcomes across various sectors namely, agriculture, enterprise, industries, IT-BPM, connectivity, health, education, and disaster preparedness.

Another presentation focusing particularly on "Science for Safer Communities: Iba Na Ang Panahon" (S4SC:INAP) was delivered by Dr. Carandang at the KAST-ASM-IAP International Workshop on "Science Literacy: Science Communication and Science Outreach" from June 12-13 at the Seoul National University in Korea.

For this campaign, STII partnered with PAGASA, PHIVOLCS, DILG and the Office of Civil Defense (OCD), to run the S4SC: INAP nationwide from March to May 2014.

S4SC:INAP brought officials and personnel of STII, PAGASA, PHIVOLCS, DILG, and OCD to all 17 regions of the country to promote the use of warning tools like flood models, hazard maps, and the Project NOAH and PAGASA websites. The IEC likewise provided local government officials and disaster risk reduction managers in every LGU with the chance to work closely together and devise action plans for calamities that may affect their localities.

When business marries science

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

The science of business and the business of science. Science and business can marry indeed-- they do work together. And they do so profitably. Read our success stories and be amazed.

Science in business = sense in business. Take the case of some Metro-based enterprises which infused science and technology (S&T) interventions in their businesses. They only have one thing to say: science spelled their success.

Extending the blessings

"DOST has given us much assistance… Hazard Analysis and Critical Control Points (HACCP), Manufacturing Productivity Extension (MPEX), etc)… I could no longer count how many," said Charlotte Tanoja of the MFP House of Quality Food Corp., more known for its product House of Polvoron (HOP).

Because S&T intervention improved production processes, HOP is now exported to 14 countries in addition to its seven mall outlets which include the biggest mall chain in the country. The management acknowledges that the company is much blessed, thus, they are now sharing their blessings to students who have less in life but are gifted with talents and skills.

"For every Christmas box (bought during the Christmas season), a part of it goes to the Real Life Foundation," revealed Charlotte. The foundation is part of the Every Nation Christian Ministries, formerly the Victory Christian Fellowship, which awards scholarship to secondary and tertiary students.

Good sense indeed

When a company hikes its production to 100 percent and its sales to 110 percent as it drops production time by 100 percent, then it spells success. When the company is able to do these through S&T interventions, then it is good sense indeed.

"We learned much on how to save energy, and the nuances of electricity costs, such as cheaper power costs in the afternoon so we do our production every afternoon," shared Fernando Esguerra of Mapagmahal Foods, maker of the Good Sense product line such as lemonade, red iced tea, calamansi, mangosteen, and others, including its celebrated mango puree which the company supplies to the Old Spaghetti House.

Aside from going through a number of consultancies, Mapagmahal also acquired several equipment that improved its production and product quality.

The company's latest proof of its excellence in quality is its citation as the "Best Lemon Juice Manufacturer for Metro Manila" in the National Product Quality Excellence

DOST-NCR Director Teresita C. Fortuna gives a brief talk on Small Enterprise Technology Upgrading Program, a DOST initiative that aims to strengthen small to medium enterprises by providing a package of assistance to enhance their productivity.

awards by the National Council for Product Service Quality and the Consumer Today Magazine. In 2008, Mapagmahal Foods bagged the "Outstanding Citrus Beverage Products Brand" by the Asia Pacific Awards Council and in 2005, the National Product Quality Excellence Awards.

Much good sense, indeed, as the company started its DOST-SETUP (Small Enterprise Technology Upgrading Program) journey in 2003 and pocketed its first quality excellence award just two years later.

Better impression on government

"Ang laki-laki ng utang na loob ko sa DOST (I owe DOST much)," bared Marinette Pagtakhan who admits her former impression on government agencies drastically changed upon availing of DOST's SETUP. Pagtakhan is the owner of Lampara Trends Inc. that has enhanced its wares by acquiring a DOST-developed spray booth, drying tunnel and sanding booth. The spray booth, a product of DOST's Forest Products Research and Development Institute, uses a more efficient method of spraying paint to products, lessening work time and improving the quality of paint application.

The company develops and produces decorative and functional items such as dish bowls, mirror frames, trays, containers, chimes, and other ornaments. The wares are made of natural materials such as capiz shells, paper, and wood, as well as metals and glass.

"Hope patuloy kaming hawakan sa kamay ng DOST (We hope DOST will continue to assist us)," Pagtakhan added.

Not an ordinary oven maker

If his company is just an ordinary oven maker, he would not be one of SETUP's success stories in the National Capital Region. And being "extraordinary" does not only mean enhanced production through DOST's S&T intervention, so said Marites Molina of the DCM Oven Inc, fabricator of bakery equipment such as oven, kneading machine, spiral mixer, roller machine, hopia griddle, and others.

"Majority of our clients are DOST-assisted firms which come as far as Mindanao," revealed Molina. "We learned about DOST through clients. Now, it is not only our clients that are DOST assisted but

also us."

Thus DCM Oven has add-on benefits –read: increased market -- through DOST's referrals to client bakeshops and food manufacturers and processors.

Molina said, "Well, this is one solid proof that local technology works," quoting DOST Sec. Mario Montejo's battlecry.

From bags to riches

Starting as a buntal fiber (from buri palm) supplier then turned into simple bag maker, Ric-Jo International Enterprise is now a label to look forward to in the coming years.

The company began its bag making venture with a borrowed secondhand, heavy-duty sewing machine and an initial capital of P500.00. The austere beginning made the husband-and-wife team work harder and better, shaking their imagination for original creative designs and innovative styles.

Powered up with S&T intervention such as training in synthetic and dyeing technology, MPEX consultancy, plant layout assistance, and equipment like binding machine and 2-in-1 zigzag/straight machine, the bag company grew big and stately like the buri.

With 100 percent increase in production output and 80 percent rise in gross sales, Ric-Jo Enterprises cut down production time and hastened delivery time. Expectedly, the company penetrated new markets. The pretty bags are now staple in SM's Kultura, a tourist and balikbayan crowd drawer. It also bears Tesoro's labels and are available in the more upscale Rustan's. Further, Ric-Jo's bags are now exported to the USA (California and Hawaii), Dubai, and Japan.

Full metal gear

Metalworks and fabrication have stirred the interest of Gavino Gesmundo since he was young. As he grew older, he proved to have honed his skills in metalworks. It was no surprise that he was able to work abroad as a trainee where he had the chance to show the Filipino's inherent ability in fabrication.

Back to the country, he opened a small machine shop that catered to automotive parts. But soon DOST's Industrial Technology Development Institute, impressed with his work, selected his company called G&G Enterprise Machine Shop as one of the accredited fabricators in manufacturing DOST-developed food equipment like wine/vinegar kit and ebulliometer, pulverizer, double jacketed kettle, hydraulic press, vacuum fryer, extractor and filling machines. Also, the company became an accredited service center of escalator and elevators of well-known elevator companies, further proof of its growing credibility in the industry.

Soon, through DOST-NCR, Gesmundo availed of SETUP support to upgrade production through the acquisition of precision lathe machine and technical assistance on equipment acquisition. Consequently, G&G's production output shot up by 100 percent and its sales by 60 percent. It stopped outsourcing and built on its own product quality and production. It also increased its range of machining services to include long series of threading and shafting and fabrication of plates with larger diameters.

Doubting Thomas no more

"At first, I was doubtful so I waited awhile before I actually availed," disclosed Erwin Estevez of Edgesmetal and Technical Services.

"When I did, I found out it really works!" so said Estevez regarding SETUP. The program, through DOST-NCR, enabled the company to acquire an NC shearing machine that cuts metal sheets used in fabrication. Estevez observed that the machine cuts metal sheets with more precision, lessening rejects. He then noted that his company's productivity improved significantly and the processing time was reduced by 60-70 percent. Its prior manual system produced 10 metal sheets in 2-3 days, but now the machine can process up to 50 metal sheets per day.

With generated savings of up to P50,000 per month and production hike of up to 150 percent, plus other benefits, Estevez put all his doubts into shreds. With clients such as Hyatt and Shangri-La Hotels, Estevez has become a full believer in science and technology and how these can boost up businesses.

Don't live by bread alone

"To whom much is given, much is required," Gloria Malibiran echoed a famous biblical verse. The owner of Yelly's Bakeshop was speaking about how companies, much blessed with profits and market, should give back something beneficial to the society.

Yelly's, through S&T interventions, was able to develop its own brand of squash

bread. “This will help children raise their intelligence quotient levels,” said Malibiran. “How? By helping them have clearer eyes to read.” She acknowledged DOST’s Food and Nutrition Research Institute for the technology in making squash bread.

With a 100 percent increase in production capacity, 33 percent more workers, and overall improvement in quality, efficiency, systems, processes, and more, Malibiran could not help thinking of how blessed her company is, and how she could share these blessings to the less fortunate. Then like manna from heaven, the idea fell on her bread basket one day: why not share the very thing that they have?

So now, Yelly’s actively partners with schools for regular feedings of-- what else?-- Yelly’s yummy and nutritious baked goods.

Indeed, Yelly’s knows that we humans do not live by bread alone. We also have to share our bread (and butter) to those who need it.

Helping small firms grow

“May mga malilit na ayokong bitawan (There are small enterprises that I don’t want to leave behind),” said DOST-NCR Director Teresita Fortuna.

One of these is Vivson Food Enterprise, whose product Josie’s Piaya, is one of the best, swears Dr. Fortuna. Piaya, originated from Negros Occidental, is a flat unleavened bread filled with muscovado sugar.

Vivson started small, more like a kitchen enterprise. Their sale area, according to Dr. Fortuna, is a little far from the main road, yet people are flocking to buy Josie’s Piaya.

So when the couple Luis and Josie Vivar sought DOST-NCR’s assistance through SETUP, Dr. Fortuna did not give it a second thought. The bakery may still be a start-up yet she saw its big potential.

Now Vivson is moving to a better location where its clients can have better access. That is, of course, after availing of SETUP that drastically cut its production time, improved the piaya’s texture and label, and boosted the demand for Josie’s Piaya, including its profits.

Science in business

For the past 10 years (2004-2014), the DOST-NCR, through SETUP, has assisted 7,463 enterprises, according to Regional Director Fortuna. The support given to these firms varies—some need high-technology equipment while others need only technical assistance.

“DOST-SETUP’s ultimate goal is to create employment,” said Dr. Fortuna.

Marrying S&T with business results in improved processes and production, leading to more income, more opportunities, and more employment. Enhanced facilities enable local fabricators to produce machines that cost a fraction compared with counterparts abroad.

“We can produce shearing machine for only P750,000,” said Molina of DCM Machines. Bought abroad, this machine costs a whopping P1.2 million.

The industry, realizing that locally produced machines are more affordable, will naturally turn to local fabricators. This mode will strengthen not only the fabricating sector but the industry as a whole. A more brisk industry will hire more people, leading to increased income and better purchasing power.

And that is what you get when business marries science.

SETUP makes Davao firm juice up on profits

By ALLAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

Photo: Allan Mauro V. Marfal, S&T Media Service, DOST-STII

Mrs. Alma L. Uy (in red blouse), owner of Tagum Golden Foods, elaborates to the media how the company has established environment-friendly procedures that clinched the company the prestigious E3 (Excellence in Ecology and Economy) Award during the DOST Mindanao Cluster Science and Technology Fair last November.

Photo: Allan Mauro V. Marfal

Photo: DOST-Region 11

In 2012, Tagum Golden Foods was able to acquire a hydraulic press machine *(in photo, right)* and mixing/filling machine after receiving assistance from Department of Science and Technology (DOST) in the form of P 222,400.00 under the Small Enterprise Technology Upgrading Program (SETUP).

Known for producing quality calamansi concentrate and pure calamansi ready-to-drink juice, Tagum Golden Foods reported that it increased its production and profits, and improved its product quality and food safety after the technology intervention. As such, the company's growth contributed to the socio-economic condition of Tagum City by providing employment to the jobless and steady market for calamansi growers.

According to Mrs. Alma L. Uy, owner of Tagum Golden Foods, they decided to re-avail the DOST-SETUP financial assistance early this year to improve their product packaging and labeling. As approved, the project received financial assistance amounting to P 582,710.00 last October.

Moreover, the company has established waste processing and minimization practices that clinched Tagum Golden Foods the prestigious E3 (Excellence in Ecology and Economy) Award by the Philippine Chamber of Commerce and Industry during the DOST Mindanao Cluster Science and Technology Fair last November.

The E3 Award is given to selected companies and enterprises that have demonstrated the most innovative and outstanding environmental performance in their pursuit of business sustainability and profit.

"In our entire business operation, we developed and implemented activities that promote sustainability," revealed Uy who has committed to churn out environment-friendly products and practices.

Further, she said that the company only uses sustainable local raw materials, and implements energy and water conservation procedures in the production area.

"We also manage and re-use waste by converting production generated wastes into income generating products," she revealed.

Green Harvest Food Products
Now ready to take your orders

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

Photos by Gerardo G. Palad, S&T Media Service, DOST-STII

Prior to 2012, Green Harvest Food Products in San Pablo City, Laguna was deluged with many orders for their products, namely pre-processed fresh fruits, vegetables, fruit preserves and local delicacies. Their products are packaged and blast frozen to preserve freshness.

This was actually great news, except that they had to decline some of the orders.

The reason: They did not have the production capacity to meet such strong demand.

Thus, in 2012, the company decided to avail assistance from the Department of Science and Technology (DOST) via SETUP or Small Enterprises Technology Upgrading Program. One of DOST's flagship programs, SETUP aims to help improve the productivity and competitiveness of the country's micro, small, and medium enterprises (MSMEs) via financial assistance, technology upgrade, and training.

Photo by Gerardo Palad, S&T Media Service, DOST-STII

(From left) DOST IV-A Regional Director Dr. Alexander R. Madrigal, Usec. for Regional Operations Dr. Carol M. Yorobe, and Hon. Angelica Jones B. Alarva, former actress and board member of Laguna's third district, during a press conference held in San Pablo City, Laguna after the plant visit which also coincided with the launching of the Laguna Provincial Science and Technology Center for micro, small and medium enterprises.

THE DOST interventions for Green Harvest, which totaled P 1.5M, mainly came in the form of provisions of additional equipment: steam jacketed kettle, steam boiler, vacuum sealer, industrial oven, and banana chipper.

This resulted in 20 to 25 percent increase in speed of production, 20 to 25 percent increase in production capacity, 10 to 15 percent decrease in spoilage, and decrease in operational cost.

"Ever since we started having the steam boiler, cooking time has become faster," reveals proprietor Abner L. Gozo. "With LPG gas, it took us 30 to 45 minutes to boil the water. But now, it only takes 10 to 15 minutes to boil."

And since the acquisition of a range of new equipment, the company can already meet the demand for its products. Instead of declining some orders, Green Harvest is now ready to take all orders. It is no surprise that sales of their products which they export to the US, Canada, Australia, New Zealand, UK, and the Middle East, have spiked remarkably.

The company has also seen a 20 to 25 percent increase in employment and raised the salary of its workers.

He reports that Green Harvest currently employs more than 20 workers and has a pool of on-call workers from nearby areas in cases when there are many orders. In this way, they are able to bring livelihood opportunities to others in their community. With the positive developments brought about by SETUP, Gozo and his colleagues are certainly happier that Green Harvest is generating more opportunities for their community.

Aside from these, Gozo gladly shares that his newfound contacts at the DOST regional office have widened his circle of friends. They invite him to various seminars and workshops for MSMEs from which he learned new skills and knowledge.

At present, the company's improved sales figures have prompted Gozo to explore new products for export and a plant expansion. Plus, Gozo and his team are eyeing another assistance package from DOST's SETUP, possibly after two years, to further their company's growth. (S&T Media Service)

Abner L. Gozo, proprietor of Green Harvest Food Products (5th from left) with DOST IV-A Regional Director Alexander R. Madrigal (3rd from right), Hon. Angelica Jones B. Alarva, board member of Laguna's third district (2nd from right) and Dr. Aristotle P. Carandang, chief of the Communication Resources and Production Division of DOST's Science and Technology Information Institute (3rd from left) during a plant visit in November 2014. (Photo by Gerardo G. Palad, S&T Media Service)

Montejo eyes *"storm chaser"* technologies to step up weather forecasting

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

YOU MAY have seen storm chasers only in the movies, but now in the Philippines, they are for real. The Department of Science and Technology (DOST) Chief himself revealed his plans to form a "storm chaser" team to complement DOST's existing weather monitoring systems during the Mindanao Cluster Science and Technology Fair at the SMX Convention Center in Lanang, Davao City.

"Last year, we started the storm chaser technologies or the mobile radar to be deployed near the areas where the typhoon will hit… for additional weather monitoring for incoming weather disturbances," explained Sec. Montejo.

The need for storm chasers surfaced because weather conditions are getting more adverse, as exemplified by Typhoon Pablo, a Category 5 super typhoon which generated winds of 175 mph (280 km/h).

Storm chasers are individuals pursuing any weather condition. They are armed with various weather tracking instruments from basic photographic equipment to satellite based tracking systems and live data feeds to vehicle mounted weather stations and hail guards. Storm chasers take on such perilous job in the pursuit of scientific studies.

In a separate interview, Sec. Montejo said that the Department has identified a group from the Philippine Atmospheric and Geophysical, Astronomical Services Administration (DOST-PAGASA) to form the core who will go to various areas prior to the expected typhoon landing.

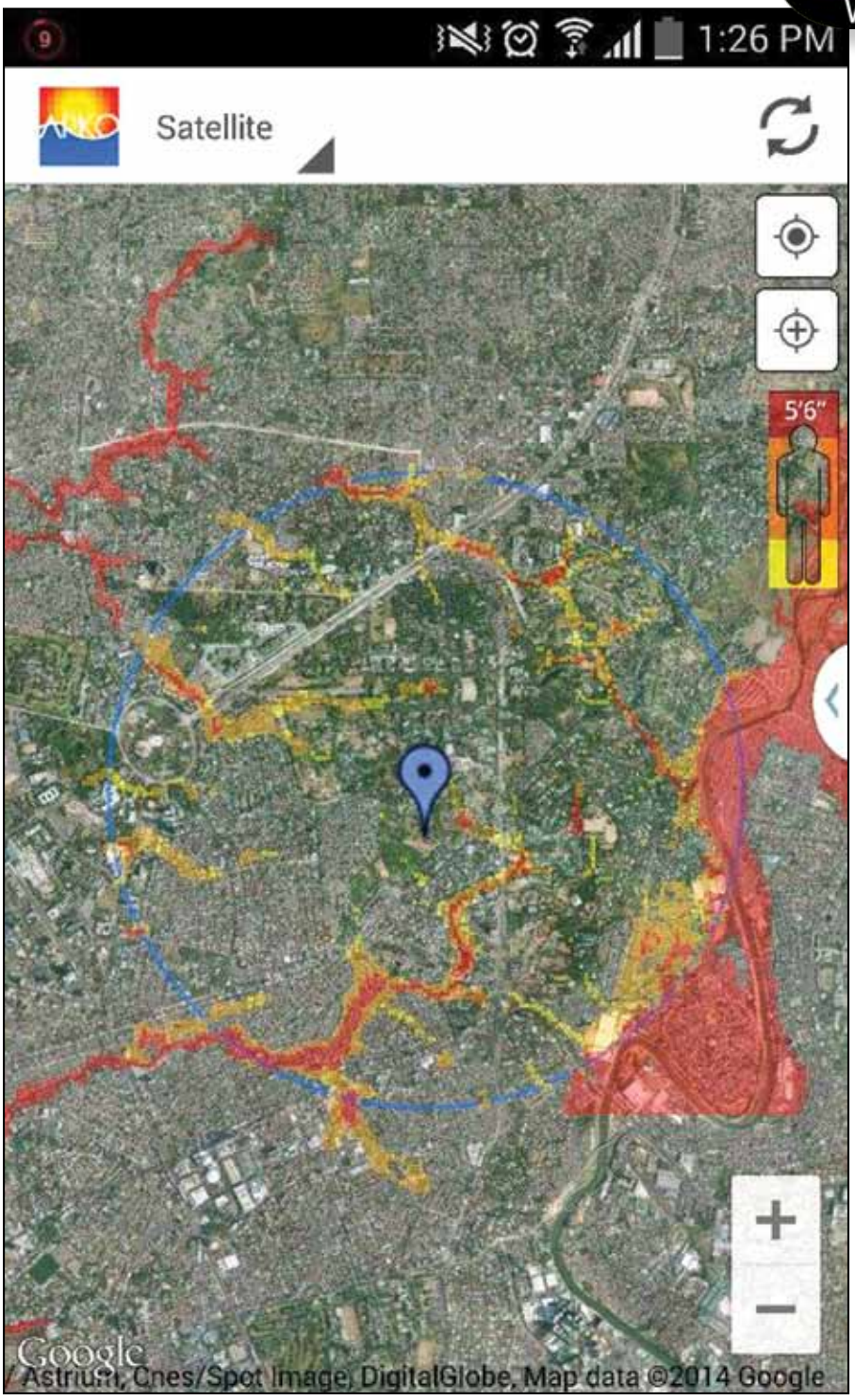
Also, the Secretary reiterated the use of high-performance supercomputers to complement the high-volume data for complex weather modeling.

DOST targets a six-hour lead-time weather forecast during typhoons to provide a more significant time for the local government to implement its evacuation plans.

He also informed media that the DOST-DREAM Program or the Disaster Risk and Exposure Assessment for Mitigation (DREAM) is currently working on the PHIL-LiDAR I, an expansion program to map the remaining 257 floodplain areas which are not covered in the 20 priority river basins. It will cover 22,000 square kilometers of flood prone areas within the country, an arduous task which will run from 2014 up to 2016.

Unlike the DREAM-LiDAR, PHIL-LiDAR I will involve 14 state universities and colleges (SUCs) in developing flood models for the Project NOAH website. These SUCs will complement the existing DREAM Team in developing Discharge Modeling which predicts possible flooding in specific areas. Also, the SUCs will help develop the real-time inundation.

Project NOAH mobile app wins international award



By RODOLFO P. DE GUZMAN
S&T Media Service, *DOST-STII*

THE DEPARTMENT of Science and Technology's (DOST) flagship program for disaster risk reduction and mitigation called Nationwide Operational Assessment of Hazards or Project NOAH once again showed its multi-faceted benefits when its mobile app ARKO recently grabbed an award conferred only to a select few by the World Summit Awards Mobile Content 2014 (WSA Mobile).

The ARKO mobile app was chosen as one of five winners under the e-Inclusion and Empowerment category, besting hundreds of participants from all over the world. This prestigious international award recognizes the best mobile content solutions in the world where it shows innovativeness, creativity and impact.

"ARKO serves as a vehicle to deliver important information regarding floods to ensure the safety of our communities-at-risk and this app proves one thing; it shows that Filipino talent is world class," said DOST Secretary Mario G. Montejo.

Overall, ARKO was one of 40 winners of WSA Mobile from a total of 456 projects submitted by 98 countries.

"The creation of the ARKO mobile app for Project NOAH is one clear example of the innovativeness and ingenuity of our Filipino scientists and software engineers who developed a very important tool in disaster preparedness by providing information about floods that will enable our communities to prepare ahead of time," reiterated Montejo.

Other winners alongside the Philippines' ARKO are the following: ColorADD from Portugal, Braille Board from Palestine, SnooCode of Ghana, and LIVOX of Brazil. (S&T Media Service)

Prof. Fotunato T. Dela Peña may have moved on to another chapter in his life, but we at the DOST will continue to draw inspiration from his selfless service.

Fortunato T. Dela Peña
Not your average "Boy next door"

By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

First and foremost, love what you do. This mantra guided former Undersecretary Fortunato T. Dela Peña, "Boy" to his close friends and colleagues, in the journey of his career and of life.

Prior to his stint at DOST, Dela Peña worked as operations engineer in a local oil company after earning a degree in Chemical Engineering at the University of the Philippines (UP) Diliman. However, after working there for two years he felt that there must be something more to his career.

"I felt I was only working to make profit for a company. Parang di siya masyadong akma sa aking personality (it seemd not in tune with my personality)," he revealed.

He resigned from his job and took his master's degree in Industrial Engineering also at UP Diliman where he landed as an instructor (and later on as professor) at UPD's engineering department. He found his true passion at last.

The DOST Challenge

Already decided to pursue a career in the academe, Prof. Dela Peña just kept his mind open when he was recommended to the National Science and Technology Authority or NSTA (now DOST) as officer-in-charge of the planning service in 1982.

"That was not part of my plan. I just accepted the challenge," he recalled.

He served NSTA until 1984 and afterwards went back to UP as head of the engineering department.

But that first stint in the country's science department would not be the last for Dela Peña. The second one was in 1989, when he was assigned to head Technology Application and Promotion Institute, an agency under DOST, until 1991. And for the third time around, in 2001, he was seconded to the DOST to serve as Undersecretary for Scientific and Technological Services.

In 2011, he gave up his professor item in UP and formally transferred to DOST and remained as undersecretary until his retirement last November 2014.

During his years in the DOST, he was mostly involved in science and technology planning, policy formulation, human resources development, as well as technology transfer activities.

In particular, he made significant contributions in the crafting of the National S&T Plan 2002-2020, which sets the direction and policy framework of S&T in the country, and the e-Governance framework and plans.

Likewise, he was instrumental in the establishment of PAGASA Philippine Interactive Climate Weather Information Network or PICWIN, an information system that provides direct public access to PAGASA frontline services through its website, and mobile phone services.

While teaching is something that he truly enjoys, FTP, as he is referred to at DOST, finds work in government more challenging.

"In the academe, you are confined to the subject matter you are teaching; your clientele are the students. In government service on the other hand you really have a big clientele—practically the entire Filipino people," he shared.

"There are many constraints [in government], but there are also many opportunities to serve. This situation forces you to become creative and innovative," he added.

Outstanding public servant, humble leader

His creativity and innovation became well known even outside DOST circles such that in 2005, he received back to back recognition for his exemplary service—the Dangal ng Bayan Award from the Civil Service Commission and the Outstanding Career Executive Officer Award from the Career Service Executive Board for his contributions as undersecretary of DOST.

Dela Peña is also a recipient of the following awards: 2013 National Research Council of the Philippines Achievement Award, Outstanding Alumnus of the University of the Philippines (Public Service), Most Distinguished Alumnus of University of the Philippines-College of Engineering, Outstanding Chemical Engineer Award, Outstanding Bulakeño/Dangal ng Lipi Award, and Gawad Chancellor as Most Outstanding Administrator (UP Diliman) among others.

Judging from this long list of recognitions, one cannot deny FTP's successful career. Yet, he finds more satisfaction in helping others realize their success.

"As a professor, I feel happy whenever my students become successful in their respective endeavors. The same is true in work. I want my subordinates to develop and maximize their full potential," he said.

He also held various posts within and outside DOST throughout his career including being interim executive director of Congressional Commission on Science & Technology and Engineering; OIC of the Science and Technology Information Institute; OIC of the Philippine Science High School System; president of the National Research Council of the Philippines (NRCP); OIC of the National Computer Center; vice-president for planning and operations in UP; director of UP's Institute of Small Scale Industries (ISSI), among others.

His stint in government service also led him to one realization. "Kapag nasa public service ka, kalimutan mo nang yayaman ka (If you're in public service, forget about getting rich)," Prof. Dela Peña bantered.

Because of his passion for work and sincerity to serve, it is not surprising that his former colleagues only have kind words for him.

"He has a long and broad perspective on things, and that's what we need for a planner," shared former UP President Dr. Emil Q. Javier on why he recruited Prof. Dela Peña to become his vice president for planning and operations in UP. He added: "He is a quiet worker who never upstages the boss."

NRCP Executive Director Dr. Carina G. Lao who is also dela Peña's province mate and fellow Dangal ng Lipi Awardee, summed up his life in her message: "Hard work, sincerity, simplicity, generosity and dedication are the secrets of a successful well lived life."

He is also a thoughtful and loving father and husband according to his wife, Mariquit. He tries to find time to spend with his family despite his busy schedule. "As much as possible pag may okasyon, gusto niya magkakasama kami (if there is an occasion, he wants us to be together)."

Busy life after retirement

One may expect Prof. Dela Peña relaxing now that he has retired from service. Instead he continues to pursue his interests and advocacies.

He volunteers his time and skills at the UP Engineering Research and Development Foundation, Inc. (UPERDFI), a private organization dedicated to support research and development activities in UP College of Engineering.

"We raise private money in support of engineering R&D particularly here in UP," he explained. He has been a member of the foundation since 1978 and is currently serving as its vice president.

Apart from UPERDFI, Prof. Dela Peña is also active in the Philippine Association for the Advancement of Science, a private organization which seeks to bring science and technology to the people through creating awareness, advocating new policies, and recognizing people of science.

Never giving up his true passion, Prof. Dela Peña spends his Saturdays teaching MS Industrial Engineering students in UP Diliman.

Recently after retirement, he got involved in the Development Academy of the Philippines, specifically in guiding students who are taking their masters in public management.

"It is not a lecturing job," he clarified. "I act as coordinator of re-entry projects that the students formulate and implement as part of their course requirements."

"I enjoy it [the work] because it gives me a chance to contribute, particularly in formulating re-entry projects. The challenge is in seeing to it that all students come up with good proposals and succeed in their implementation," he added.

His advocacies also transcend the science and technology community. He is the president of the Dangal ng Bulacan Foundation—an organization established by awardees of Dangal ng Lipi, an award conferred by the Provincial Government of Bulacan to outstanding Bulakenyos. The foundation provides scholarships to needy students in Bulacan and advocates for the environment, entrepreneurship, education, and eco-tourism.

Aside from science, Dela Peña is passionate about history as well. "I plan to do some work on local history (Bulacan). Hopefully, it will contribute toward creating awareness and pride in the history of our place."

As for the young researchers and scientists in the country, Prof. Dela Peña expressed his hope that "they find the balance in pursuing their passion to do work that will further advance the frontier in science vis-à-vis the application of science improving the lives of people, right here, right now".

Prof. Dela Peña may have moved on to another chapter in his life, but we at the DOST will continue to draw inspiration from his selfless service.

BEMEDALLED

Yet another award for Dr. Montoya for health and medical research initiatives

Beyond the the Hippocratic Oath he pledged as a medical doctor is a heart of a public servant that pledged to push innovations in health and medicine so that they become more available and accessible to the people.

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

Dr. Jaime C. Montoya, executive director of DOST's Philippine Council for Health Research and Development (DOST-PCHRD), clinched it again. To add to his growing collection of citations and awards, he received late last year the prestigious Career Executive Service award during the Annual CES Conference held at the Waterfront Cebu City Hotel.

The awards organizers cited Dr. Montoya's involvement in the creation of the ASEAN-Network for Drugs, Diagnostics, and Vaccines Innovation (ASEAN-NDI) as one of his major accomplishments. The ASEAN-NDI's unique approach is that it enables R&D experts, government administrators and scientists in the region to work together to discover and develop health technologies that will address health problems and push forward the health industry among the ASEAN member states. Said health technologies include diagnostic tools, strategies, drugs, traditional medicine, vaccines and functional tools.

In describing ASEAN-NDI's purpose, the network's official newsletter said that ASEAN-NDI is "meant to ensure that health technology development and the capacity of member states are appropriately maximized and managed according to regional health needs."

Dr. Montoya, in presenting the ASEAN-NDI initiatives, emphasized the "need to develop collaborative innovations on traditional medicine in addressing the escalating cost and poor access to modern medicine" which are current burdens in some ASEAN countries.

Further, Dr. Montoya also pushed for the establishment of the Regional Health Research Development Consortia which empowers the regions to create their own research programs and formulate their own research activities.

He also established the Philippine Health Research Ethics Board, the highest policy-making body for health research ethics in

Nation builders, globally competitive leaders. 2013 Gawad CES Awardees (with plaques) PCHRD-DOST Executive Director Jaime C. Montoya (center) , BFAR Regional Director Nestor D. Domenden and DOST Regional Director Engr. Rowen R. Gelonga pose with (from left) NUCESO President Mariano R. Alquiza, CSC Commissioner Robert S. Martinez, CESB Governing Board Members Charito R. Eligir, Antonio D. Kalaw Jr., CESB Presiding Chair Nieves L. Osorio, Undersecretary Michael Frederick L. Musngi (representing Executive Secretary Paquito N. Ochoa Jr.), CESB Governing Board Members Angelito Twaño and Evangeline C. Cruzado, and CESB Executive Director Maria Anthonette Velasco-Allones.

the country. The establishment of the ethics board guarantees the highest ethical practice in the conduct of health research in the country as the board sees to it that ethical guidelines on health research are constantly updated even as it oversees ethics review committees in human health research in the country.

Dr. Montoya is also a member of the World Health Organization Western Pacific Region Clinical Advisory Committee for Emerging Infections.

Dir. Montoya previously received the Presidential Lingkod Bayan Award from Pres. Benigno S. Aquino III.

The search for 2013's brightest public leaders is over as four Career Executive Service Officers (CESOs) were conferred the prestigious Gawad CES Award at the opening ceremony of the 13th Annual CES Conference at the Waterfront Cebu City Hotel and Casino, last November 12, 2014.

Recognized for their outstanding leadership and exemplary contributions to social development and nation-building, the presidential honorees were Manuel G. Co, administrator of the Parole and Probation Administrator; Nestor D. Domenden, regional director of the Bureau of Fisheries and Aquatic Resources; Rowen Gelonga, regional director of the Department of Science and Technology (DOST- Region VI); and Dr. Montoya.

Each of the winners received a Plaque of Recognition with the Presidential Seal and cash prize of P100,000.

The Gawad CES is a Presidential award that recognizes distinguished career executives who embody the CES tradition of competent leadership and faithful public service. Given annually since 2008, Gawad CES aims to encourage among Career Executive Service Officers (CESOs) and eligibles the CES culture of competent, faithful and dedicated public service.

Entrapped

"Mosquito killers" bait Presidential Awards

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

From intensive laboratory research work to come up with a safe and environment-friendly "mosquito killer" to packing the traps individual kits, this group has likewise committed itself in making sure that the traps get to the communities to wipe out the next generation of mosquitoes.

They work with paddles, black tumblers, and sachets. Their mission: kill the next generation of mosquitoes. And they got awarded for having their mission accomplished.

This team of researchers from the Department of Science and Technology – Industrial Technology Development Institute bagged the highly-respected Presidential Lingkod Bayan Award conferred during the 114th Philippine Civil Service Anniversary last month in Malacañang Palace, Manila.

Composed of team leader Dr. Nuna E. Almanzor, and her members Hermelina H. Bion, Annabelle V. Briones, Maricar B. Carandang, Alicia G. Garbo, and Josie L. Pondevida, the team was awarded for developing the Mosquito Ovicidal-Larvicidal(OL) trap system. According to the Civil Service Commission, the OL trap "significantly reduced mosquito densities and dengue virus transmission in various schools and communities nationwide."

Now commercially available, the OL trap is able to contribute to the government income. Further, the technology also attracted the interest of other countries that similarly have high incidence of dengue.

The OL trap was launched in 2011 to address the burgeoning problem of dengue infection. The DOST-ITDI OL trap research team designed the trap to detect, monitor, and control the population of the dengue-carrying Aedesaegypti mosquitoes. The trap works by attracting female mosquitoes to lay eggs on the paddle drenched with an organic solution. This solution kills the eggs and larvae, preventing mosquitoes from reaching adulthood.

The solution is potent against mosquitoes but safe for humans and animals, as it is composed of ingredients commonly used in food preparation, Dr Almanzor said.

According to the research team, the laboratory and field studies of the OL trap system has been published in the Acta Medica Philippina Volumes 46 and 47, a peer-reviewed scientific journal published by the DOST and UP Manila.

OL trap updates

In a nationwide mosquito-reduction project with the health and education departments as DOST's partners, the OL trap is used primarily for surveillance and in determining the mosquito population in a community. OL traps are installed in every classroom and monitored weekly for mosquito eggs and larvae. Selected faculty members, usually a science teacher or a nurse, do the monitoring and usually train students to assist them. Involving students in monitoring, according to monitors' reports, raises their awareness and sense of responsibility early on about the hazards of dengue and how to help prevent its spread.

For the project, the DOST, from June to December 2012, produced one million OL trap kits and distributed these to all public elementary and high schools nationwide.

Soon the OL trap went beyond attracting mosquitoes to kill their next generation. In a bigger scale, it became a monitoring tool to determine weekly mosquito density. Reports from public elementary and high schools nationwide where the OL traps are installed are reflected in real time in the Dengue Vector Surveillance website.

This site, launched in 2013, is designed to alert dengue coordinators, city health officers, and other health practitioners on the mosquito density and the possibility of dengue transmission in their respective areas. The website shows a map that users can browse to be informed on mosquito density in certain communities. It also shows corresponding action that the health department recommends, depending on the status of the alert.

Similarly, sending monitoring reports from the schools likewise became much easier. After their weekly check-up of the traps, school monitors send results via SMS to the dengue.ph website where results are displayed in real-time. This system, implemented nationwide, continues to be a work in progress until the components are perfected.

The health department, in support to the DOST's initiative on Aedes mosquito vector surveillance, funded the installation of OL traps in public elementary and high schools nationwide. To date, the DOST has deployed 837,897 OL traps and 10,001,896 sachet of pellets in 36,676 schools nationwide.

Based on 2014 DOH-issued dengue case results, there were 73,815 suspected dengue cases from January 1 to October 4, 2014, some 56 percent lower compared with the 168,893 dengue cases in the same period last year. The report also states that most of those infected are in the 5 to 14 years age group.

The DOST OL trap system is just one of several government interventions in fighting dengue especially among children.

Building coalitions is vital in pushing for productive agenda, and Engr. Rowen Gellonga has optimized his broad network to make S&T services work efficiently in Western Visayas.

Engr. Rowen R. Gelonga 2013 GAWAD CES Presidential awardee

By LIEZL MARIE LAMASAN
S&T Media Service, *DOST-VI*

As one evidence of the DOST's caliber, the Department never runs out of awardees in major performance recognitions in the government. With the 2013 Gawad Career Executive Service (CES) Presidential award alone, DOST did not only get one, but two, of this prestigious award.

One of the DOST awardees is DOST VI Regional Director Rowen Gelonga who was recognized for his exceptional strength in building coalitions as he optimized the delivery of science and technology services in the countryside through strategic partnerships with state universities and colleges.

He also promoted a science-based nutrition program that benefited thousands of children in Western Visayas as well as victims of past disasters. His other initiatives include efforts in enhancing the competitiveness of micro, small and medium enterprises through product packaging innovations. His initiatives in this aspect maximized the market potential of the local products in the region. In a period of 10 years (2003-2013), DOST-SETUP was able to assist 198 firms in the region, and these firms in turn are recognized for their huge impact on the local economy, availability of resources, and potential for local and global market access.

Director Gelonga likewise spearheaded the establishment of the Food Innovation Center (FIC) that will lead to the development of innovative and add-on products based on the major products produced in the regional level. At the trainer provider level, the food hub caters training programs for the food sector including lectures by local and foreign scientists. Other services offered are food innovation for packaging, testing, and research and development.

Seeing the need to localize DOST VI's Online Weather Monitoring System for Western Visayas, he pushed for the launching of the Bantay Panahon application. The said application provides real-time cumulative rainfall and water level data, including graphical representation of the readings.

For his early education, Director Gelonga went to the Philippine Normal University Laboratory Elementary School in Cadiz City, Negros Occidental. He then studied at the Philippine Science High School (PSHS) in Diliman, Quezon City in 1979-1982 and the Don Vicente F. Gustilo Memorial National High School, Cadiz City in 1982-1983 for his secondary education.

With his National Science and Technology Authority scholarship grant, he obtained his Bachelor of Science in Chemical Engineering degree from the University of San Agustin in Iloilo City in 1988. He started his profession as a grantee of the Career Incentives Program which was an offshoot of the DOST Anti-Brain Drain Program designed to provide S&T career opportunities for selected DOST-scholar graduates. Gelonga earned his Master's Degree in Business Administration, Major in Management from the International Academy of Management and Economics in Makati City in 2002.

He is married to Ma. Lina Fuerte Baticados, a food technologist with whom he has two children: Aya Isabel B. Gelonga and Gabriel Lorenzo B. Gelonga. (With reports from DOST-SEI)

As an employee, she is always on the lookout to find ways to improve laboratory services. Her efforts were not in vain, as DOST-X's Standards and Testing Laboratory turned into a research and training hub in the region. For this, the DOST takes pride of having Engr. Romela Ratilla in its fold.

Ratilla of DOST-X is Dangal ng Bayan awardee

By FRAMELIA V. ANONAS
S&T Media Service, *DOST-STII*

Engr. Romela N. Ratilla, a Senior Science Research Specialist of the Department of Science and Technology Regional Office X was awarded Dangal ng Bayan by the Civil Service Commission (CSC). According to CSC, Ratilla was recognized for her dedication to advance S&T through strengthening the DOST's laboratories in Northern Mindanao. One of the most notable achievements of Ratilla is spearheading the creation and accreditation of a Regional Standards and Testing Laboratories (RSTL) in Region X. The RSTL eventually became a research and training hub in the region. The various testing services of the RSTL greatly assisted food processors and entrepreneurs in product quality assurance and development, helping them increase their income. Ratilla likewise pushed for the upgrading of a laboratory quality systems and infrastructure, and the institutionalization of a monitoring and evaluation scheme as a way of reengineering systems, reducing corruption, and making services highly efficient.

In 2013, Ratilla was named Katangi-tanging Kawani (Model Employee) by the Civil Service Commission Regional Office X during the culmination of the 113th Philippine Civil Service Anniversary celebration.

Engr. Ratilla was awarded for her outstanding performance at the DOST-X which contributed to the effective and efficient delivery of the agency's programs and services to the public. Her prompt and judicious action on her work assignments contributed greatly to the high performance rating of the office.

A chemical engineer by profession, Engr. Ratilla has been with the DOST-X for the past 23 years. She also holds a degree in Master of Science in Chemistry and a Doctorate in Public Administration. She is currently the Quality Manager of the DOST-X's Regional Standards and Testing Laboratories, which is accredited under the Philippine National Standards ISO 17025:2005 for testing and calibration laboratories and the Quality Management Representative for the DOST-Xs ISO 9001:2008 certification.

DOST Wellness Garden

The Department of Science and Technology Complex is already quite green but its latest green addition is a welcome respite, one that can heal the soul of everyone who jogs or strolls. An oasis within an oasis in the middle of a concrete web of highways, the DOST Wellness Garden is conceived to support the government's Greening Program. It also features the ten medicinal plants promoted by DOST, so it does not only heal the soul but also treats the physical body. The garden is now becoming popular not only as a place for rest and small talk but also as a venue for pre-nuptial and other pictorials, groupies, and selfies. Thanks to the joint efforts of DOST's National Capital Region Office, Philippine Council for Health Research and Development, and the Administrative and Legal Services Office. Everyone is welcome here.

Photos by: Henry A. de Leon, S&T Media Service

DOST-Region 1 Director Edgardo Q. Ganal
Engineering countryside development via S&T

By VERONICA A. HERNANDEZ
Greenfields Magazine

He believes that S&T are the main drivers to the country's growth and development. Now the head of DOST-I, Engr. Edgardo Q. Ganal has more than enough reasons to stay in the countryside rather than to slug it out in imperial Manila.

Delivering growth to the countryside is one of the greatest challenges the government faces, especially in regions that are far away from the main growth centers, particularly Metro Manila.

Up north in Luzon, the Ilocos Region presents opportunities for tremendous growth because it is bounded by the sea and has many untapped resources. And the Department of Science and Technology (DOST) is one of the agencies actively involved in developing the Ilocos region or Region 1, with Armando Q. Ganal, PhD leading the charge for the agency in the region.

Being the full-fledged director of the DOST-Region 1 office since October 2014, Ganal boasts of an extensive professional and educational background to help develop the Ilocos region through scientific interventions as well as research and development (R&D).

Although it was in October 2014 that Ganal was formally appointed to head the DOST-Region 1, he was the officer-in-charge of the regional office since January 2014.

Prior to this appointment as OIC of DOST-Region 1, Ganal was provincial chief science research specialist/assistant regional director for technical operations from December 2007 to January 2014. As ARD for Technical Operations, he led in the implementation of the Small Enterprise Technology Upgrading Program and the Community Empowerment thru Science and Technology. He also represented the regional office in the various development councils/committees and technical working groups in the region.

Ganal started his government service career with the Philippine Tobacco Research and Training Center in Batac in May 1984. Seven years later in November 1991, he joined the DOST-Region 1 office as science research specialist II and then was later designated as provincial coordinator/officer. After a year, he was promoted to senior SRS and designated as provincial S&T director.

During his stint as PSTD, Ganal steered the office in implementing S&T programs, projects and activities on technology transfer and commercialization. He actively worked for the establishment of the Batac Science Community, which later became the Ilocos Norte Science Community. He also pursued the construction of the Provincial S&T Center after acquiring a much bigger lot space at the Government Center donated by the Municipal Government of Batac.

"I always believed in serving the people in the province or region where I was born and grew up. And I believe in the vast potential of the Ilocos region."

When it comes to educational background, Ganal is a product of the school system of Region 1 being a graduate of the Mariano Marcos State University in Batac, Ilocos Norte with a Bachelor of Science degree in Agricultural Engineering. His field of study was soil and water management.

In 1990, Ganal completed his masteral studies in Agricultural Engineering at the Central Luzon State University in Muñoz, Nueva Ecija, where he was a Dean's Lister for one semester. He specialized in irrigation and drainage engineering, and his cognate field was rural development.

Twenty years after he obtained his master's degree, Ganal completed his Doctorate in Philosophy at MMSU.

In September 1985, he passed the Professional Agricultural Engineer's Licensure Examination under the Professional Regulation Commission. Likewise in August 1990, he passed the Career Service Examination administered by the Civil Service Commission in Region 1, with an impressive 90.54 percent rating.

While Ganal passed the Career Service Examination with an impressive rating, he chose to stay and work in the Ilocos region, particularly with the DOST office.

"I always believed in serving the people in the province or region where I was born and grew up. And I believe in the vast potential of the Ilocos region," he said.

From 1986, Ganal also went abroad for scholarships, travel grants and fellowships in Japan, Australia, Thailand, the Netherlands and Taiwan. He has been to Japan twice.

He was also a member of the following organizations: Philippine Society of Agricultural Engineers (1985 to present); Communicators for Agricultural and Rural Development (1986 to 1987); Kapisanan ng mga Brodkaster sa Pilipinas (1986 to 1988); Annak ti Batac Jaycees, Inc. (1990 to 1992); Institute for Development through Engineering Agriculture and Sciences, Inc. (1993 to 1997); and Association of Regional Executives – Region 1 (2010 to present).

He is also concurrent director of the Cooperative Bank of Ilocos Norte (2006 to present); and director of the Namnama ti Abagatan ti Carayan, Inc. (2009 to present).

Given his extensive experience and network in the region, Ganal is apt for the job needed to head DOST-Region 1, and can help propel inclusive growth through science and technology, as well as R&D.

"It is high time the rural areas benefit from S&T and R&D to foster economic growth that is exclusive and far reaching, and DOST-Region 1 is at the forefront of that when it comes to the Ilocos region," Ganal said.

"But I will also want to point out that the cadre of dedicated workers in DOST-Region 1 should be given recognition for being visionary and hardworking, and without them the Ilocos region would not have been on the road to progress," he added.

Dr. Ramon B. Gustilo

Surgeon, Researcher, Innovator, Educator, Philanthropist

"While drenched and dirtied, I promised myself then: I will never be this poor! I will not spend my life watching stupid carabaos in this miserable weather."

He fulfilled his promise and the rest was history.

Dr. Ramon B. Gustilo remained true to his words and kept his promise of becoming victorious. The former little vaquero, or livestock herder, is now a well-known orthopaedic surgeon locally and internationally because of his exceptional intelligence and aptitude. He may be successful in academic medicine, orthopaedic surgery, research and orthopaedic devices design, yet he remains humble.

He is known in the Philippines as the "father of orthopaedics" for good reasons. He has catalyzed several significant and notable innovations in orthopedics, holds 18 US patents, and played a key role in building and strengthening connections within the orthopaedic global community. Indeed, Dr. Gustilo makes sure that he does not only excel in his profession, but that he puts into action everything that he learned, shares it with other aspiring orthopaedic surgeons and helps people through his expertise.

His orthopaedic journey started when he received his Bachelor's Degree in the field of Pre-Medicine from the University of the Philippines (UP) in 1953. He continued with medical school in UP and graduated in 1957, passed his Board examination, and immediately went to the U.S. for further training.

Upon learning of the opportunities in Minnesota apropos to orthopaedics, he applied for and was accepted into the Orthopaedic Residency program of the University of Minnesota. He excelled during this five-year program, during which time he met the two loves of his life— orthopaedic surgery and Gloria Pearl Lorraine Carlson, an American nurse of Swedish descent who later became his wife. They started their family of five wonderful children, and later had 15 grandchildren and two great grandchildren. He also started to initiate, fund, and successfully complete research projects on bone blood flow, which earned him his Master's Degree in Orthopaedic Surgery.

Once Dr. Gustilo entered private practice, his leadership, surgical skills, academic curiosity, compassionate bedside manner, honesty, and incredible energy and drive, shone. He demonstrated great leadership at Methodist Hospital and later at Hennepin County Medical Center where he became the first department head of Orthopaedic Surgery, a position he held for 25 years. During this time, Dr. Gustilo also became a full professor at the University of Minnesota and a member of the top leadership of the university's Orthopaedic Surgery Department.

It was his painstaking work on classifying open fractures and recommending treatment based on classification which earned for him international renown. This classification system eventually became known as the Gustilo Classification of Open Fractures and has become the standard classification of open bone fractures. Orthopaedic residents throughout the world are required to study this classification system as part of their training.

Further, his leadership in the care of patients with orthopaedic injuries resulted in his establishment of the Orthopaedic Trauma Hospital Association and the Orthopaedic Trauma Association in the US.

More innovations came along. He designed and commercialized one of the earliest total knee replacements (Gustilo knee). He also designed the first hip replacement approved by the US FDA for use without bone cement (BIAS hip, Zimmer, Inc.), and one of the most successful of the current generation of total knee replacements (Genesis I and Genesis II, Smith & Nephew). He also has designed surgical instrumentation, and fracture fixation devices and implants.

Likewise, he established a rare expertise in musculoskeletal infections and a musculoskeletal sepsis research unit.

Hundreds of orthopaedic residents and surgeons were fortunate enough to have been trained by Dr. Gustilo himself. To further spread his knowledge, he published over 100 articles in various journals, 31 book chapters, and four orthopaedic textbooks. He had been invited to give over 140 lectures internationally, and has been a visiting professor in 63 institutions abroad.

Despite all his triumphs, Dr. Gustilo never forgot where he came from, always putting time and effort to give back to the Philippines. He spends more than six months each year in the Philippines, traveling to different provinces - performing surgery, giving lectures, and training young orthopaedic surgeons.

He established the Philippine Orthopaedic Institute in Makati in 1987, the first orthopaedic group practice in the Philippines. He is also the founder of the Cebu Orthopaedic Institute and the Panay Orthopaedic Supplies, Inc.

In 1990 he established Orthopaedic International, Inc. (OII), a manufacturing and research company in Cabuyao, Laguna to provide affordable implants for Filipinos and to develop better ways of treating bone fractures and diseases. Together with Dr. Gustilo and leading Filipino orthopaedic surgeons, OII's research and development team in Laguna has developed innovative implant and instrumentation systems that have been patented in the Philippines, USA, and other countries. One notable product that Dr. Gustilo and his team developed is the Distalock Drill for intramedullary nailing procedures which was awarded the 2011 Medical Design Excellence Award by Medical Device and Diagnostic Industry, a leading medical device industry magazine.

Dr. Gustilo has also ventured into various business interests in the country, establishing companies which employ scores of local workers as a way of giving back to his motherland. These are Scrypsis, Inc., a medical transcription company which he put up in 2006 and Cerquit Solutions, Inc., a software development company he opened in 2008 .

He has also given back to Manpala in Negros Occidental, the town in which he grew up. In particular, he spearheaded the construction of the St. Roch Catholic Church in 2005 and the Gustilo Town Center, Northland Resort Hotel, and Villa Verde Subdivision in 2007. Currently he is building the Gustilo Clinic and Ambulatory Surgery Center and the Gustilo Entertainment Center in Manapla.

Being a philanthropist, he also shares his financial success with the needy through donations to various charitable institutions, foundations, scholarships, and medical missions.

At the same time, another breakthrough research project is keeping him busy nowadays. He is currently the proponent of a research project to develop and manufacture a more affordable knee replacement system based on the Asian knee anatomy - the first knee implant to be designed in the ASEAN Region. Called the Axis Knee System, this project is partly funded by the Department of Science and Technology - Philippine Council for Health Research and Development.

The new knee system also features patent-pending instrumentation and a surgical technique that will allow general orthopaedic surgeons to perform primary total knee replacement without undergoing a one-year fellowship program.

Indeed, Dr. Gustilo is more than thankful to the Lord for helping him keep his promise 70 years ago that he would not be poor. To narrate his memoirs, he even wrote a book entitled "I Will Not Be Poor Again."

He said, "I am fortunate to have enough material things and success in my life that, in a small way, I can repay the land that gave me my education and my basic moral values." *(With reports from Romelie Janelle Maranan, S&T Media Service, DOST-STII; Engr. Jude Sasing, President, Orthopaedic International Inc; Dr. Joan Bechtold, Director, Orthopaedic Biomechanics Laboratory and http://www.archives.visayandailystar.com/2011/April/04/topstory6.htm)*

Dr. Edgardo E. Tulin: Fast and curious

By MARIA LUISA S. LUMIOAN
S&T Media Servide, *DOST-STII*

He sees medicinal plants not only as a source of drugs but also a source of income for the farmers. Meet Dr. Edgardo E. Tulin, one of the champions of biotechnology in the country.

When Abaca Bunchy Top Virus (ABTV), a disease that causes severe stunting of abaca crops,devastated the Visayas region, Dr. Edgardo E. Tulin was one of the scientists who worked hard and fast to come up with a solution.

Determined to help the farmers whose lives depend on abaca, Dr. Tulin, a native of Albuera, Leyte, led a research to create a diagnostic kit that can determine the presence of ABTV as early as possible to prevent the spread of the disease.

"ABTV causes severe stunting resulting to significantly reduced fiber yields," he explained.

One effective way of preventing ABTV infestation is to use healthy planting materials in the field. But sometimes, infected plants may not show symptoms in the early stage, thus farmers use them thinking they are good. The dipstick diagnostic kit, which has already been successfully tested in the field, will prevent this from happening.

Dr. Tulin and his colleagues are in the process of optimizing the kit, particularly its storability and applicability under room conditions. "It is not yet available to farmers for commercial use as of now, but we are moving into that direction," he revealed. He is working to make the commercial version of the kit affordable to the farmers.

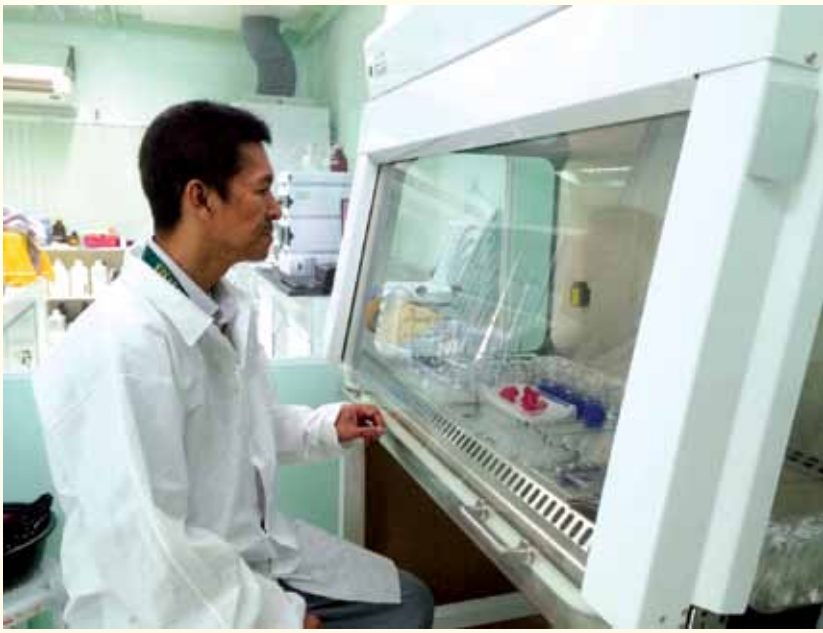
Accomplished scholar and researcher

As a child, Dr. Tulin had always been curious about the world around him. This trait nurtured his interest in science. He had wanted to take up chemical engineering in college, but the course was not offered at the Visayas State College of Agriculture (now Visayas State University or VSU) which awarded him a scholarship.

"To take advantage of the free education, I took the course [of] agricultural chemistry knowing that it is near the field that I wanted to pursue," he recalled.

Eventually, he realized his dream of becoming a chemical engineer with an added qualification: a degree in Biochemical Engineering from the University College London -- one of the best schools in England.

Dr. Tulin furthered developed his expertise in Japan, earning his Ph.D. in Bioreaction Engineering from Nagoya University and his post-doctorate in Protein Chemistry from Iwate University.



From 1995 to 2002, he worked as a research scientist at the Chugai Research Institute for Molecular Medicine, Inc. in Tsukuba, Japan and at the Institute of Medical Science, University of Tokyo where he led the Cytokine Discovery Program of the institute. He also produced patent on human growth factor and deposited novel genes in the National Center for Biotechnology Information database in the US.

After seven years of working in a foreign country, Dr. Tulin could not resist the call of home. In 2002, he came back to the country to serve again at VSU, where he used to work as an associate professor, and moved up the academic ladder to become a university professor. Currently, he holds the positions of Vice President for Instruction and Vice President for Resource Generation and Planning at the university.

Apart from his research in ABTV, he also serves as project leader and principal investigator of the Tuklas Lunas Development Center at VSU—a project in partnership with the Philippine Council for Health Research and Development of the Department of Science and Technology.

The project aims to discover potential drugs from indigenous plants, for diabetes and hypertension in particular. As project leader, Dr. Tulin directly handles and supervises researches on molecules or compounds from indigenous medicinal plants that act as insulin mimetics and enzyme inhibitors.

In his research, he not only thinks of the medical benefits of their discoveries. "Pwedeng pakinabangan ng mga farmer (Farmers who produce the crops will also benefit)," he said.

However, he revealed that their efforts suffered setbacks because of the onslaught of Typhoon Yolanda. "For three months we did not have electricity, we could not use the freezer," he related. Now, they are back on track with their research activities.

Outstanding mentor and public servant

Despite his busy schedule as a school administrator and researcher, Dr. Tulin still teaches biotechnology and biochemistry.

In 2009, he was recognized as the first "Best Mentor in Health Research" by the Philippine National Health Research System for actively engaging in health research as a mentor-adviser.

"Perhaps because they know what I am doing in the university, they [students] ask me to become their adviser", he said. The most important thing he wants from his students is to be creative in their way of dealing with their research interests.

He was also a recipient of the Presidential Lingkod Bayan 2014, an award given by the Civil Service Commission to a person or a group with exceptional or extraordinary contributions with impact on public interest and national security. He was cited for his "innovativeness and commitment to service" and his "pioneering studies in biomedical research and molecular diagnostics."

In between his duties as professor, researcher, and school administrator, he tries to find time to go on outings with his family during weekends and also takes care of his aging mother who lives with them.

"I used to play tennis before when I was younger, but now I have concentrated my weekends on the renovation of our house in Ormoc which was damaged by typhoon Yolanda," he added.

With many enthusiastic scientists in the field, Dr. Tulin is optimistic about the state of biotechnology in the Philippines.

"We just have to follow some rules, and there is some opposition from some sectors. But, we are moving forward", he declared.

With his fast and curious mindset, we are assured that biotechnology in the Philippines – aided by scientists in the same mold as Dr. Tulin – is indeed moving forward.... and fast.

The scientist who spent over 30 years loving his second love

By GERALDINE B. DUCUSIN
S&T Media Service, *DOST-STII*

Dr. Ramiro P. Escobin, initially enamored with the elements and the periodic table, was thrust into the world of woods. And he embraced it. With so much gusto. Now for 30 years, his love for the forest continues to be verdant.

First love might be overrated. In an interview with Dr. Ramiro P. Escobin, he shares how he came to love the profession which was not actually his first love.

"I never planned nor dreamt of becoming a scientist. Gusto ko lang yung simpleng buhay. Magtinda, mag-driver. (I just wanted a simple life. To sell, to be a driver.)," Dr. Escobin says when asked what motivated him to become a scientist.

Focus, hard work and determination to excel became the driving force of this man who had to learn to love a career which was only his second choice, not his first love.

"Ang gusto ko ay maging isang, sana lang ha, maging isang chemical engineer. But, hindi ako tinanggap ng UP sa chemistry dahil daw ung grade ko ay mababa daw sa chemistry (What I wanted was...hopefully...to be a chemical engineer. But I was not accepted at UP because they said I had low grade in Chemistry)."

But, by some turn of event, one passer did not enrol in the course. He was informed that he can already enrol in the BS Chemistry program but he found himself enrolling in Forestry instead.

"So pinag-igi ko na lang ang pag-aaral noon at naging paborito ko na. Dahil kung hindi, hindi ako mag-e-excel (So I just made good in my studies and then it became my favorite, or else I will not excel.)"

In 1978, he obtained his BS in Forestry. He furthered his studies and earned his MS in Botany in 1988 and his PhD in Botany in 1997, all from the University of the Philippines Los Baños.

In 2001, he was conferred the title Scientist 1 by the Science Career System. Among his several remarkable contributions to the field was the implementation of Executive Order 23 which enables the government to run after illegal loggers and ship owners who transport illegal lumber.

This is in addition to his many published works. His latest is the "Revised Wood Identification Handbook for Philippine Timbers" - a much-awaited resource material for private and government-based institutions and the academe.

In his 30-year career at the Forest Products Research and Development Institute (FPRDI), he produced valuable references and a collection of the country's wood resources which may be viewed at the FPRDI Herbarium and Xylarium. This collection, the first of its kind in the country, showcases various wood products not only from the Philippines, but also from abroad.

Indeed, the boy who once dreamt of becoming a chemical engineer but ended up in Forestry, has learned something valuable: That one can possibly learn to love and even excel in an area which isn't really one's first love.

"Gusto ko na makita ng mga bata na ang buhay ng isang scientist ay hindi madali. Pinagdaanan nya ay hindi madali. Mahirap. Akala lang kasi ng iba, easy easy kami. Pinaghihirapan po ang lahat ng bagay bago

makuha. Walang free. Lahat may bayad. (I want children to know that the life of a scientist is not easy. What he goes through is not easy. It's hard. They just think we're having an easy time. To acquire or achieve something, you should work for it, earn it. Nothing's free. There's a price to pay for everything)."

Overcoming poverty

Dr. Escobin hails from Los Baños, Laguna. He belongs to that generation when it was common for Filipino families to have many children. He's proud of the fact that although they were poor, all 10 of them in the family finished college. He believes that wherever his parents might be now, they are happy for what all of them have accomplished.

In a world which places so much emphasis on being positive, Dr. Escobin is among the braver ones who accept the notion that "Life is a suffering."

He says, "This is suffering, from the day you are born until the day you die. You would suffer."

He hopes, though, that the kids of today will not be discouraged. Rather, he wants young people to realize that education is what will lift them out of poverty. For him, it does not matter whether the child comes from a poor or rich family, as long as the parents are there to provide support and guidance.

He believes that God provides opportunities to everyone, like in his case. He didn't plan everything that happened in his life, including his becoming a scientist. He merely obeyed his parents to go to school where he thought he was just playing.

The jeepney driver-scientist

When he finished his B.S. in Forestry in 1978, he worked as a timber management supervisor at a timber company based in Mindanao for about two years. It was there that he met his wife, a nurse.

He looks back fondly at his short stint in that timber company.

"Maganda yung experience na yun, nakatulong din yun dito sa aking present career. Malaking tulong.(It was a great experience and it contributed to my present career. It was a big help)."
The company closed shop however and he returned to Manila-- a jobless young husband and father to a newborn. To be able to buy milk for his baby, he worked as a driver of a passenger jeepney.

The father who's also a mother

His wife worked for a number of years in the Middle East. This gave him the opportunity to be both father and mother to their two children. "Kaya natuto ako ng gawaing bahay. Favorite ko yung mamalengke (That's how I learned how to do household chores. Going to the market was my favorite)," he shares with a smile, recalling those days with her girls growing up.

In fact, his fondness for children comes from looking after his own kids when they were really young until they got married and had children of their own. Now, he enjoys taking good care of his grandchildren which he says is another passion aside from his work as a forester.

Words to the young

"Do you think the kids will be inspired by my story?" Dr. Escobin asks.

The author leaves it to the readers to decide. There may be no novelty from the rags to riches story of this man, but one thing that sets him apart from other success stories is this:

The young Ramiro decided at a young age to stick with what he's got (Forestry) and really persevered so he'll be highly competent in his field. He willed himself to learn to love what he originally did not love. Readers don't come by such stories everyday.

His life has been a series of endurance tests. He believes that enduring and suffering are some of the traits that one has to have. For him, these are values which are gradually being lost among today's people.

What Dr. Escobin wants to say to the young Filipinos is, "Wag kayong ma-discourage ng kahirapan. Hindi yun hadlang. Remember, hindi hadlang ang kahirapan para ikaw ay umangat sa buhay. Edukasyon ang kailangan natin at yung tamang pag gabay ng magulang. Kailangan mahasa. And eventually, kung ang ating lahat ng mamamayan ay magiging productive, ay uunlad itong bayan natin. So it starts from the family. Very basic yan (Don't let poverty discourage you. Remember, poverty is not an obstacle to improving your status in life. What we need is education and the right guidance from our parents. We have to be trained. And eventually, if all our citizens will be productive, our country will progress. So it starts from the family. That's very basic)."

On the way out of the museum which houses FPRDI's wood collection which he patiently and carefully studied, labelled and preserved for young people to study, he gave these parting words, "I want the kids to remember: They have to love their work."

NAST Academician bats for more genetics counsellors in hospitals

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

ACADEMICIAN CARMENCITA D. Padilla said there should be an item for a genetics counsellor in the plantilla of secondary and tertiary hospitals in the country to help address the gaps in the treatment and services for rare disease patients in the Philippines.

The UP Manila College of Medicine professor made this statement during a Roundtable Discussion on Rare Diseases organized by the Department of Science and Technology's National Academy of Science and Technology (DOST-NAST) held at Traders Hotel (now Hotel Jen Manila). Padilla is a DOST-NAST Academician.

According to Padilla, there are only nine geneticists in the country, with one each in Visayas and Mindanao. While she acknowledges the need to increase the number of geneticists, Padilla believes that there is not much demand for geneticists. What the country needs are more genetic counsellors, she said.

"We don't have enough geneticists and we don't need a geneticist in every hospital. At least, a genetics counsellor can take care of counselling the patient and his family. The counsellor is not limited to genetic conditions alone," she stated.

Most rare diseases are genetic and involve functional and physical birth defects. According to Dr. Mary Anne D. Chiong of UP Manila's National Institutes of Health, there is no existing effective cure for these disorders.

Among the 7,000 identified rare diseases are Maple Syrup Urine Disease --in which a patient's urine smells like maple syrup, mucopolysaccharidosis, Gaucher Disease, galactosemia, Phenylketonuria, Hunter Syndrome, and Pompe Disease.

CONTINUED ON PAGE48

Academician and UP Manila College of Medicine Professor Dr. Carmencita D. Padilla during her talk at the Roundtable Discussion on Rare Diseases organized by the Department of Science and Technology's National Academy of Science and Technology (DOST-NAST) held at Traders Hotel last year. Dr. Padilla stated her plan of including a genetics counsellor in the plantilla of secondary and tertiary hospitals in the country to better address the challenges faced by patients of rare diseases like Juan Benedicto Magdaraog (see photo on page 48).

Ebola quarantine should be at exit point, doctors say

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

PEOPLE COMING from Ebola-affected countries should be quarantined at the exit point, not at the entry point. So said Academician Jaime C. Montoya, chair of the health sciences division of the National Academy of Science and Technology (NAST), who emphasized that quarantine should be done right there in Ebola-affected countries, before the people board planes and ships to bring them out of the country. Montoya is a medical doctor who specializes in infectious diseases and a member of the World Health Organization Western Pacific Region Clinical Advisory Committee for Emerging Infections.

"Those countries – like Liberia and Sierra Leone – they should be the ones doing the quarantine — for 21 days before they allow people to leave the country. That is the ideal," explained Montoya, concurrent executive director of the Department of Science and Technology - Philippine Council for Health Research and Development.

Dr. Montoya stressed his point during a NAST-organized round table discussion on "Coping with Emerging Infectious Diseases" held at the Traders Hotel Manila (now Hotel Jen Manila). NAST is DOST's advisory body composed of Academicians in the local science community.

Earlier, Dr. Mediadora C. Saniel, president of the University of the Philippines Medical Foundation, Inc. gave a similar statement during her talk on "Prevention and Control of Emerging Infections" during the event. According to her, a recent study suggests that exit screening of travellers is the most effective way to assess the health of travellers who are at risk.

President Benigno S. Aquino III has ordered Overseas Filipino Workers (OFWs) in Liberia, Guinea, and Sierra Leone including 145 Filipino peacekeepers in Liberia, to come back to the Philippines in the face of the Ebola infestation in Africa which has also resulted in a few cases in the United States and Spain.

"The problem is, those countries have their own laws and regulations," Montoya noted. "So we have no option but do the quarantine here."

According to Dr. Saniel, a facility has been readied for the quarantine of these returning OFWs. However, she emphasized the need to refocus health initiatives from detection and response efforts to prevention measures.

Among the preventive measures against infectious diseases are regular handwashing with soap and water, avoidance of stress which attacks the immune system, and a healthy diet composed of low-fat, low-salt, and low-sugar foods. Such diet helps strengthen the immune system, said Academician Veronica F. Chan of NAST's biological sciences division and a pioneer in virology and immunology in the Philippines.

Montoya also cautioned, "Do not touch your eyes, mouth, and nose until you've washed your hands. The skin lining in those parts are very thin so the virus can easily penetrate."

The current global Ebola outbreak has resulted in 4,951 reported deaths as of press time and six affected countries namely, Guinea, Liberia, Sierra Leone, Mali, Spain and US. Intense transmission of the virus continues in Guinea, Liberia, and Sierra Leone. The virus enters the host via skin breaks or abrasion, and direct contact with infected patients as well as cadavers. A person may also be infected through exposure to objects contaminated with infected secretions like needles. There is currently a lack of vaccine for the Ebola virus which has an incubation period of 2-21 days.

Montoya likewise noted the volume of OFWs who will come home this Christmas. Thus, he advises Filipinos to stay home, rest, limit contact, and consult a doctor if they have fever and are not feeling well.

DOST-NAST ACADEMICIAN BATS....FROM PAGE 46

These illnesses are chronic, progressive, degenerative, and most of the time disabling. They also cause heavy social, emotional, and financial burden on patients and their families. What further compounds this problem are the current challenges in treatment and research. Among these challenges are lack of access to treatment, frequent misdiagnosis, and lack of research. In the Philippines, the small number of geneticists worsens the problem.

"I cannot do it on my own," Padilla admitted. "But I can put it in place, with the help of the Department of Health (DOH) who will provide the jobs and DOST who will provide the scholarships."

In the same discussion, Dr. Anthony P. Calibo of DOH's Family Health Office said that "we have an antiquated health resource plan." He explained that many hospitals in the country are not attuned to current requirements. "There is a disconnect. We are now looking at emerging diseases. There are so many vacant positions in hospitals." Calibo stated.

Expressing NAST's stand in the discussion, National Scientist Mercedes B. Concepcion stressed on the importance of family planning training. "What we need is the human resource and the aspect of capability building. Although we need to see genetic counsellors all over the country, there are not enough of them. In the very early years, we already realized that the medical professionals themselves did not have training in family planning," she disclosed.

Diagnosed with Pompe Disease, an inherited neuromuscular disorder, Magdaraog has been on a wheelchair since age 17. Magdaraog shared his life as a Pompe Disease patient in the Philippines during the DOST-NAST discussion. (Photo by Gerardo Palad, S&T Media Service, DOST-STII)

According to the World Health Organization, rare diseases, also called orphan disorders, affect 6.5-10 people out of 10,000. In the Philippines, one in every 20,000 have a rare disease. In some families, more than one member is affected.

The silver lining is that some rare disorders may be treated, said Padilla. She emphasized that if proper treatment is given early, a patient may become a productive member of society like 37-year-old Juan Benedicto Magdaraog. Diagnosed with Pompe Disease, a rare inherited neuromuscular disorder causing progressive muscle weakness, Magdaraog has been wheelchair bound since age 17. However, he eventually earned a degree in Industrial Design from De La Salle-College of St. Benilde and now works at home for a BPO.

IS YOUR PLATE "Pinggang Pinoy"?

By LOTUSLEI P. DIMAGIBA
S&T Media Service, *DOST-STII*

DOST-FNRI Director Dr. Mario V. Capanzana talks about Pinggang Pinoy to mediamen.

THIS PLATE makes you fit and healthy. Sorry, it's not for sale. It's called "Pinggang Pinoy" and DOST's Food and Nutrition Research Institute intends to see it on every Pinoy dinner table.

"Pinggang Pinoy" is an easy-to-understand food guide for healthy Filipino adults 19 years old and above. It is a creative tool that illustrates the recommended proportion of the three food groups: GO foods (rice and alternatives), GROW foods (fish and alternatives), and GLOW foods (vegetables and fruits), according to Dr. Mario Capanzana, director of DOST-Food and Nutrition Research Institute (FNRI).

The plate has four portions. The image of a cup of cooked rice illustrates the rice and alternatives portion while fish, most common protein source in the country, represents the meat and alternatives portion. Further, a banana, most common and available fruit in the country, represents the fruit portion, and malunggay (horseradish) represents the vegetable portion. Malunggay is known for its rich contents of vitamins and minerals.

"Pinggang Pinoy", according to Robby Carlo A. Tan, RND, and FNRI science research specialist, "intends to compliment and supplement the (food) pyramid which is the recommended consumption per day. Our 'Pinggang Pinoy' is per meal."

He also said that the "Pinggang Pinoy" is a very practical way to know what to eat, how much to eat, and what components should be included in the plate. It will also be a "catalyst to positively influence and modify the behavior of the people's eating habits," he said.

Though many people suffer from poverty, Tan suggested to maximize all the resources available. For example in buying fruits, people can buy the in-season fruits which are cheaper. Or if they have fruits or vegetables in their backyard, this will suffice.

Dr. Capanzana said that they are inviting the private sector to adopt "Pinggang Pinoy" as their platform to associate the proper eating habits of the Filipino people. He also enjoined other agencies, the National Nutrition Council, Department of Health, and other government and non-government organizations to help in advocating the use of "Pinggang Pinoy".

According to Dr. Capanzana, the DOST-FNRI together with their partners already has an ongoing project to develop "Pinggang Pinoy" for various groups, namely children, teenagers, pregnant women, and lactating women.

"It will be personalized for certain population groups," Tan said.

Experts vouch on biotech to spur growth in aggie sector

By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

THERE IS no doubt that biotechnology has helped boost our agricultural sector, affirmed Dr. Reynaldo V. Ebora, director of National Institute of Molecular Biology and Biotechnology (BIOTECH) at the University of the Philippines Los Baños.

Dr. Ebora said that products from conventional biotechnology such as bio-fertilizers have helped farmers increase their yields. Likewise, Bt corn, a product of advanced biotechnology, is widely adopted by our farmers and has helped the country attain self sufficiency in corn, he added.

Biotechnology, as defined by Convention on Biological Diversity is "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use."

Dr. Ebora made the statement in a press conference for the National Biotechnology Week celebration held Monday at the Commission on Higher Education.

Meanwhile, Dr. Jocelyn E. Eusebio, director of the Department of Science and Technology - Philippine Council for Agriculture, Aquatic, and Natural Resources Research Development (DOST-PCAARRD), revealed that the DOST is investing a lot in biotechnology especially in the field of genomics. Among its projects is using genomic techniques to shorten the breeding time of high-value crops like sugarcane, to produce varieties with higher yield and disease resistance, among others, by 2016.

Need for more STEAM

In the same press conference, Dr. Napoleon K. Juanillo, Jr., director of Office of Planning Research and Knowledge Management- Commission on Higher Education (CHED) emphasized the need for a critical mass of biotechnology researchers and scientists in the country to propel the country to progress.

Thus CHED is keen on promoting STEAM (Science, Technology, Engineering, Agri-Fisheries, and Mathematics) courses according to Dr. Juanillo. "We need to develop a culture of curiosity", he added, revealing that out of 3.1 M enrollees for this school year, only 549,107 are enrolled in STEAM courses.

The push for STEAM is also evident in CHED's Research and Development and Extension program which focus on food production and security, disaster preparedness, smart analytics, translational health, and marine biodiversity he added.

Biotechnology scholarship to increase pool of experts

Earlier, the Department of Agriculture (DA) officially launched its Biotechnology Scholarship Program during the opening ceremonies of the National Biotechnology Week held at CHED Auditorium.

Thirty-three students from Central Luzon State University, University of the Philippines Los Baños, and Visayas State University were awarded scholarships on agricultural biotechnology and related fields.

DA Biotech Program Director Antonio A. Alfonso said that the scholarship program offers a competitive package of privileges—not only in monetary terms but also in terms of opportunity for training under its research mentorship component from the country's leading scientists in agri-biotechnology partner institutions such as Philippine Rice Research Institute, Philippine Carabao Center, and National Fisheries Research and Development Institution.

The program aims to "contribute in addressing the need for more scientists and researchers in the field of biotechnology," he related.

The grant coverage includes full tuition per semester, allowance for textbook, monthly living allowance and other incentives.

Dir. Alfonso expressed that DA hopes to offer the scholarship programs to more state universities and colleges in succeeding years.

The National Biotechnology Week is an annual event organized by Departments of Science and Technology, Agriculture, Environment and Natural Resources, Education, Health, Interior and Local Government, and Trade and Industry and Commission on Higher Education as lead agency for 2014. *(S&T Media Service)*

Local experts develop dipstick kit for Philippine 'Carabao' mango authentication

By LOTUSLEI P. DIMAGIBA
S&T Media Service, *DOST-STII*

KNOWN AS the national fruit of the country, the pulpy-sweet mango is the third most important fruit crop next to banana and pineapple in terms of export volume and value, according to the Department of Agriculture High Value Crops Development Program.

The 'Carabao' mango, otherwise known as the Philippine Super Mango, is one of the most loved varieties in the world for its sweetness, aroma, and exotic taste.

In the study on "Genetic Markers and Immuno-based Identification of Philippine 'Carabao' Mango", project leader Dr. Edgardo E. Tulin from the Visayas State University said that there is a problem with the authentication of Philippine 'Carabao' mango due to mislabelling in many nurseries and orchards in the country.

"We cannot be sure if the mango seedlings they have (in nurseries) are 'Carabao' mango. It takes years to bear fruit, so we really need to be sure before we plant it. Otherwise, we will wait for five years; then, it's useless if we find out later that it's not 'Carabao' mango after all," said Dr. Tulin.

The study aims to develop a "dipstick" kit which when dipped into the mango leaf extract will react by showing a distinctive line with a dark purple color indicative of a positive ('Carabao' mango) reaction. Otherwise, no line and no color (other mango varieties) will appear on the membrane of the stick.

According to Dr. Tulin, with the completion of the study, the mango growers can be guaranteed that the planting materials being sold in the nurseries are true-to-type 'Carabao' mango. Likewise, the nurseries can confidently propagate genuine 'Carabao' mango seedlings.

The dipstick is a disposable product with an estimated cost of less than P100. The target markets of the said dipstick are nurseries, plantations, or the Bureau of Plant Industry which can use it for accreditation of nurseries and other regulatory purposes.

Dr. Tulin however noted that there is no protein sequencing facility yet in the country, which could build a gap for this kind of initiative. Hence, he hopes to have a protein sequencing facility in the Visayas to further their research as 'Carabao' mango is the country's "gold mine".

The accomplishments of the project were presented during the Science and Technology Forum on Agri-Aqua Genomics held on November 26 at the ICTO Audio-Visual Room in Diliman, Quezon City in celebration of the 10th National Biotechnology Week. The forum was organized by the Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD), the funding agency of the project. *(S&T Media Service)*

Stronger support for local inventors

By CAEZAR ANGELITO E. ARCEO
S&T Media Service, *DOST-STII*

Believing in the potential of local inventors to contribute to the country's intellectual and economic wealth, the Department of Science and Technology (DOST) commits to enhance its services that support inventors.

"We are continuously looking for better ways to serve our clientele, including inventors," DOST Secretary Mario G. Montejo said.

As such, Sec. Montejo instructed Dir. Edgar Garcia, head of DOST's Technology Application and Promotion Institute (TAPI), to facilitate 100 patent applications for the year. Patent is an intellectual property right granted exclusively to inventors "to exclude others from making, using, offering for sale, or selling the invention" throughout the country. TAPI is DOST's lead agency in supporting local inventions and DOST's arm for technology transfer and commercialization.

Inventions, whether products or processes, are conceptualized to solve specific technological problems. And when patented, inventions contribute to the increase of the Global Competitiveness Index of the country.

To achieve the target number of patent filings, Garcia and his team explored creative ways to increase patent filings, such as partnering with patent professionals like the Association of PAQE Professionals, Inc. (APP) and the Innovation and Technology Support Office network of the Intellectual Property Office of the Philippines. The APP is the country's only all-patent agents association.

As well, Dr. Garcia enhanced TAPI's other services. "For instance, we expanded our Intellectual Property Rights Assistance Program to cover not only patent and utility model applications but also other intellectual property rights," Garcia said.

Other intellectual property rights include industrial design, trademark, and copyright.

"We also upgraded many of our assistance programs from lloan assistance to full grants," Garcia added.

He also explained that most of TAPI's assistance programs such as on intellectual property protection, are for free, including professional services. "But applicants should show intentions that they deserve government support," Garcia said.

"[The validation for government support] is needed to ensure that our taxpayers' money is well spent, aside from meeting our quality requirements," Montejo explained.

Moreover, DOST's assistance to inventors as well as innovators include the availability of all DOST technologies and services of DOST agencies, such as the Advanced Device and Materials Testing Laboratory or ADMATEL and Food Innovation Centers where inventors can enhance their creativity.

Support to National Inventors Week

By virtue of Proclamation No. 285, the National Inventors Week (NIW) is celebrated every third week of November featuring local and foreign exhibits of inventions and various symposia. The NIW serves as "venue for the exchange of ideas and information including facilitation of market opportunities to encourage the generation, promotion and development of Filipino inventive capabilities," as stated in the Proclamation.

According to TAPI, it has stopped conducting the National Invention Contest during the NIW since 2009, and instead has been holding the National Invention Contest and Exhibits (NICE) as a separate activity. TAPI tried to provide financial support to the conduct of NIW but after several incidents, the Institute "decided that no direct financial assistance would be extended to the Filipino Inventors Society Producers Cooperative (FISPC), or to any inventor organization per se," according to TAPI Officer-in-Charge Marion Ivy Decena.

In an official communication, Decena revealed that TAPI, in support to the NIW celebration, proposed to conduct and fund several fora to be participated in by all inventor associations. However, the FISPC,

organizers of the 2014 NIW, failed to comply with basic requirements thus, the funding request for the NIW fora was not processed.

Yet despite some failed attempts for funding, Sec. Montejo assures of DOST's continued support to inventors. Montejo himself was a multi-awarded inventor prior to his appointment as DOST secretary.

"DOST will never leave our fellow inventors behind, especially if they have good and novel products," Montejo said. "However, we also need to address the problem of having too many inventor organizations." Such leads to disunity and pursuit of individual agenda, according to Montejo who cited the NIW celebration as an example of an inventors' event being celebrated by different inventors' organizations in separate ways.

Why patent assistance requests are not granted

TAPI's support for patent application is always available but it is "high time for the inventors to improve the quality of their disclosures to get appropriate protection," Dr. Garcia said.

Garcia explained that patenting is a very specialized activity and is not merely a simple document that shows technological ownership.

"The basic patenting requirements according to law are novelty, inventive step, and industrial applicability," he cited.

Novelty, for instance, requires that inventions should be new anywhere in the world, while inventive step requires modifications of an existing art that should not be obvious to "a person skilled in the art."

"Patenting is not as simple as changing something from an existing device. There should be technical effects that only our seasoned patent agents in the department can fully explain," Garcia added.

"We usually receive poorly disclosed patent applications, aside from other reasons why applicants cannot avail of our services, such as inability to comply with our requirements," he continued.

Garcia also explained that many local innovators are asking for patent assistance for their abstract ideas, such as perpetual motion machines, or unrealistic inventions, such as a power plant that can supply electricity to the whole Visayas and Mindanao.

Some applicants even asked for at least a billion pesos for consultancy services alone, while another requested for protection of his whole clan in exchange for imaginary digital age warfare that outlines artificial intelligence as the basic tool.

For more information on patents and intellectual property rights, pls contact: Atty. Marion Ivy D. Decena, Officer-in-Charge, DOST-TAPI Tel. Nos. 837-6188 Ext. 2151;Fax No. 837-2936

Better rubber for all

By REGINALD ROY U. DELA CRUZ
S&T Media Service, *DOST-ITDI*

Rubber is all around us - in pencil erasers, tires, adhesives, footwear, sports and recreation equipment, machinery, and more. But it isn't always the best and the sturdiest. Through its Standards and Testing Division, the Industrial Technology Development Institute is starting to integrate quality testing services for better rubber-based products.

Rubber has been a valuable Philippine commodity for decades, helping the country's economy since the 1900s. However, the rubber industry is hindered by the lack of testing laboratories and product standards in the country, a situation that may have caused difficulties for consumers and manufacturers alike. Defective products – for example, the rubber hoses and hose assemblies used by oil, gas, and liquefied petroleum industries and consumers – pose great threat to both property and human life, and thus are a major concern for the industry in terms of safety, aside from economic impacts.

Thus, there is a need to establish standards and testing protocols to ensure that rubber products, both locally produced and imported, adhere to national and international quality standards.

With this, the Philippine Rubber Industries Association (PRIA) and other key players in the rubber industry, along with the Board of Investments under the Department of Trade and Industry (DTI) and other government agencies such as ITDI and fellow DOST agency Forest Products Research and Development Institute (FPRDI), are creating a roadmap to help improve the Philippine

rubber industry, especially in the area of process input and other technical issues related to standards and testing. In fact, ITDI had been identified by DTI's Bureau of Product Standards Technical Committee No.16 (BPS-TC 16) as the appropriate agency and third party laboratory to offer a complete testing service that permits the product specification to be verified prior to issuance of the quality mark by the enforcing authority.

By integrating testing services of rubber and rubber-based products, ITDI is on its way to offer complete laboratory testing services for manufactured rubber based on industry requirements. It will also integrate analytical testing services for manufactured rubber in accordance with established mandatory standards and the test requirements for the DTI issuances of PS/ICC quality mark, and initiate accreditation of additional rubber testing services to ISO 17025 standards.

What is in it for us?

So what does this integration mean for the future of the rubber industry? It means that new or upgraded testing facilities and newer, more complete state-of-the-art testing equipment can now be procured or built. It means that with testing facilities available at ITDI, samples don't have to be sent abroad for testing, which saves money and time.

The government too can now set product standards based on local conditions and yet remain in accordance with global standards. With standards in place, more efficient testing facilities can be established and developed to accommodate the demands of the growing Philippine rubber industry as more rubber technologies are being developed.

With the integration of rubber testing services, ITDI and DOST can help the following sectors: the infrastructure and transportation sectors under the DPWH (Department of Public Works and Highways) and the DOTC (Department of Transportation and Communication), such as airport management agencies like the Manila International Airport Authority (bearing pads, waterstops, aircraft tires, hydraulics, etc.) and railroad service authorities such as the Light Rail Transit Authority (wheel linings, dampeners, etc.); Metropolitan Waterworks and Sewerage System (MWSS) and other water service companies (rubber sealing/gaskets, hoses, etc.); the 46 manufacturers/distributors under PRIA's wing (tires, automotive/industrial, footwear, latex); and of course, the consumers.

What is at ITDI now for the rubber industry?

DOST-ITDI offers several rubber testing services (see box below). However, ITDI still needs to improve or acquire better equipment and facilities to offer services for abrasion test, tensile, percent elongation, modulus properties, aging tests/degradation test (22h, 48h, 70h, 72h, 96h, 100h, 168h, 335h), International Rubber Hardness Degrees (IRHD)/durometer hardness, and dimension test. Food grade tests and rubber permeation tests, though unavailable at STD, can be availed at ITDI's Packaging Technology Division testing facilities. According to PRIA's studies however, some of the services sought by the industry are not yet available in the country, namely ozone resistance weathering tests, rebound resilience, flammability resistance, plasticity retention index for natural rubber, electrical property test (volume resistivity), and ROHS (Restriction of Hazardous Substances). Prices for the rubber testing services have yet to be set and standardized, pending the needed equipment and facility upgrades. Nevertheless, ITDI remains committed and very capable of accommodating testing requests even with its limited resources.

With ITDI's integrated and upgraded rubber testing facilities, we can help our rubber industry bounce higher for better rubber products and standards

ITDI's STD laboratory facilities offer the following rubber testing services:

- Load test
- Compression set
- Tear resistance
- Stain resistance
- Chemical/oil swelling test
- Specific gravity/density
- Accelerated weathering
- Compression recovery (50T max)

For more information, please contact Ms. Hermelina H. Bion,Chief Science Research Specialist, Standards and Testing Division, Industrial Technology Development Institute, through telephone number (+632) 837-2071 to 82 loc 2197 or via email atstd@itdi.dost.gov.ph.

STARBOOKS goes international

By LOUISE IAN T. DE LOS REYES
S&T Media Service, *DOST-STII*

In a very rare opportunity, the Department of Science and Technology- Science and Technology Information Institute (DOST-STII) was able to present in the Government Libraries Section's parallel session of the 2014 International Federation of Libraries/Associations World Library and Information Congress (IFLA WLIC) its project dubbed "The Philippines' First Science Digital Library" in August, 2014 at Lyon, France. This is the DOST's second time after 13 years to be selected to present in this annual gathering of libraries and library associations from all over the world. The first time was in 2001 by Rosie R. Almocera with a poster entry presentation on the ScINET-Phil Integrated Library Management System (SILMS).

DOST Assistant Secretary Raymund E. Liboro, also Officer-In-Charge of the DOST-STII, and Louise Ian T. de los Reyes presented to the said audience the DOST STARBOOKS or the Science and Technology Academic and Research-Based Openly-Operated Kiosk Station.

DOST Asec. Raymund E. Liboro and Louise Ian T. delos Reyes, science research specialist II of STII in France

"I can say that compared with the other countries that presented, we are still ahead," said Asec. Liboro. "The other speakers were still presenting problems on library management systems and such, while we have already gone digital," he added.

The STARBOOKS presentation concentrated on the rationale of STARBOOKS, its features and other details. Asec. Liboro told the audience that when Typhoon "Haiyan" hit the Philippines, it wiped out nearly all STARBOOKS units installed in Region 8. Asec. Liboro then enjoined the participants to give donations for rebuilding STARBOOKS in these areas through a couple of campaigns called "Sponsor a STARBOOKS" and the "Building Back Libraries Project." The presentation was later followed by a table panel discussion with the audience.

Meanwhile, a lady from the International Agency for Research on Cancer of the World Health Organization offered the publications available on their website to be included in the STARBOOKS content. Another lady from the International Relations Round Table of the American Library Association commented that STARBOOKS is the type of project that is "worthy of being awarded with an ALA Presidential Citation for Innovative International Library Projects." She added that she will nominate STARBOOKS for this award.

On a lighter side, the Committee, presenters and audience of the Government Libraries Section's parallel session had a blast taking selfie shoots with Asec. Liboro's i-phone mounted on a monopod. Also a big hit with the audience, especially the participants from India, were the DOST keychain and Smarty keychain. In India, they said, DOST means "friend", which explains why they helped themselves to a number of keychains.

Dickoy Magdaraog seems to be the regular guy. Yet, he's not. In more ways than one, he belongs to a league of individuals so rare in this world that they command nothing less than respect and inspiration.

Dickoy Magdaraog: Rare Breed

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

Pompe Disease patient Juan Benedicto "Dickoy" Magdaraog and mother Cynthia, president of the Philippine Society for Orphan Disorders.

Photos by Gerardo Palad, S&T Media Service, DOST-STII

Armed with a degree in Industrial Design from De La Salle –College of St. Benilde, he is a work-from-home urbanite who sells gadgets on the side and invests in the stock market. On his free time, he goes around Greenhills, watches movies, and drinks with friends. He's got Twitter, Instagram, and Facebook (FB) accounts. He does online banking, shops and meets people online. And, he likes burgers, pizza, and ramen. Not to mention that he does have a girlfriend, and a great sense of humor.

He seems to be a regular guy indeed. Only he's not.

Dickoy moves around in his motorized wheelchair. He suffers from Pompe Disease - a rare inherited neuromuscular disorder causing progressive muscle weakness. "The only thing he can move on his own is his wrist," shared mom Cynthia, president of the Philippine Society for Orphan Disorders.

In the Philippines, rare diseases affect one in 20,000 individuals. Most cases are due to inborn errors of metabolism where there is lack of a specific enzyme in the body. There are only a few specialists who can immediately suspect or diagnose this condition correctly. According to Mrs. Magdaraog, there is a lack of available medication and treatment in the market and help from society at large. Rare diseases are often neglected by doctors who pay more attention to other more common illnesses. In which case there is hardly no available health support and health delivery system established in the country. For these reasons, rare diseases are also called orphan disorders.

Her son, now 37 years old, has two or three caregivers who feed him and accompany him wherever he goes. He is also totally dependent on his ventilator. Since Pompe Disease affects the muscles, the heart and lungs weaken eventually, and without early treatment, this may lead to cardiac arrest or pulmonary complications.

Truly, Dickoy Magdaraog is more than the regular guy. He's actually a rare breed. His resilience and resolve to be useful and productive is what makes him a rarity among victims of rare diseases and other debilitating conditions.

"I have Pompe disease but it does not define me," he announced during a roundtable discussion of rare diseases organized by the Department of Science and Technology's National Academy of Science and Technology (DOST-NAST) in October 2014. "It's part of me but it's not who I am. Who I am is so much more."

Dickoy's story

Born in November 1977, Dickoy was a normal boy growing up – running, jumping, swimming and playing *patintero* with other kids. He loved cars and had crushes.

Then he reached the age of 10. His parents noticed he was having difficulty climbing the stairs, running and keeping up with the other kids. His hips would also waddle whenever he walked, causing other children to call him *"bakla (gay)"* and *"lampa (clumsy)."*

By the time he was in high school, he could not pull out the heavy books. Upon advice, the Magdaraogs transferred their son to another school since Ateneo was not built or equipped for handicapped students. At his new school, classmates would piggyback him through the stairs of their four-storey school building. One of them was his best friend, Dino with whom he has kept in touch. Aside from carrying him on his back, Dino would also walk slowly with him in school.

At home, Dickoy was also ably supported by his family including brother Stevie who is four years younger. There was a time when they shared a room and Stevie would wake up early in the morning to turn his brother on his side or carry him to the bathroom.

"We let him be. We let him adjust to his disorder and we treated him as if there was nothing wrong with him," related Cynthia.

One of the doctors said he would not live past the age of 30. While the family acknowledged the possibility of their eldest being snatched from life at an early age, their hopes were kept alive by another doctor in the U.S. "Who knows, science and technology might catch up. Let's keep him well and healthy," the doctor advised the couple.

Dickoy finally discovered what afflicted him when this doctor told his family he was suffering from Pompe Disease. By this time, he was already 16 years old. By the age of 17, he was on a wheelchair.

In December 2005, at age 27, he was given his first enzyme replacement therapy. In previous years, clinical trials for the treatment were still being held. By this time however, human trials were already being conducted. Dickoy learned about these trials and applied for a slot among the participants. His application was approved. "That was the best Christmas we ever had," recalled Cynthia. "For us, it was a scientific miracle and a scientific blessing."

Previously, Dickoy was so thin and thinking that he had muscular dystrophy, the doctors were making him eat and do things that were otherwise not acceptable for Pompe Disease. Related Cynthia, "We were giving him sugar, thinking that it would boost his energy. It turned out his body could not process sugar. Then he was given exercises in the physical therapy clinic. The exercises turned out to be only wasting his muscles. So when we went to the US, the nutritionist gave him a different diet – high fat, high protein, low carbohydrate, and he had to take ¼ cup of peanut butter every meal."

Thus, the progression of his disease was halted. He has not weakened ever since.

At present, Dickoy continues to go to the doctor for his IV infusions once every two weeks.

"Of course it's never going to be a miracle drug that's going to make me walk all of a sudden. It's keeping me alive and hopefully as science and technology progresses, there would be better treatments, better options," he told *S&T Post*.

Tapping technology for work, friendships, and advocacy

For the meantime, he makes productive use of his time by working online. Taking advantage of modern technology, he taught himself web design and started designing websites on a freelance basis. Now, he works for a BPO for a US-based firm. He maintains two scholarship sites for the firm, and does front-end coding for them and other support work like troubleshooting and updating.

"I'm very grateful for this industry, the outsourcing industry," he stated. "And the Internet is a great invention."

He saves money for the things he needs to buy, such as his motorized wheelchair and his van which is equipped with a lift.

Dickoy revealed how some people have wondered how come he's not angry or depressed. He tells them he just takes it one day at a time. "If it's a bad day, the consolation is that I get to sleep and tomorrow I start all over. Be thankful for the things that are there, like I have a good family. I've never experienced being hungry in my life. I never experienced sleeping in the streets, not having clothes. Some people don't have a place to stay. So why will I complain?" he elaborated.

"He always believes that success is not how much money you have or the prestige that you earn. It's how you handle the barriers and become productive," Cynthia added. "He was also blessed that the Lord balances it off. Because physically, it is so hard to have friends. But he has a lot of friends because of the Internet – even people from other parts of the world."

Among this wide circle of friends are other Pompe Disease patients in the Philippines and abroad, specifically his co-members at the US-based International Pompe Association. They get in touch with one another via the organization's FB page.

In fact, Dickoy logs on to FB every day, "not because I want to waste my time." For him, FB is a valuable tool which provides him with a channel to get ideas, meet people and just know what's going on in the world. He forgets about his disability while he is working or interacting with friends on the Internet, he claimed.

It is also through the Internet – social media in particular – that Dickoy shares his experiences to others to fulfill his advocacy for rare disease patients like him. At the same times, he gives talks during public fora on health such as round table discussions organized by DOST-NAST.

In fact, he promotes technology as a whole, as a way to lead a productive life. "The best way to promote it is to share my life and get them to see that, 'Look I'm a person with disability and I can't merely move my hand, yet I'm productive because of technology, computers, Internet and I can do most of the stuff that I need to do like I communicate online through smartphones, I get to chat and meet several people,'" he explained.

He may have accepted his situation but his hopes have not been dashed. "Hopefully, as the Philippines strengthens its science and technology sector, we hope we'll be able to develop a treatment or a cure not just for people with rare diseases, but diseases in general."

The Ideation, Design, and Development Laboratory is housed inside the Provincial Science and Technology Center (PSTC) Laguna building, recently inaugurated by the Department of Science and Technology at Laguna State Polytechnic University in San Pablo City, Laguna. The IDD serves as a creative hub for small entrepreneurs, designers and students and as a launching pad for small, micro, and medium enterprises to attain greater business success. *(S&T Media Services)*

Design lab is main feature of new Laguna S&T Center

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

AN IDEATION, Design, and Development Laboratory (IDD) is set to boost Laguna's micro, small and medium enterprises (MSMEs) as it opens its doors with the inauguration of the Department of Science and Technology's (DOST) Provincial Science and Technology Center (PSTC) Laguna last November 18, 2014.

The laboratory is PSTC Laguna's main facility which is situated within the sprawling campus of the Laguna State Polytechnic University (LSPU) in San Pablo City, Laguna.

Offering services in product development, design, and prototyping, the IDD aims to become a creative hub for entrepreneurs, independent designers, and students alike where ideas and innovations are grown and given a chance to concretize with the aid of top-flight technologies for business enhancement. Promising projects by students, in particular, will be evaluated and tested in the center for commercialization potentials.

The IDD shores up its services by offering workshops in 3D printing and 3D CAD Design Software (Solid Edge Design Software) to DOST personnel, students and faculty members within and outside LSPU.

According to PSTC Laguna Provincial Director Engr. Samuel L. Caperiña, availing these services translates to several benefits for MSMEs such as increased sales, increased earnings, reduced cost and wastes, greater efficiency, and less energy.

"Design and innovation is a challenge not just in the private sector but also in the academic community," said DOST IV-A Regional Director Alexander R. Madrigal during the inauguration held on the occasion of DOST IV-A's 51st anniversary. "It's about time we catch up [with other countries] and start providing these ideation services to industries," he stated, citing the example of Singapore where innovation is vibrant thus allowing its industries to be globally competitive.

Madrigal added that In other countries, research and development activities are mostly lodged in academic institutions, hence they decided to build the center inside LSPU.

PSTC Laguna ramps up preparations for Laguna-based businesses to be at par with their counterparts in neighboring Southeast Asian countries once the ASEAN economic integration kicks in by December 2015.

Hon. Angelica Jones B. Alarva, board member of Laguna's third district, expressed her support for PSTC Laguna as well as DOST's other projects for livelihood and industry in Laguna. "If livelihood is strong, there will be more jobs available," she said during the press conference held at the Shanghai Palace Restaurant in San Pablo City.

For inquiries on the IDD workshops, contact Ms. Paula C. Omila of CIM Technologies, tel. nos. 7522468 and 09054206900.

Montejo drives scale-up of Cebu food entreps to crack into world market

By ALAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

MANDAUE CITY-- Aside from being one of the most historical places in the country, the province of Cebu also takes pride in its bestselling "pasalubong" products such as dried mangoes, danggit, masreal, and many more which local and foreign tourists like to bring home.

Thus Cebu food products penetrating the world market and gaining recognition is a common dream for local food manufacturers.

"It does not matter whether you are a small entrepreneur, as long as you will conform to standards set by the market, then you have the chance to penetrate international markets," Department of Science and Technology (DOST) Sec. Mario Montejo said.

To help translate this aspiration into reality, the DOST though its Region 7 office, together with the Cebu Chamber of Commerce and Industry (CCCI) and AFOS Foundation for Entrepreneurial Development Cooperation, recently launched the Cebu Food Consultancy Group (CFCG) during the 2014 Visayas Cluster Science and Technology Fair last October 4 at J. Center Mall in Mandaue City, Cebu.

The CFCG is a 21-member team from DOST, the Food and Drug Administration, Department of Health, and different educational institutions in Cebu. With expertise in food technology and safety management, the group is tasked to provide food safety awareness trainings, industry exposure on basic food technology subjects such as metric conversions and basic food chemical components, referral to DOST's Small Enterprise Technology Upgrading Program, and training for companies aiming for certification under the Hazard Analysis and Critical Control Points (HACCP) and ISO 22000. HACCP is a system which ensures food safety, performs hazards assessment, and establishes control systems focusing on prevention.


peppercut.wordpress.com.


marco-polo-sugbusog-masareal.jpg

"We have to meet the requirements of the market," Montejo said, "in order for our food products to be competitive in both local and international markets."

The report of CCCI indicates that more than 40 percent of micro, small, and medium entrepreneurs in the Visayas are from the food sector. However, the chamber said there are no complementary technical and vocational training courses for the sector to improve its standards.

Meanwhile, DOST Region 7 Director Engr. Edilberto L. Paradela stressed that compliance with ISO 22000 and HACCP is necessary for local food companies to be able to sell their products in the world market.

Ma. Teresa Chan, president of CCCI, added that the establishment of the CFCG is vital in helping the sector become globally competitive, particularly with the upcoming full economic integration of ASEAN countries.

The need for safety standards

Meanwhile in a separate forum organized last September by DOST Region 7, CFCG Consultant Dietmar Speckmaier stressed that Philippine-based companies, particularly in food and beverage manufacturing, should realize that they must abide by global standards and constantly upgrade themselves to be qualified to serve the market.

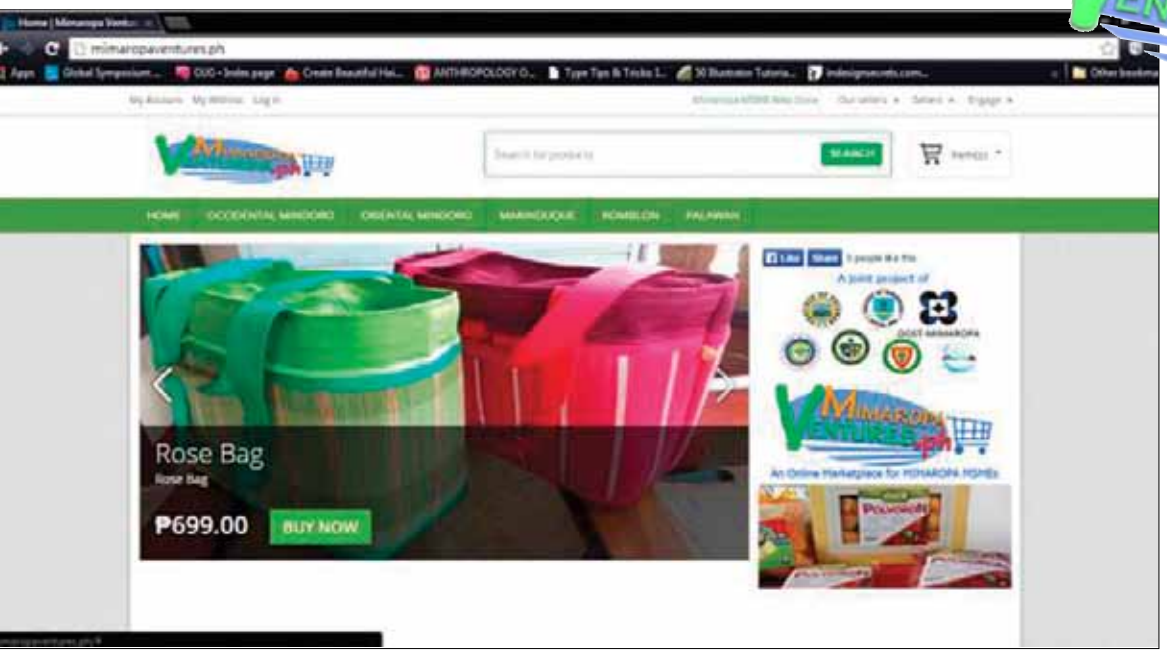
He also mentioned a study on street food microbiology which showed that 52 percent of the 40 food samples failed in accordance to Philippine food safety standards.

Speckmaier said that local food companies have to comply with the requirements set by the Food and Drug Administration as personal hygiene and food safety are important.

"Testing is not enough. It should be a system. It should start with the food processing itself. Companies need to have a food safety system development to be implemented within," he said. *(With reports from DOST Region VII website)*

Online shopping for MIMAROPA products at mimaropaventures.ph

By CYD FRANCIS D. RECIDORO
DOST-MIMAROPA



The MIMAROPA Ventures (mimaropaventures.ph) logo and website front page. The project is a joint effort by DOST-MIMAROPA, the provincial governments of MIMAROPA, and the Palaweño ICT Association (PICTA).

SHOPINAS, ZALORA, Lazada, OLX, and AyosDito—these are just some of the many online marketplaces in the Philippines that enable consumers to purchase a wide range of products with just a few clicks of a button wherever they are, and whenever they want.

"Online shopping is a rising trend in the Philippines these days," according to Pinoy Techno Guide, what with the convenience it offers in buyer-seller transactions. Indeed, an article from the Philippine Daily Inquirer in March 2013 cited MasterCard's Online Shopping Behavior Study 2012 in 14 Asia-Pacific countries, which stated that more and more Filipinos are beginning to shop online, with 40.4 percent of Filipino respondents, aged 18 to 64 years old, accessing the Internet to shop.

The survey also showed that the country's e-commerce potential is expected to grow even more with the emergence of enabling technologies.MasterCard's 2012 study further showed that "while Filipinos ranked lower than their neighbors in the propensity to conduct online transactions, the country's index of 71 had an upward trajectory, rising from 64 in 2011, and 57 in 2010. The same was said to be true for online shopping satisfaction rating, which was at 86.1 percent, from 84.4 percent in 2011 and 82.6 percent in 2010."

Participating MSME owners from the province of Romblon learn about e-marketing from resource person Ms Janette Toral of digitalfilipino.com during the Digital Marketing and e-Business Workshop for MSMEs held at the Romblon State University (RSU) on November 20, 2014. The workshop was organized and conducted by DOST-MIMAROPA, through the Provincial Science and Technology-Romblon, Provincial Government of Romblon, PICTA, and in cooperation with RSU.

With these in mind, coupled with the Regional Development Plan for 2011 to 2016 on Enterprise Development, the Department of Science and Technology-MIMAROPA

(From left) RDC Vice-Chair and NEDA IV-B Regional Director Atty. Romeo C. Escandor, Air21, Inc. President and CEO Sheila P. Lina, DOST-MIMAROPA Regional Director Dr. Ma. Josefina P. Abilay, RDC Chair and Romblon Gov. Eduardo C. Firmalo, Oriental Mindoro Gov. Alfonso V. Umali, Jr., Occidental Mindoro Gov. Mario Gene J. Mendiola, and PICTA President Eleutherius L. Edualino at the Ceremonial MOA Signing of the project "E-Marketing Website and Digital Marketing Training for MIMAROPA MSMEs" held at the La Breza Hotel, Quezon City on December 12, 2014.

Region (DOST-MIMAROPA), the provincial governments of MIMAROPA led by Regional Development Council Chair Eduardo C. Firmalo, and the Palaweño ICT Association (PICTA), joined together to create MIMAROPA Ventures through the project "E-Marketing Website and Digital Marketing Training for MIMAROPA MSMEs." The website can be accessed at http://mimaropaventures.ph.

MIMAROPA Ventures is an e-marketing platform which enables MSMEs assisted by government offices all over the provinces of Occidental Mindoro, Oriental Mindoro, Marinduque, Romblon, and Palawan to sell their products online. The project also includes a series of workshops for each province,focusing on teaching participating MSMES about e-marketing, its benefits, and how to create their accounts and sell in mimaropaventures.ph. Workshops were conducted in Romblon on November 20; in Marinduque on November 24; and in Palawan on December 10. The provinces of Occidental Mindoro and Oriental Mindoro, meanwhile, will have their respective workshops in January 2015.

The MIMAROPA Ventures project gives MSMEs a broader market reach, virtually without the travel cost. There are absolutely no sign-up fees, and to top it off, because of the partnership with Air21 and Shopinas.com, there is a system for both credit card and cash payments, as well as a logistics system in place, which will definitely make transactions secure, easy and hassle-free for sellers and buyers alike.

The presentation of the MIMAROPA Ventures website, as well as the ceremonial signing of the Memorandum of Agreement between DOST-MIMAROPA, the provincial governments of MIMAROPA, PICTA, and Air21 was held during the Regional Development Council Full Council Meeting at the La Breza Hotel in Quezon City last December 12, 2014.

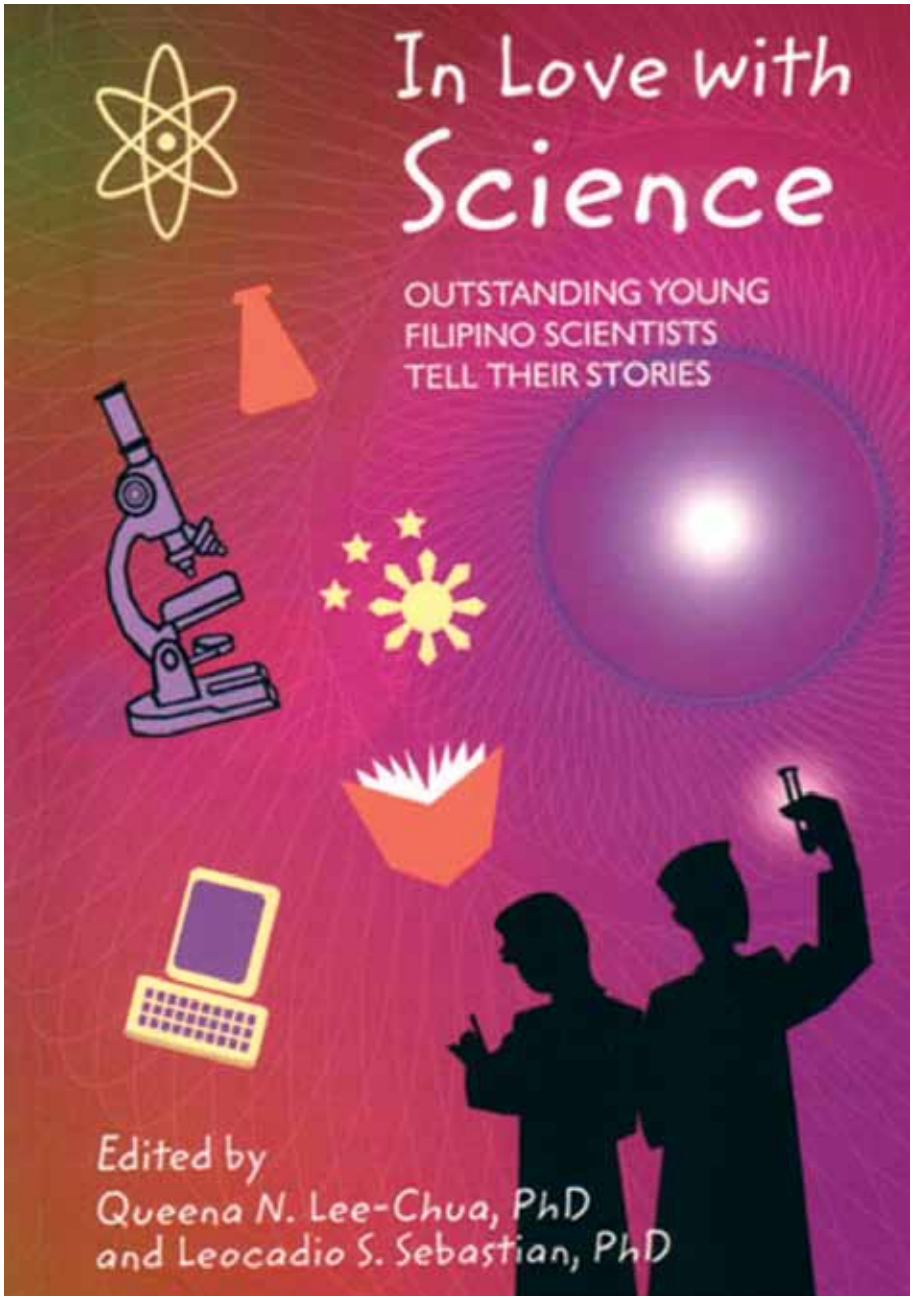
Please visit MIMAROPA Ventures (http://mimaropaventures.ph) now! Every purchase of quality MIMAROPA products you make not only helps our MSMEs, but also contributes to attaining inclusive growth for countryside development in MIMAROPA.

Ranjit Montablan, PICTA Executive Director, teaches participating MSME owners from Marinduque how to create their respective accounts in the MIMAROPA Ventures website at the workshop held at the Marinduque State College on November 24.

BOOK REVIEW:

By MARIA LUISA S. LUMIOAN
S&T Media Service, *DOST-STII*

In Love with Science



WHO WOULD have thought that a "rowdy boy" with poor grades in school would one day become a successful scientist-teacher, with an Outstanding Young Scientist (OYS) Award in his belt?

His story is among the first person accounts of 22 OYS awardees' journey in "In Love with Science: Outstanding Young Scientists Tell Their Stories."

Dr. Erwin P. Enriquez, OYS 2004 awardee, details his life as a young boy who was almost not accepted to the third grade by his teacher because of his poor performance the previous year. He credits that same teacher in introducing him to the world of science through guidance and hands-on learning. He also mentions his other mentors who have helped him learn science "the way it should be learned" that is, "with a clear mind and a sense of wonder."

OYS 2001 awardee Dr. Christina A. Binag, on the other hand, shares how she found herself at a crossroad when faced with the challenges of starting a family while pursuing her career goals. She was on the brink of giving up her doctoral studies, but she drew strength from his supportive husband and family to accomplish her objectives.

These stories and more remind us that such accomplished individuals are just as human as everyone else, exposed to more or less the same realities that the rest of us have to contend with.

Another striking common theme in these stories is that the awardees always have someone to thank for their success - parents, in-laws, spouses, and children who have all supported them in the pursuit of their goals.

The book will make one admire these scientists, who, apart from being able to survive their personal struggles, were also able to rise beyond their personal interests to serve the greater good. A good number of them have the option to work in greener pastures yet decided to give their talents, skills and time where they are needed most.

Readers can still easily relate to the stories of struggles, hopes, and dreams which are written in an informal, personal way, with only occasional scientific jargons.

Edited by OYS recipients Queena N. Lee-Chua and Leocadio S. Sebastian, the book is a must read for those who are aspiring to be scientists, and even those who are just looking for their daily inspiration.

The Outstanding Young Scientist Award was instituted in 1980 by the then National Science Development Board (now Department of Science and Technology) to recognize Filipino scientists who are below 40 years of age for outstanding contributions to science and technology. National Academy of Science and Technology, the highest advisory body on science and technology in the country, is in charge of the screening and selection of this award.

S&T Post welcomes contributions for our Book Review section. Please email your contributions to eadeleon.dost@gmail.com. Reviews should tackle the book's science and technology component, subject to the approval of the Executive Editor. For inquiries, call 837-2191 local 107 and look for Gigi de Leon.

MOVIE REVIEW:

By ALLAN MAURO V. MARFAL
S&T Media Service, *DOST-STII*

Chef: Serving a healthy dish that is easy to digest

CARL CASPIER is a proven and talented chef in Gauloise in Brentwood, California. In his desire to gauge how he will grow as a chef, he attempts to be innovative in introducing new dishes to their customers. However, after the restaurant owner disapproves his plan and goes with the traditional menu, the restaurant receives a poor review from the prestigious food critic and blogger Ramsey Michael.

Carl expresses his displeasure to Ramsey on Twitter, not realizing he is doing it in public. This is followed by a personal altercation between Carl and Ramsey, after the latter posts unfavorable live tweets of the meal as each course arrives. The negative publicity turns Carl into a social media sensation, as videos featuring his meltdown go viral. While the entertainment factor is high, Carl's professional credibility and job possibilities evaporate due to the furor over his rant. Shortly after, he quits his restaurant job.

The film "Chef" offers a dish not foreign to the appetite of many Filipino moviegoers, like a typical burger in your favorite buy one take one store, whose taste you already know even before you take a bite. However, "Chef" is a burger spiced up with lettuce, tomatoes and other vegetables for a healthy serving. In this case, these healthy ingredients are for the moviegoers' minds.

chef.ver3.xlg

www.alicecarbone.com

However, it is not in the same breath as films which expose out-of the-box ideas or revelations of knowledge.

We can discuss everything about the impact of social media. We can figure out easily how social media could take away our credibility as an individual once we get out of control with our tweets, replies and status. We do not need to ask the experts or search for explanations from reference materials to understand this phenomenon. And these seem to deprive the sense of the film.

Instead, "Chef" allows viewers to look into the fact that social media, although a great and useful invention, has been providing us with so much freedom. It is like eating too much fatty and sweet foods or drinking too much. No one is preventing us from consuming these. But once we go above the limits, different health complications would tell us the consequence of our actions.

Yet, how come many of us still do not have the sense of responsibility when engaging in social media? Many among us still continue with our irresponsible posts and replies. And why is it that there are still women who post their sexy selfies despite the possibility that their photos could be used as promotional materials for different night clubs.

As it progresses, the film decides to balance its ingredients by presenting how social media could be a game changer in society, if used appropriately.

As Carl tries to redeem his career as a chef, he restores a broken down food truck and travels in it around town to serve Cubanos, a Cuban sandwich with yucca fries. Carl's tech-savvy son, Percy finds a way to promote their products by posting the menu as well as the photos and videos of people who fall in line to buy Cubanos on Twitter. These create so much buzz across the country, sending people to fall in line and wait for the arrival of their food truck in every place they are scheduled to stop.

The film offers the viewers an obvious scenario that we tend to overlook. Social medial can spread the gospel around the archipelago. One sensible post in social media could improve the lives of many people. Obviously, it was not invented to hurt or malign people, but to help people express their ideas, share their experiences, connect with one another, and yes, sell their products and services to the online and global market, thus making our lives better and more meaningful.

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Is it a bird? Is it a plane? No, it's SkyTran!

COMMUTERS OF the world, here's SkyTran.

Using the SkyTran website or mobile app on a smart phone, the requesting passenger may type in his starting and ending point, as well as time schedule of his travel and voila - a driverless, levitating pod using a network of magnetic guideways will arrive and carry him to his destination!

"Being stuck in traffic is just the most stress-inducing, soul-crushing part of society today," pronounces SkyTran CEO Joe Sanders. "We really want to make people's lives better and elevated, high-speed transportation is the answer."

Designed to reduce commuter woes and city estate congestion, SkyTran can serve 12,000 passengers an hour per guideway. This number increases with each guideway. "That is more than a light rail and equal to three lanes of highway," remarks Sanders.

Weighing just 300 pounds, the pod uses up merely a third of the electricity used by one of today's hybrid cars. Furthermore, it uses maglev (magnetic levitation) technology where electric current from the suspended magnetic tracks powers the system and causes less friction for a smooth riding experience. It likewise operates a side acceleration line track for boarding and alighting of passengers to avoid traffic jam. Aiming to be a greener transport, SkyTran is also set to be geared with solar panels.

Multiple "off ramps" will serve as SkyTran stations where requesting passengers can board their pods. Modular construction will be utilized for the system which means that building its 20 feet above the ground guideways costs less and takes less time compared to the construction of other existing transport system.

"We can build on sidewalks, buildings, anywhere really and create a whole host of stations for people to choose from" says Sanders.

SkyTran's first public pilot project at Israel Aerospace Industries in Tel Aviv, a 400-500 meter loop, will be implemented by the end of 2015.

A full-scale SkyTran is also currently in the works at the National Aeronautics and Space Administration Ames Research Center in California, one of the developers of the transit system alongside the private company SkyTran.

Sanders says that this point-to-point transit may run up to 70 km an hour for its testing phase but may speed up to 240 km an hour at its commercial stage.

"Transportation will just recede into the background of lives... I think about where I want to go, tell a computer where I want to go and it just takes me there – seamlessly," says SkyTran Chief Technology Officer and Director John Cole.

Several parts of the globe have expressed their willingness to go for the green light for this personal rapid transit system including the USA, Europe, and Asia.

Sources:
http://www.designboom.com/technology/skytran-tel-aviv-builds-the-levitating-public-transit-of-the-future/
http://grist.org/business-technology/personal-rapid-transit-the-future-of-public-transportation-maybe/
http://www.haaretz.com/news/national/1.600947
http://edition.cnn.com/2015/02/03/tech/skytran-levitating-pods/

Potential treatment for Ebola used in clinical trials in West Africa

AFTER SOME months of conducting clinical trials for the possible treatment of Ebola, a drug is finally showing signs of effectiveness.

The drug is being used as an influenza treatment in Japan and was being tested in Guinea as of February 2015. Guinea is one of the three West African countries most affected by the Ebola outbreak.

The drug is favipiravir, an antiviral drug produced by Japan's Toyama Chemical of the Fujifilm Group, sold under the brand Avigan in Japan. The French National Institute of Health and Medical Research, or INSERM, led the trial of favipiravir at an Ebola treatment center in Guéckédou, Guinea.

Researchers have discovered that the drug, which stops the virus' ability to duplicate itself, seems to have lessen the mortality rate — from 30 percent to 15 percent — in patients with low to moderate levels of Ebola virus in their blood. Unfortunately, it had no effect on patients with higher levels of the virus. These are the patients who are more likely to die.

Details of the initial results have not yet been announced as of February 2015 although the drug has had good results against Ebola in animal studies and good safety results in humans. Since the drug has never been used for studies in humans against the disease, the researchers have to wait for the entire comprehensive results of the trial before declaring favipiravir an authorized treatment for Ebola and make it accessible to all Ebola patients in different affected countries.

The results from favipiravir are based on an analysis of 69 patients older than 14 who are part of the study at two sites in Guinea since December 2014. Dr. Xavier Anglaret, lead investigator of the favipiravir trial in Guinea,

Scientists clear mismatched data on sea level rise

A GROUP of scientists led by Carling Hay of Harvard University has reconciled previous data of sea level rise from the period 1901-1990 as recorded by two methods of calculation: via tide gauges and by determining how much water from melting glaciers and ice sheet flows out into the ocean. The latter also takes into account the concept of thermal expansion or how much cold water expands when it warms.

According to tide gauge estimations, ocean levels climbed by 1.6 to 1.9 millimeters (0.063 to 0.075 inch) per year during the period 1901 to 1990. However, calculations from glacial melt and thermal expansion indicated that the spike was recorded at only 1.2 millimeters a year in the same period. Obviously, their numbers don't agree.

Upon close examination of the issue, Hay's team uncovered the real problem: the tide gauges.

First of all, there weren't many tide gauges installed 25 years ago so data was not collected in many parts.

Second, many of these tide gauges were placed along coastlines where sea levels differ from those in the open ocean. Because the ocean is not flat, water can accumulate too much in one part of the ocean; while in another part of the ocean, water level may be low. Certain factors like tides, waves, and ocean currents, also play a part in this scenario.

Also, most tide gauges before 1990 were in the Northern Hemisphere. Ocean currents and the number of mountain glaciers differ in the Southern and Northern Hemispheres.

To rectify the error, Hay's team created an algorithm. "There are always new techniques for analyzing old data. And sometimes new data become available," she said.

The algorithm calculated that sea-level rise from 1901 to 1990 was about 1.2 millimeters – similar to the data calculated from melting glaciers and thermal expansion.

The algorithm result also showed that previously recorded data of sea level rise from 1993-2010 – an average of 3-millimeter-per-year increase – needed no adjustment as that required by data for the 1901-1990 period. Aside from the fact that more tide gauges were in use during this time, scientists had also started using satellite measurements which are accurate, thus leaving no room for mismatched figures.

Stefan Rahmstorf of the Potsdam Institute for Climate Impact Research in Germany noted that the important thing to realize is that all calculations now agree on one thing: that in the past 20 years, sea level has been increasing at the highest rate on record – certainly a reflection of climate change.

Sources:
http://nca2014.globalchange.gov/report/our-changing-climate/sea-level-rise
https://student.societyforscience.org/article/fast-sea-level-rise-very-recent-change

www.greenpeace.org.

said that as of February 3, 2015, the favipiravir trial had admitted 101 patients throughout the study.

The drug is expected to be most effective in patients receiving it within two to three days of accumulation of Ebola virus symptoms, similar to antiviral treatments for influenza. However, most participants of the trial arrived at the Ebola treatment units later in their illness, about five days after their symptoms began, so results were analyzed instead in terms of the estimated amount of virus in the blood of the patient.

Fujifilm has further announced that it will continue to produce more doses of faviripavir for the clinical trial. It has also provided the

treatment on an emergency basis to other Ebola-hit areas within and outside West Africa.

As of February 10, 2015, WHO and respective governments of affected countries have recorded 23, 034 suspected Ebola-related cases and 9,268 fatalities. The patients are continuously being monitored and given possible treatments to prevent further transmission of casualty of the disease.

Source:
http://www.nytimes.com/2015/02/05/science/ebola-drug-has-encouraging-early-results-and-questions-follow.html?ref=science&_r=0

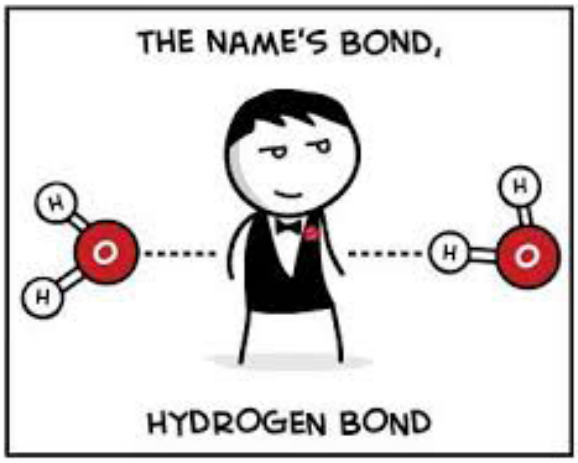
I'm reading a great book on anti-gravity. I can't put it down.

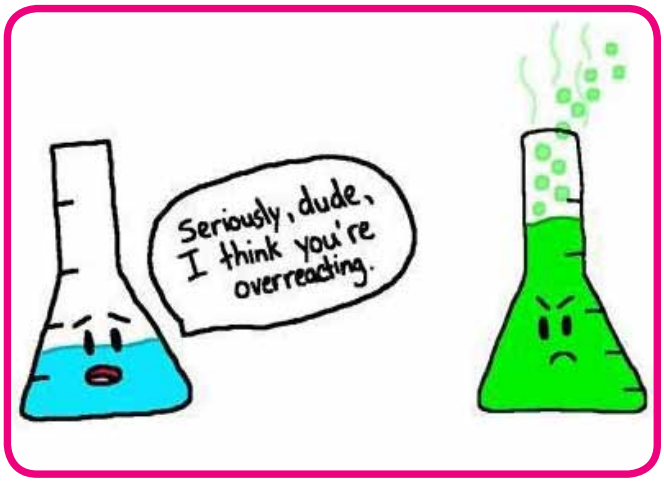
Why can't atheists solve exponential equations? Because they don't believe in higher powers.

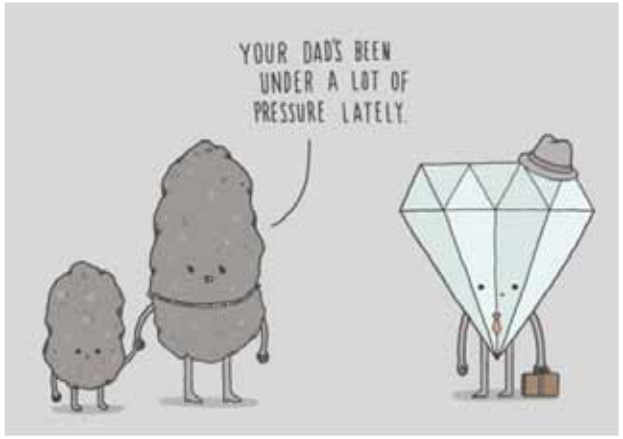
What does a subatomic duck say? Quark!

A neutron walks into a bar and asks how much for a beer. Bartender replies "For you, no charge".

Source: http://www.iflscience.com/physics/10-science-jokes-nerds







March 14, 2015 - 9:26:53
WILL BE EPIC.
Why?

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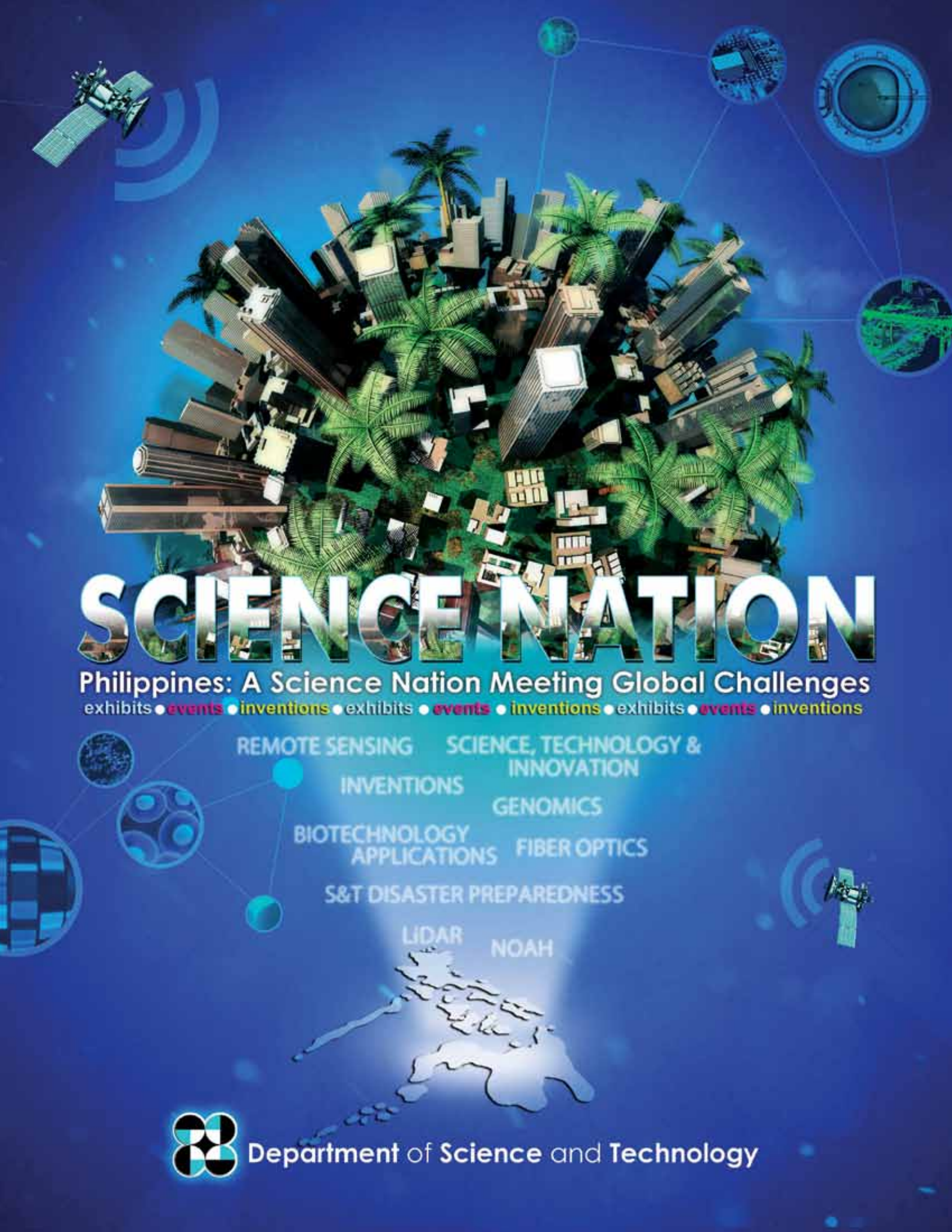
"French fries are delicious," quipped Dr. William G. Padolina, they keynote speaker during the press conference of the National Biotechnology Week in La Breza Hotel, Quezon City. All participants nodded in agreement as they munched on the crispy fries served as light snacks. "But did you know that they contain a certain chemical that causes cancer?" The question may have temporarily stopped the audience from reaching for their next munchies, but felt relieved when Dr. Padolina announced that new researches have shown that potato products can be genetically modified to reduce the levels of this chemical compound linked to cancer. He then discussed the science of biotechnology and the latest developments in the field. Dr. Padolina, former DOST Secretary and Deputy Director General for Operations and Support Services International Rice Research Institute, is also the current President of the National Academy of Science and Technology.

YET ANOTHER DREAM AWARD COME TRUE. The Department of Science and Technology's (DOST) 3D mapping project called Disaster Risk Assessment, Exposure and Mitigation-Light Ranging and Detection Technology (DREAM-LiDAR) received the prestigious Asia Geospatial Excellence Award during the Inaugural Ceremony of the Asia Geospatial Forum 2014 held in Jakarta, Indonesia last Nov. 25. A component of the Nationwide Operational Assessment for Hazards (Project NOAH), the DREAM-LiDAR addresses and helps mitigate the effects of flooding disasters in the country by collecting precise geospatial data using LiDAR technology to more accurate flood inundation maps. The project is led by Dr. Eric C. Paringit (right) of the University of the Philippines Diliman who received the award with DOST Asst. Secretary Raymund E. Liboro (center). Also in photo is Fidel R. Nemenzo of UP Diliman. (S&T Media Service)

TWO-TIME BENEFICIARY OF DOST'S SETUP. Guaranfood Manufacturing Corporation in San Pablo City, Laguna, is one of the Department of Science and Technology's (DOST) SETUP re-availers. SETUP (Small Enterprise Technology Upgrade Program) assists small enterprises via equipment upgrade, training, and loan assistance. Manufacturer of dressings, condiments, sauces, and pickles, the company has availed SETUP assistance twice: first, for the improvement of its packaging facility and second, for the improvement and upgrading of its equipment. Among the equipment acquired under SETUP were a stainless steam jacketed kettle, form-fill seal sachet packaging machine, and product printer. These have increased Guaranfood's production capacity for sauce production, improved production process and product quality, and minimized bottleneck and machine downtimes. Photo shows Hon. Angelica Jones B. Alarva, former actress and board member of Laguna's third district, during a recent store visit with DOST regional office representatives. (S&T Media Service)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