

S&T

FIRST QUARTER 2012

POST



The POST *turns* XXX

Lily: From menace
to money

Tropical fabrics
on the catwalk

Ignite the Mind 2.0
fires up DOST family

Searching
science.ph



Lessons from the past give a vision of the future

Great people never forget. True, a number of them have given us guiding lessons lest we have already forgotten. The celebrated Roman philosopher Cicero left us the immortal quote “History is the witness that testifies to the passing of time; it illuminates reality, vitalizes memory, provides guidance in daily life, and brings us tidings of antiquity.”

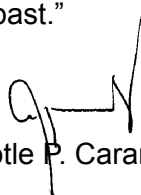
It is for this reason that the editorial team of the S&T Post highlights in this 30th anniversary issue the years that bore witness to the publication. It is also for the same reason that a section of this issue is devoted to what will be part of DOST’s immediate future.

The first quarter issue for 2012 shares with the readers how S&T Post has evolved through the years. The readers will have a sneak peek on the evolution of the publication as shown through photos. This issue’s cover shows the transformations of the publication. Thanks to the library of the Science and Technology Information Institute or STII, these treasures have been well preserved – now museum pieces.

Now in its Volume 30 Issue No. 1, the S&T Post comes out with a different look. It boldly welcomes big changes not only with the use of new material and bold layout but also with the stories that have been carefully selected to feature the “real deal” within the Philippine science community especially the Department of Science and Technology.

Stories on technologies, discoveries, programs and projects tell of their socio-economic benefits for the individual Filipinos or for the entire nation in a manner that the message can be understood, appreciated, and applied. The magazine still maintains its regular sections on news and feature stories but a special section in this issue is devoted specifically to disaster-related stories. Once again, the old and the new form a wonderful collection of colorful stories – science stories that truly serve a human purpose.

Befittingly, an ending should be another quote from another famous personality – Sigmund Freud who said once in his lifetime, “Only a good-for-nothing is not interested in his past.”



Aristotle P. Carandang

Editorial Board

RAYMUND E. LIBORO

Publication Director

ARISTOTLE P. CARANDANG

Executive Editor

FRAMELIA V. ANONAS

Editor-in-Chief

JAMES B. INTIA

Layout & Graphics

DOST MEDIA CORE

Contributing Writers

JOY M. LAZCANO

Editorial Assistant

AUDIO-VISUAL UNIT

Photography

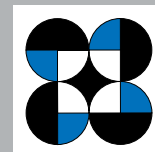
MARIA JUDITH L. SABLAN

MARIA LUISA S. LUMIOAN

Proofreaders

FERDINAND D. CARTAS

Circulation



The S&T Post is published quarterly by the Science and Technology Information Institute- Department of Science and Technology (STII-DOST) with editorial office at DOST Complex, Gen. Santos Avenue, Bicutan, Taguig City.

Telefax: (02) 837-7520
Tel No.: (02) 837-2071 to 80 local 2148

Email: dost_stii@yahoo.com;
stpost@dost.gov.ph

Visit:
www.stii.dost.gov.ph
www.science.ph

Like us on Facebook





Team Time

FILIPINO TIME IS ON TIME



S&T POST



- 2** Table of Contents
- 4** From menace to money: DOST's action to the dreaded water hyacinth
- 7** Unclogging the waterways through DOST's water hyacinth harvester
- 8** tech•new•logy
 - Fossilized leaves as unique gift item
 - Immersion freezer
 - Atis mosquito repellent
 - REDAS software
 - Bamboo flattening machine
- 10** Low batt? Drop your coin here to charge your phone
- 11** Tropical fabrics on the catwalk
- 16** Casablanca Wines: A blend of virtuosity and technology
- 18** A colorful sea forest in Leyte
- 20** From I to XXX: Looking back and moving forward
- 22** Disaster Preparedness
 - DOST-Phivolcs to install new strong motion sensors
 - DOST announces its national flood management program
 - Quicker response to metro flooding
 - DOST-Smart-Sun work together to improve monitoring of disaster
- 24** Health and Nutrition
 - DOST project brings more hope, less side-effect to cancer patients
 - Eat low-GI foods, vegetables to avoid cancer, says DOST-FNRI
 - Tuklas Lunas Centers to spur health R&D in the regions
 - DOST develops Philippine Health Registry
 - Root crops keep bad cholesterol down, DOST study says



OUR COVER

S&T Post's maiden issue, then called "NSTA Post", and the various versions that came after, get to the front page to give our readers a historical view of where we started 30 years ago as a science publication. Between then and now, the Philippine society has gone through many changes which are aptly reflected in the changing look and format of the S&T Post.



26 Industry

- DOST to offer business incubation services in provinces
- DOST eyes prospects for abaca industry
- DOST's Technomart says "aloha" to Hawaiian market
- Top cities to locate BPO operation in the Philippines
- PH can be global leader in healthcare BPO this year, says ICTO exec

28 Awards & Recognitions

- PNRI expert is Dangal ng Bayan awardee
- DOST offices conferred the Philippine Quality Award
- PNRI research specialists win silver and gold award in agri research

**30 DOST-TAPI to hold national invention contest
National Invention Contest requirements and mechanics
National Invention Contest Finalists**

36 STII 25th Anniversary

- First S&T search engine in the country launched
- DOST awards outstanding science journalists
- Winners of the 2012 DOST-Wide Photo Contest

38 Ignite the Mind 2.0 fires up the DOST family

40 Vox populi

42 News in Photos

From menace to money:

DOST's action to the

By **ARIJAY ESCONDO** and **GEORGE ROBERT E. VALENCIA III**
S&T Media Service, *STII*

While DOST designed the water hyacinth harvester to collect and reduce free-floating water hyacinths in navigable waterways, it also developed several technologies to convert collected water hyacinth into useful products.



dreaded water hyacinth

In the face of today's economic stress where the costs of basic resources are now beyond ordinary people's reach, more and more communities are looking for alternatives to make ends meet.

Water hyacinth, which is seen as a nuisance and combated at huge economic costs to resource-poor economies, may well become the cornerstone of raw-material production to the growing industries.

The Problem

Few weeds around the world have caused negative effect on human life as that of the water hyacinth plant. One of the fastest reproducing plant species, the plant is infamous for drifting troubles to communities – flood by clogging irrigations and water systems, depleting entire water reservoirs, causing damage to fishing activities, reducing biodiversity, hosting vectors or disease-carrying





Water hyacinth gathered by the harvester.



The harvester gets to work.

organisms, and hindering water transport. Native to South America, water hyacinths (also locally known as “water lilies”) have massively proliferated in other parts of the world like China, Kenya, and the Philippines and have long been considered a bio-disaster in these countries.

The Liguasan Marsh in Central Mindanao, Pasig River in Metro Manila and Laguna Lake are among the country’s hyacinth-infested waterways. Meanwhile, the Laguna Lake Development Authority (LLDA) estimates that the pest covers at least ten percent of Laguna de Bay, which may increase if the problem remained unaddressed.

The Solution

Answering this debacle is the Department of Science and Technology’s (DOST) water hyacinth harvester. Part of the DOST’s High Impact Technology

Solutions (HITS), the harvester was created through the collaborative efforts of three agencies—the Metals Industry Research and Development Center (MIRDC), the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD), and the Project Management Engineering and Design Service Office (PMEDSO).

The harvester is a small-sized vessel that mechanically collects free-floating water hyacinth in navigable waterways. It gathers hyacinths through three linked conveyors made of rotating plastics that move materials and mounted at the front, middle and rear of the equipment. The front conveyor is dipped under the water surface at a certain angle, which allows the machine to collect whole pieces of hyacinth. The middle conveyor, on the other hand, serves as temporary storage for the harvested plants. The rear conveyor, meanwhile, discharges the contents to an external barge or a dumping site when the container is full.

The front side of the harvester also has built-in cutters to avoid being entangled by plants when harvesting. The storage area can hold about 4.2 cubic meters or 50 kilograms of water hyacinth per load. The harvester can travel at 3 km/hour through two paddle wheels. All its mechanisms, meanwhile, are hydraulically powered and individually controlled. It is easy to maneuver, very stable on water, and requires only one person to operate.

It gets better

While the harvester was designed to collect and reduce free-floating water hyacinths in navigable waterways, the DOST developed several technologies to convert collected water hyacinth into useful products.

As Handicraft. Many families in coastal areas, especially in Laguna Lake, are now making a living using water hyacinth. Through the collaborative efforts of Department of Trade and Industry, NGOs and cooperatives, local government units, and DOST’s Forest Products Research and Development Institute (DOST-FPRDI), people are making varied handmade products such as bags, baskets using dried water hyacinth stems.

According to to FPRDI’s Director Romulo Aggangan, “The secret to a good product is to ensure that the stems are properly dried.” Improper drying would cause to product to rot due to moisture, he added.

FPRDI has been training various groups near Laguna Lake on the proper way to dry and treat hyacinths with preservatives in order to protect them from insects and molds.

The agency too had developed a dryer for water hyacinth stalks. Compared with the traditional solar drying techniques, the FPRDI-developed dryer can shorten drying time from several days to only a few hours. This means that handicrafts producers can dry their products even during rainy season.

With the increasing environmental awareness in the market, water hyacinth is becoming a trend in the handicraft business due to its natural fiber. Dried water hyacinth stems are now used to make bags, sandals, mats, home decors, and others, not only for local consumption but also for export.

Unclogging the waterways through DOST's water hyacinth harvester

By JANET ROSALIE ANNE H. POLITA
S&T Media Service, PCIEERD

THE DEPARTMENT of Science and Technology (DOST) has developed a mechanical harvester as part of the government's efforts to control the quick spread of water hyacinth in the country's waterways.

The water hyacinth is a fast-growing aquatic plant infamous for clogging water systems and hindering water transport.

DOST Secretary Mario G. Montejo said that the harvester was developed as one solution to unclog waterways of water hyacinth. This is to avoid a similar incident in Cotabato City, wherein the Rio de Grande Mindanao overflowed due to accumulation of the aquatic weed, thus causing massive flooding.

"Local scientists and engineers built the harvester to suit Philippine conditions," said Sec. Montejo during the recent media launch of the harvester. "We also partnered with the private sector to fabricate the harvester and to provide the necessary equipment and materials."

Harvesting 50kgs of water hyacinth per minute

A team of engineers and experts from the DOST's Project Management and Engineering Design Service Office and Metals Industry Research and Development Center (MIRDC) developed the harvester.

Project Leader Lemuel Apusaga from MIRDC explained that the harvester can travel at a speed of three kilometers per hour, and has a carrying capacity of 4.2 cubic meters, which is equivalent to around 50 kg of water hyacinth harvesting rate.

Taguig City Mayor Lani Cayetano lauded the developers of the water hyacinth harvester. "I am in awe and very happy to learn that young engineers have developed this equipment. We can truly be proud of Filipinos for the intelligence and hardwork they display," she added.

The harvester has been tested in one of the pumping stations of the Metropolitan Manila Development Authority (MMDA) in Taguig City where water hyacinth thrives. The harvester is also docked in said area.

"We are grateful to MMDA for being our partner in this project," Sec. Montejo said. "We hope that the harvester would be able to assist in the better management and control of water hyacinth in most of our river systems," he added.

MMDA General Manager Corazon T. Jimenez said that the water hyacinth harvester would be a good substitute for backhoe or barge, which is normally the equipment being used by the MMDA to harvest water hyacinth. "We will continue coordinating with DOST to discuss the requirements needed by our local government units," she said.

Exploring other applications of water hyacinth

Meanwhile, the DOST's Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD), the funding and monitoring agency for the harvester project, is exploring potential applications of water hyacinth.

Exec. Dir. Guevara said that the Council is working with other DOST agencies to better manage water hyacinth, and to explore the potential uses of this plant as raw material for the manufacture of clothing and handicrafts.

"As a readily available resource, water hyacinth can be used as a substrate for biogas production," said PCIEERD Executive Director Amelia P. Guevara. "It can also be processed to generate vermicompost in large quantities."

DOST-PCIEERD is the country's lead agency in the research and development for the industry, energy and emerging technology sectors.



Water hyacinth handicraft business opportunities are in bloom, spurred by multi-sector partnerships, to the benefit of the small and medium enterprises. Additional institutional support such as research grants, promotion of existing technology on using water hyacinth, and capacity building for potential operators of the industry could create a colorful bouquet of employment and economic opportunities.

As Fabric. Researchers from the DOST's Philippine Textile Research Institute (DOST-PTRI) found water hyacinth as viable raw material for fabric.

Its fibers are comparable with those of piña's and when blended with other fabrics, hyacinth fibers are quite versatile. It has gained high acceptability when used to create various types of apparel— from casual to corporate and even high-fashion wears. DOST-PTRI recently held a grand fashion show introducing the newly-developed Philippine tropical fabrics, including hyacinth, to the metro's executives, fashionistas, and stakeholders of the textile industry.

As Geotextile. DOST-PTRI researchers have also explored water hyacinth's potential as an alternative source of

geotextiles. The stalks have been processed to create rope-like materials comparable with cocofiber nets that are used to combat soil erosion on slopes and to improve road quality. Further studies will establish the effectiveness of water hyacinth geotextiles.

As Animal Feed. Many studies have shown that water hyacinth contains nutrients that are important to livestock. Backyard farmers in the countryside actually use water hyacinth as supplemental feeds for pigs and ducks. Studies by the DOST through PCAARRD are underway to test the efficiency of water hyacinth ensilage as high protein diet for animals.

Fossilized leaves as unique gift item

By ALLAN ACE ACLAN
S&T Media Service, STII

FILIPINOS ARE quite adventurous in their choices of gifts, so why don't we try an innovative and not so expensive gift of fossilized leaves?

A leaf is comprised of a breathtaking complex of very, very fine veins. Their intricate patterns can rival those of expensive laces. Leaf skeletons are commonly found as fossils, although fully complete specimens are rather rare. Some fossil leaves have unique shapes and structures that are quite different from those existing today.



Ordinary Fossil leaves found which is used for coal deposits.



Accented Fossilized leaves made through the method of FPRDI

Fossilized or skeletonized leaves are also one of the favorite new raw materials for handmade papers which have already created a niche in the market. Thanks to the method modified by Forest Products Research and Development Institute (FPRDI), an agency of the Department of Science and Technology (DOST), fossilizing leaves is made simpler, faster, and easier.

The technology entails soaking fresh leaves in caustic soda solution. In just a few hours, caustic soda will eat away the soft tissues of the leaves, leaving the leaf skeletonized and intact. The traditional method of fossilization usually takes at least three weeks to turn fresh leaves into fossilized ones:

FPRDI, in the last eight years, has conducted training programs for almost 1,500 people on the modern technique of making fossilized leaves. Most of the trainees are housewives and out-of-school youth from various parts of the country. Entrepreneurs wanting to explore opportunities in fossilized leaves may contact DOST's Technicom Secretariat at Rm 212 DOST Central Office, Gen. Santos Ave, Bicutan, Taguig City 1631, or email technicom@dost.gov.ph or dost.technicom@gmail.com, or call (632) 837-2943.



Immersion freezer

By GEORGE ROBERT VALENCIA III
S&T Media Service, STII

As its name suggests, an immersion freezer has its contents (usually food products) submerged in cold liquid that serves as freezing agent.

Specifically designed for small and medium enterprises (SMEs), the DOST Immersion Freezer resembles a bigger-than-normal grocery chest freezer. It has a maximum volume capacity of 1000 liters and a freezing capacity of 60 kilograms per hour for ice-making.

This makes the immersion freezer more efficient equipment than a common home freezer, a regular chest freezer or an air-blast freezer. It cools faster because heat transfer is faster. The freezer is also equipped with adjustable coolant temperature settings to meet specific requirements of different food materials. There are also dividers to cool smaller amounts of product, with separate controls for each division. This makes the freezer more efficient both in cooling and power consumption.

The DOST Immersion Freezer is also competitively priced versus existing local and foreign brands. All in all, its cost-effectiveness and efficiency make it a very important tool for the country's food processing firms.

The immersion freezer is a collaborative project of DOST's Industrial Technology Development Institute and Metals Industry Research and Development Center, and the Project Management Engineering and Design Service Office (PMEDSO).



Atis mosquito repellent

By ALLAN ACE ACLAN
S&T Media Service, STII

Did you know that your favorite fruit atis or sugar apple (*Annona squamosa* L.) can actually keep dengue and malaria off?

Once only consumed as desert or snacks, the atis, through the intervention of science and technology, can be formulated into a product that helps prevent serious mosquito-related diseases.

Using the extracts of atis leaves mixed with some native available materials, Dr. Lleana Cruz and Dr. Lilian de las Llagas, both of UP Manila, developed the Atis Lotion Mosquito Repellent. It is a personal care product used in preventing mosquito bites that cause itchiness, inflammation, and discomfort. As it wards off mosquitoes, the product helps prevent mosquito-borne diseases like dengue, malaria, and filariasis especially in high-incidence areas.

This lotion uses a washable, mineral oil-based formulation and is biodegradable. As such, it is of advantage against other commercial repellents which are all chemical based.

Developed in 1998 through the assistance of the Department of Science and Technology's Philippine Council for Health Research and Development (DOST-PCHRD), the Atis Mosquito Repellent Lotion is already on pharmacy shelves marketed under two pharmaceutical companies.

Pharmaceutical companies interested with the product may visit DOST's Technicom Secretariat at Rm 212 DOST Central Office, Gen. Santos Ave, Bicutan, Taguig City 1631, or email technicom@dost.gov.ph or dost.technicom@gmail.com, or call (632) 837-2943.



Bamboo flattening machine

By ALLAN ACE ACLAN
S&T Media Service, STII

Soon, local furniture makers need not cut trees out of Philippine forests to create sturdy school desks and designer tables, researchers say.

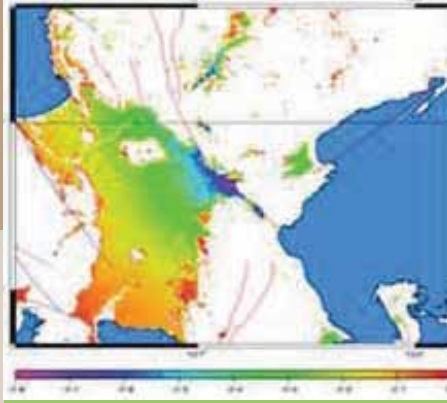
This is after the Department of Science and Technology - Forest Products Research and Development Institute (DOST-FPRDI)'s came up with the bamboo flattening machine that can flatten bamboo columns into planks and could drive growth for the local bamboo industry in the country.

Using the machine, FPRDI developed a prototype school desk from engineered bamboo, perfect for today's active students.

Engineered bamboo products are produced by binding together veneers, strands, particles, fibers, strips or slats of bamboo with a suitable adhesive to form a composite material designed to meet specific uses. Due to certain advantages in applications, engineered bamboo products may be preferred to solid wood. FPRDI is currently working on modifying the flattening process to reduce machine costs.

The team who developed the bamboo flattening machine was headed by Engineer Dante B. Pulmano. The team introduced the machine to Pampanga furniture-makers during a techno-demonstration in July 2011.

The project was funded by the DOST-TECHNICOM and monitored by the Philippine Council for Industrial Energy Research and Development (PCIEERD).



REDAS software

By ALLAN ACE ACLAN
S&T Media Service, STII

The Rapid Earthquake Damage Assessment System (REDAS) seismic hazard simulation software aims to produce hazards and risk maps quickly after strong and potentially damaging earthquakes. REDAS software can work to conduct seismic hazard and risk assessment, sort earthquake data parameters, produce map of different sizes, perform screen digitization, and develop risk database in Philippines and other Asian countries.

Developed by Bartolome C. Bautista and Maria Leonila P. Bautista of Philippine Institute of Volcanology and Seismology (PHIVOLCS) in 2004, REDAS can also serve as an effective simulation tool for decision makers and city planners. REDAS maps can be used in land use regulation, strict enforcement of the building code, and modernizing critical structures. The software was recently used by the local government of Bulacan for urban planning and development.

This seismic hazard software can be re-designed to make it commercially available. REDAS had already four local government unit adaptors.

Insurance companies and other private firms with the product may visit DOST's Technicom Secretariat at Rm212 DOST Central Office, Gen. Santos Ave, Bicutan, Taguig City 1631, or email technicom@dost.gov.ph or dost.technicom@gmail.com, or call (632) 837-2943.



Low batt?

Drop your coin here to charge your phone

By MARIA LUISA LUMIOAN
S&T Media Service, STII

Engr. Tubigan says that he owes part of the success of his enterprise to the Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI).

Ran out of batteries in the middle of an important call while away from home? No need to fret because you can charge your phone in the nearest convenience store that has i-charj.

i-charj is a digital coin operated mobile phone charger that works much like a vending machine which can now be found in major establishments in the metropolis. All you need is to drop a five-peso coin in the machine, and you can charge your phone worry-free for 10 minutes!

years. The money was used to produce 33 i-charj machines.

Prior to the loan, Xcellcomms only had 200 charger sites available and had difficulty in expansion. Now, the company has around 1,000 sites and new products, such as the i-surf, which allows one to surf the net, and the i-call, which allows one to make a call by dropping coins into the machines. The business is now ready to expand to Visayas and Mindanao.

Invention Based Enterprise Development (IBED) is just one of the programs of Invention Development Division (IDD) of TAPI. IBED supports Filipino inventors in developing their inventions into enterprise commodities to make these available to consumers. Through the program, TAPI finances the pilot production, granting inventors funds to purchase or fabricate the equipment needed to manufacture the invented technologies. TAPI also provides free consultation services to market test the product, develop the operational systems, and promote it.

Inventors who wish to avail of the program must meet the following criteria: a Filipino citizen with good moral character; in good health and not more than 60 years old or if more than 60 years old, he/she should assign a co-project implementer with equal responsibility of the project; and must have good credit standing and no outstanding obligation to TAPI.

The program also requires that the business already started with the invention as the main product line, the company is Filipino-owned and registered in the Philippines, the invention must already be patented, and there should be a working commercial model for the invention as basis for production.

Interested inventors must submit their application letter to DOST-TAPI together with certified true copy of Letters Patent, business plan, plan layout and process flow of production process, business registration and breakdown of budgetary requirements.



For every five pesos, i-charj lets you charge your mobile phone for 10 minutes. The digital coin operated mobile charger can be found in major establishments in Metro Manila. *Photo courtesy of Xcellcomms.*

The digital coin operated mobile phone charger is a product of Xcellcomms Enterprises which is into electronics manufacturing, inventions and innovative products. Engr. Aquilino A. Tubigan, Jr., manager and proprietor of Xcellcomms, invented i-charj which won him the Gold Medal for Telecommunications in the 2008 Invention and New Products Exposition.

Engr. Tubigan says that he owes part of the success of his enterprise to the Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI). Xcellcomms availed of a loan from TAPI under the Invention Based Enterprise Development Program amounting to P 570,000 payable in three



Tropical fabrics on the catwalk

By GEORGE ROBERT VALENCIA III
S&T Media Service, STII
Photos by Henry A. de Leon and Framelia V. Anonas

“The clothes are surprisingly light and comfortable. I love their feel. I am really not a fan of barong but these (barongs) are stylish, unique and perfect for those who want to be fashionistas for a change”

-Miguel Marasigan
Model

Elegant, trendy and chic—these just some of the adjectives thrown at the Philippine tropical fabric (PTF) outfits modeled at the recently held Bagong Habi, Salinlahi: Cutting Edge Philippine Textiles fashion show at the InterContinental Manila. Among the audience were executives, fashion designers and stakeholders of the textile industry who were dazzled at the seeming metamorphosis of indigenous fabrics into classy, eco-friendly fashion pieces.

Spearheaded by the country’s lead textile research and development agency, the Philippine Textile Research Institute of the Department of Science and Technology (DOST-PTRI), Bagong Habi: Salinlahi launched fabrics made of native Philippine



One of New York-based fashion designer Anthony Cruz Legarda's modern-day wedding collection. This bridal dress is made from pineapple-silk fabric and embroidered with silk and *saluyot* threads.

The cocktail dress collection by designer Curitthy Joy Manzanero is inspired by 50s and 60s fashion and plays around the idea of Wearable Passion for Earth and Society. The dresses are cut from powerloom and hand-woven Philippine Tropical Fabrics made out of blends of abaca, *saluyot*, water hyacinth, pineapple and maguey fibers naturally dyed using cogon, annatto, coconut husk, and talisay.



plants such as piña, abaca, and banana. The real revelation, meanwhile, was the introduction of newly-developed fabrics made from water hyacinth, *saluyot*, and maguey. All garments were dyed using natural plant sources, namely: mayana, guava, mahogany, achuete, indigo, talisay, and coconut husk.

The featured designers showcased a wide array of stylish garments created from tropical fabrics—from cocktail dresses to office uniforms, bridal pieces, and casual to formal wear for men and women. Special ethnic fabrics from different parts of the country were also incorporated in several designs to pay tribute to local craftsmanship and culture, namely abel of Ilocos, piña and jusi of Aklan, hablon of Iloilo, and inaul of Maguindanao.

Excitement filled the grand ballroom as models flaunted their attires individually on the runway with accompanying Filipino music of various rhythms, beats and genres. Meanwhile, through audio-visual presentations, the audience learned of DOST-PTRI's step-by-step processes in manufacturing various tropical fibers and natural dyes.

Among the designers of the fashion collection were Bon Gavino-Gautier, chair of the Uniform Manufacturers Organization and Designers Association (UNIMODA), Jamie Espadilla of The Jaime Collection, Curitthy Manzanero of Shelmed Cottage Industries, and designers Frencky Bancifra and Evizer Gabay of the Piña Shop.

According to Anthony Cruz Legarda, featured designer based in New York and the fashion show's creative director, "Bagong Habi: Salinlahi is all about making new, innovative and world-class textiles and a showcase of designs for different facets of life. It is synergistic—it was made possible through the collaboration of individuals who are passionate about our own culture, natural resources, and great talent in manufacturing."

"Bagong Habi: Salinlahi aims to iron out all misconstrued perceptions



towards indigenous fabrics that they are impractical, itchy, uncomfortable and drab,” said DOST-PTRI director Dr. Carlos Tomboc.

Meanwhile, according to Ms. Nora Mangalindan, R&D Team Head at DOST-PTRI, the tropical fabrics used by the designers in their collections were enzyme-treated to eliminate their itchiness. The fabrics, in addition, are no longer stiff, have a softer drape, and can easily comply with any design. Washing will be easier, too, as they no longer require dry-cleaning.

“The clothes are surprisingly light and comfortable. I love their feel. I am really not a fan of barong but these (barongs) are stylish, unique and perfect for those who want to be fashionistas for a change,” said Miguel Masigan, one of the night’s models.

“They are very comfortable, trendy, and not itchy. I feel good wearing them. It is so like me,” quipped Veronica De Castro, another model.

Philippine tropical fabrics seize the limelight in the recent Bagong Habi, Salinlahi: Cutting Edge Philippine Textiles fashion show by the Philippine Textile Research Institute of the Department of Science and Technology (DOST-PTRI). Held at the InterContinental Hotel Manila, the fashion show featured DOST-PTRI-developed fabrics, such as water hyacinth, saluyot, maguey, piña, banana and abaca styled into classy and elegant pieces by young and talented Filipino designers. The fabrics were naturally-dyed using native plant sources. They were also enzyme-treated for comfort and a softer drape.



This barong is made of hand-woven fabrics from pineapple, *saluyot* and water hyacinth. It is also naturally-dyed and embellished with hand embroideries.

Another modern-day outfit by Legarda, this long coat is made of opaque piña-seda that is naturally dyed with indigo, with matching striped piña seda fabric tie to complete the get up.

This two-piece attire for men is another Legarda creation. Top is a coat made of striped piña-seda, with partnering skirt also made from piña-seda fabric. Both were naturally dyed with indigo.





The Jaime Collection (TJC) of designer Jaime Ann Marie Espadilla beheld trendy-smart casuals apparels made from a combination of neo-ethnic handwoven fabrics and powerloom woven Philippine Tropical Fabrics made from blends of *saluyot*, water hyacinth, pineapple and maguey fibers that are naturally dyed. Most of the garbs showcased had matching shoes and bags from handwoven fabrics.



The Piña Shop by designers Frenzy Bancifra and Evizer Gabay revealed an array of knitweares made from cotton and pineapple to *saluyot* and water hyacinth. The collection ranged from casual, chic to cocktail dresses and gowns for female and shirts, cardigans, jackets and pants for male.



Legarda's ladies dress is made of plaid piña-seda fabric with *saluyot* threads and matching shoes.



Casablanca Wines

A blend of virtuosity and technology



By JENNIFER S. RIMANDO
S&T Media Service, DOST-I

The Ilocos region is well known for its basi, a fermented alcoholic beverage made from sugarcane. Considered by many as the “King of Native Wines,” basi is the pride of Ilocanos. Accounts have it that even before the Spanish colonizers came to the country, Filipinos were already drinkers of native wines, one of which is basi.

La Union is one of Ilocos region’s makers of the pale red wine. While Naguilian town is the basi capital of the province, Bacnotan town prides itself of Casablanca, its own version of basi.

Demetrio E. Fontanilla, a government retiree (Department of Agriculture), was bold enough to venture into basi-making and start a business using sugar cane, a common crop in his place. Making valuable use of his supposed idle time after retirement, he turned a large area of his family’s agricultural land into a sugar cane plantation to sustain his basi

business. Colleagues encouraged him to formalize his business, and so, in 2002, Union Agridyne Products was officially born.

The Winery

As Mang Demetrio himself put it, the production of Casablanca is undeniably wanting in facilities and equipment. Serious commercialization demands a huge investment to cover technical requirements. Technical experts in the field of wine-making plus the necessary facilities and instruments in basi production, are must-haves, according to Mang Demetrio, who single-handedly runs his business.

Mang Demetrio’s spacious yard has all the needed equipment and processes in his basi production. Although a far cry from the sophisticated wineries of its counterparts, the Casablanca-maker

suffices with his version of a laboratory and oak barrels. A separate structure stands as wine cellar and laboratory where jugs containing cooked sugar cane juice are stored to ferment. These serve as backup containers to the earthen jars outside the facility. Big plastic containers for vinegar, the twin-product of basi, also dot the outside area.

Lacking in many things his basi business may be, Mang Demetrio never ran out of resolve to keep on producing the purplish liquor. His dream of acquiring modern facilities for basi production has sustained him through years of producing Casablanca.

DOST: ‘Genie’ in a Jar

It seems the heavens read Mang Demetrio’s wish list for the Department of Science and Technology (DOST) entered the picture just in time.

Casablanca...is a master work borne of the bond of a connoisseur's skillful concoction and the gutsy, flowing support of a patron that is DOST.

After its official registration as a business entity in 2002, Casablanca was awarded with a P200,000 grant, refundable in three years with zero interest, under the Small Enterprise Upgrading Program (SETUP) of the DOST. With the much-needed capital, Mr. Fontanilla was able to buy equipment for his wine production, namely pH meter (to measure the acidity levels of the vinegar), a motorized milling machine, and a bottle cap sealer. DOST took care of Casablanca's package and label designs. Aside from these, Mang Demetrio also went through DOST's training programs. These interventions were delivered to Casablanca's doorsteps through DOST La Union headed by Dr. Ismael Gurtiza.

DOST's technical assistance introduced to Mang Demetrio more possibilities and brighter ideas to enhance his entrepreneurial skills and to improve the quality of Casablanca.

Generations of Fontanillas have perfected the art of basi-making. Now Mang Demetrio, using time-honored secret ingredients and procedures of the past, fused it with the technology of the present. He still ages his wine in earthen jars called burnay in Iloko, flavoring it with the standards his family had perfected all these years.

Now Mang Demetrio is looking at the bigger picture. He knows that Casablanca as a business will grow with the right marketing strategy, enough capital, and additional technological help

the jackpot and realize his dream, with DOST's assistance, of course.

Somehow Mang Demetrio desires this not just for his family but for the community. In fact, he has contributed to generating jobs in his place. His sugarcane plantation has offered income opportunities to his neighbors and he hopes to help some more. With the backing of DOST, his dream is taking shape.

Jobs were created because of the family's love affair with the basi. Imagine what result it would bring if he gets a bigger lab and oak barrels. With DOST as Casablanca's "genie in a bottle," who knows, Mang Demetrio's aspirations may only be a wish away. Such an intoxicating thought to consider but it is Mang Demetrio's overarching dream to make Casablanca a household name that the people of La Union would be undoubtedly proud of.

Casablanca is not like any bottled alcoholic beverage in the market today, Mang Demetrio claims. It is a masterwork borne of the bond of a connoisseur's skills and the unfailing assistance of a patron that is DOST. Now that's something to cheer about.

from the DOST. He dreams of selling his merchandise in the mainstream business, targeting a larger market. For now, his basi is bought and known only to loyal patrons who have come to be familiar with the produce by word of mouth passed on by one satisfied customer to another. Often, people come to his shop to order by bulk while some would buy a bottle for the price of P120 each. Home-made wines and liquors are hard to find these days, and buyers are just too happy to have the famed Casablanca at hand.

Annually, his winery produces about 150,000 liters of the sweet brew. Like any virtuoso, Mang Demetrio wants to hit it big. He dreams of competing with the best, particularly the Big Three of the liquors and spirits industry. But to be more competitive, he knows he must first improve and enhance his technical side. He needs a bigger lab, oak barrels for aging his wine, technical people who knows the works and definitely some added capital. For now, he knows that if he plays his cards right, he might just hit



Top: DOST-SETUP granted this bottle cap sealer.
Bottom: Wine is fermented in clay jars called "burnay."

Economically, sea forest is an indicator of a richer fishing ground for commercial fish species.

A colorful sea forest in Leyte

By DR. PACIENTE CORDERO

Recent explorations and assessments on the marine resources of Northeastern Leyte Island, including DOST-NRCP's Funded Project No. E-211, have revealed interesting information on animal and plant biodiversity and biomass in the coastal towns and barangays bordering Leyte Gulf. The Gulf, scene of one of WW II fiercely fought naval battles in Philippines, includes part of Northeastern Leyte and Southwestern Samar islands. Of the 17 coastal towns surveyed, Leyte Province's southernmost town of Abuyog has the most peculiar marine floral vegetation, favored by the effects of the ecological factors of the Pacific Ocean.

The Leyte Gulf sea forest

The extensive coastline of Abuyog Town, extending to the Sogod Municipality, Province of Southern Leyte, has at least four coastal barangays with biodiversely rich marine algal vegetation of green, brown, and red species. Very dominant are about three or four *Sargassum* species, roughly 1.5 to 2 meters tall on the average and anchored to sunken rock bottom, an extension from the upper littoral or intertidal zone down to the deeper sublittoral or subtidal zone. *Sargassum*, the largest seaweed found in Philippine waters, is similar to the kelps in the colder waters that comprise the sea jungle in countries like Japan, USA, and others. Kelps are composed of the large brown seaweeds like *Laminaria*, *Alaria*, *Undaria*, *Ecklonia*, all of Japan's sea jungle, and the longest brown seaweed species of *Macrocystis* and *Nereocytis* of the US California sea jungle.

The Leyte Gulf sea forest is most prominent in the four coastal barangays of Abuyog, namely: Bagacay, San Francisco, Tib-o, and Malaguicay. The forest area, roughly three to five kilometers stretch of predominantly rocky shoreline, is a vibrant and colorful mix of greens (*Neomeris*, *Halicoryne*, *Halimeda*, and *Ulva*), browns (*Padina*, *Dictyota*, stunted *Turbinaria*, *Cystoseira* and *Sargassum*), and red coralline algae, bright red growth of *Microcladia*, *Desmia*, *Laurencia*, *Ahmfeltia*, *Gymnogongrus*, stunted *Gelidiella*, *Gelidium*, and *Liagora*, and others. These bright hues compose the marine algae populating the intertidal zone. In the upper to mid-littoral zone are prominently inhabited by the colonial green *Halicoryne*, brown *Padina*, and stunted *Sargassum*. About four species of *Sargassum* are taller and they live near the subtidal/sublittoral zone. Meanwhile, various species of marine algae grow on the sandy bottom, forming undergrowths along with patches of sea grasses (*Enhalus*, *Cymodium*, and *Thalassia*).

Sea forest in the making

Another potential sea forest dominated by tall growths of *Sargassum* species is located in San Bernardino Strait, between the provinces of Northern Samar and Sorsogon. Considering the economic potentials of *Sargassum* this sea-forest component is worth exploring. It can be used



Macrocyctis



Dictyota dichotoma



Microcladia



Sargassum

as human food, animal fodder, source of iodine, and others. When the species are identified and the biomass determined, seaweed-based livelihood opportunities will be on the way.

Sea forest and sea jungle

Technically, the terms “sea forest” and “sea jungle” are identical. But this writer observed that the Japanese call as “sea jungle” those areas thickly populated by the large kelps *Alaria*, *Ecklonia*, *Laminaria*, and *Undaria*. The undergrowths of these areas are mainly cold water species of grasses like *Zostera* and *Phyllospadix*, with a few marine algae growing along.

In the Philippines, about four species of the dominant genus *Sargassum* of Family Sargassaceae crowd a wide area under the sea, such as in the southern coastal barangays of Abuyog. This number prompted experts to call the seaweed population as a “sea forest.” *Sargassum* is complemented by the not-so-tall species of *Cystoseira* (*Hormophysa*) and *Turbinaria*. Another variation from the sea jungle are the tropical species of marine algae and sea grass species of *Enhalus*, *Cymodium*, and *Thalassia* forming undergrowths in the Leyte Gulf’s sea forest.

The advantage of having sea forests

There are biological and economic advantages in having sea forests. The coarser seaweed species in a sea forest serve as an ideal spawning ground for fish which lay eggs on the leaf-like parts of *Sargassum*. The seaweed provides shelter for the fingerlings until their adolescent age.

The thallus or plant body of *Sargassum* gets separated from its root-like parts after the reproductive season, or it

may hold fast mechanically or by wave action. It stays afloat and drifts with the current direction, forming the “floating seaweed flora.” Along with the thick mass of seaweeds are unhatched fish eggs attached on the leaves. Meanwhile, some larger species of fish grow by floating with the drifting *Sargassum*. The floating seaweeds, carried by the cascading waves, are oftentimes collected as beach-drift materials.

Economically, sea forest is an indicator of a richer fishing ground for commercial fish species. *Sargassum* itself could provide food to man—the younger leafy portion of the non-toothed or serrated species can be eaten. It can also serve as animal fodder or used as organic fertilizer.

In Japan, the leaf-like parts of kelps are ground into powder-like products and sold as iodine-rich “kombu-cha or kombu

tea”. “Kombu” is the Japanese name of kelps. *Sargassum* can also be prepared as tea. Meanwhile, the cold-water brown seaweed *Hizikia* and *Sargassum* can be prepared into “kimchi”, a popular Korean dish. Other members of the family Sargassaceae are a good source of iodine used in many consumer products.

Macrocyctis is the most dominant seaweed in the sea jungle of the Gulf of California. Meanwhile, *Macrocyctis* is a major source for the iodine needs of US made commercial products.

About the author:

The author is the former director of the National Research Council of the Philippines. He advocates for the strengthening of seaweed fisheries in Eastern Visayas and is involved in several R&D Projects designed to give birth to seaweed-based livelihood activities among fisherfolks and other coastal dwellers.

Annulata



EVOLUTION!

From I to XXX: Looking back and moving forward

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

Three decades and 29 volumes ago, the then National Science and Technology Authority or NSTA, the forerunner of the Department of Science and Technology or DOST, thought of coming up with publication that would cater to a very specific segment of readership. When the publication finally materialized, its very first editorial spelled out its immediate mission which was to serve as a forum for exchange and sharing of information, ideas, opinions experiences, and activities.

The publishers also hoped that the publication would serve as the voice for S&T to be heard outside and a window for those who would like to look inside. It was then called the NSTA Post and its maiden issue, Volume I Issue No. 1, was off the press in May 1983.

Fast forward to 2012: The publication comes out with Volume XXX. It has been officially named S&T POST since 1989, and comes with the purpose of delivering accurate and timely information for its expanding readership, this time including readers in cyberspace.

Physical makeovers

At this stage, the publication has gone through many changes or stages of evolu-

tion that the current editorial team noted as we went through the back issues. Special attention is, of course, given to its very first issue printed on a regular newsprint in tabloid size. Since then, it has metamorphosed several times. From its original size in 1989, it was reduced a little in 1993 but remained a tabloid.

At the turn of the millennium in 2000, the publication tried to keep abreast with the 21st century look. It in fact underwent changes twice in this significant year. It greeted January 2000, with a more presentable look, scrapping the newsprint material and repackaging itself into book paper with colored front page. A month after applying "make-up" on its face, the hemline followed. The S&T Post was

significantly reduced to letter size. The result of the millennium makeover was a more vivid look and a handier size.

The look has improved and so with the contents. The look may be leaner but it was packed with solid and fresh S&T news relevant to the public. So effective was the change that in November of the same year, the S&T Post, with 7,000 subscribers, was named Best Government Newsletter by the Public Relations Officers of the Philippines. The paper was circulating on a monthly cycle.

Then in 2003, the editorial board decided to effect its biggest transformation. From a monthly newspaper, the S&T Post became quarterly to convey more



Maiden issue was called NSTA Post.



The name was changed to S&T Post in 1989.



Masthead was changed in 1993.



Masthead was changed in January 2000. Material was shifted to bookpaper.

relevant features and have a more in-depth reportage. In 2005, another drastic makeover happened. The S&T Post, which was a newspaper since birth, metamorphosed into a magazine. The text-packed cover page and attention-getting headlines gave way to portraits of prominent S&T personalities, including DOST officials. The S&T news finally had a human face every issue.

And now for its 30th volume, the new editorial board decided to implement yet another major makeover. These drastic changes include quality of material, more edgy design, and layout to more expansive themes and different treatment of stories.

Development contents

In the first issue, some of the major news items centered on the development of science communities and the university Centers of Excellence. Its headline was "Science camp for the youth (PSYC-President's Summer Youth Camp)" which told much about the agency's program for the youth.

Just as the S&T Post of today, the NSTA Post was forward-looking. Its first issue tried to get a clear vision of the information age. Then Executive Director of the Technology and Livelihood Resource Center (TLRC), now Technology Resource Center (TRC), Carmen Guerrero Nakpil urged the establishment of the National Information System for S&T and the creation of a science Information Action Group as main information coordinating body for the NSTA. The latter is said to

be the forerunner of the DOST MediaCore – a group composed of information officers within the DOST system who are responsible for packaging, disseminating, and coordinating S&T information for various audiences. The DOST MediaCore is being shepherded by the Science and Technology Information Institute.

Starting with Volume XXX Issue No. 1, the quarterly S&T Post will come up with unorthodox but well thought themes. In this issue, the magazine shows a rich S&T history, particularly on how current technologies began, and visions of a promising future by looking into the great potential of current S&T researches, programs, products, and human resources. Although the sections on news and feature articles remain, the slant of every article is evidently more developmental, focusing on socio-economic benefits of technologies and services from the Department. More importantly, inspiring articles such as success stories are laid out on colorful pages to complete the reading satisfaction of the audience.

Part of the change in the look of S&T Post, which the STII people endearingly nickname "The Post", can be attributed to the major advancements in photography. Writers from STII and the DOST system in general have been exposed to these new developments and are thus putting photojournalism principles in action. Spreads of colorful, sometimes thought-provoking, pictures of relevant events in

the science community will now become a welcome treat to The Post readers.

Take for instance the pages on Philippine Tropical Fabrics on pages 11-15. The overall design and layout are a take-off from fashion magazine pages to highlight the fact that our own tropical fabrics can be worn as high fashion pieces or off-the-rack as casual get-ups and even office uniforms.

On the hand, there are pages devoted to local technologies like on pages 4 and following. The pages featuring the Water Hyacinth Harvester would give the impression that the pages were lifted from a photography, not a technology oriented, publication. But the mixture of varied designs and layouts is tied together by a single theme – locally developed technologies.

A few more pages forward and everyone is given the information on the latest on disaster adaptation technologies and services; all of which have been developed in the DOST system through strong collaboration with various partners.

With the aim of solidifying its niche on readership, the visionary team behind the S&T Post may be taking things in stride but presents aggressive yet plausible effort in contributing to the goals of "Changing the Mindset," a program initiated by the same group of individuals advocating changes in the way information is delivered. *(With inputs from Framelia V. Anonas, STII S&T Media Service)*



Again, an experiment implemented with the masthead.



More compact Post gets a new mashead again.



Bold change into magazine format in 2003.



S&T Post in its 30th year.

DOST-Phivolcs to install new strong motion sensors

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

THE DEPARTMENT of Science and Technology's Philippine Institute of Volcanology and Seismology (DOST-Phivolcs) will initially install new strong motion sensors to nearby provinces around Metro Manila to fine tune its three-year project on beefing up its national earthquake monitoring program.

The new gadgets will record high magnitude earthquakes to provide data for studies on the effects of earth movements on the soil quality, especially in the highly urbanized cities in Luzon.

Specifically, the 27 additional sensors

measure and record large amplitude, high frequency seismic wave activities typical of local earthquakes with magnitude 3 and above.

The additional sensors will strengthen the earthquake monitoring capability of Phivolcs which is beefing up efforts in mitigating disaster risks especially in high vulnerability areas.

"Disaster mitigation is high in the agenda of DOST," said Sec. Mario Montejo, "We are embarking a program that will ensure safer communities through S&T, and installation of strong motion sensors is

just a part of it."

According to DOST-Phivolcs, strong earth movements loosen up soil thus exposing affected areas to multiple hazards such as soil liquefaction, landslides, erosion and sinkholes.

Through the additional sensors, experts at Phivolcs will be able to determine the risks in affected areas and provide a timely recommendation in upgrading building codes to conform with the soil quality. Phivolcs will also be able to predict the patterns of strong shaking in future

to page 33

DOST announces its national flood management program

By ALAN TAULE, S&T Media Service, STII

AS THE cities of Iligan and Cagayan De Oro continue to reel from the huge swath of destruction of lives and property left behind by super typhoon "Sendong," the Department of Science and Technology (DOST) introduced a locally-developed scientific flood warning system that offers a more responsive disaster preparedness mechanism for the country.

In an interagency meeting held recently, DOST Secretary Mario Montejo presented the National Flood Monitoring, Forecasting, and Mitigation Program--an integrated, comprehensive system that responds to the urgent need for a reliable flood warning system covering the country's major river systems and watersheds.

"The National Flood Monitoring Program is government's commitment toward a more effective and efficient disaster mitigation and monitoring system. Too many lives have already been lost, and it is high time for science to step up to the plate and save lives this time around," Montejo said.

The project received support from other meeting participants, including Department of Social Welfare and

to page 33

Rain gauge for Davao.

Department of Science and Technology XI Regional Director Dr. Anthony C. Sales (middle) discusses the functions of the Automated Rain Gauge with the Disaster Risk Reduction and Management Officers of Davao del Sur. From left: Vicente S. Dagangon, DOST-Provincial Science and Technology director for Davao del Sur; Engr. Roderick R. Milana, Provincial assessor and Provincial Disaster Risk Reduction and Management officer, Davao del Sur; William M. Gutierrez, agricultural technologist at Bansalan, Davao del Sur; Dr. Sales; Eric C. Colmenares, DOST XI staff; Joel L. Pitogo, instructor at SPAMAST; Roberto J. Guyot, asst. provincial agriculturist, Davao del Sur; and Jerome S. Escobarte, agricultural technologist, Digos City. (Photo by Henry de Leon, S&T Media Service)



Dr. Anthony C. Sales, DOST XI regional director with DOST staff and the Disaster Risk Reduction and Management officers of Davao del Sur. (Photo by Henry de Leon, S&T Media Service)



Quicker response to metro flooding

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

NOW, THE public can expect faster monitoring and response to rain and flood in Metro Manila as the Department of Science and Technology and the Metro Manila Development Authority agreed to work together to facilitate the rehabilitation and upgrading of the flood monitoring system in the metro.

In a Memorandum of Agreement signed recently by DOST Secretary Mario Montejo and MMDA Chair Francis Tolentino, DOST will roll out at least 38 water level monitoring station units (WLMS) and 13 automated rain gauges (ARG). DOST will also retrofit two data loggers to MMDA's rain gauge monitoring stations.

DOST-Advanced Science and Technology Institute developed and will install water level sensors to collect data in 10 minutes and transmit it via GSM to a server that will transmit the data online to MMDA's central command station. These data will be shared by both MMDA and DOST's Philippine Atmospheric Geophysical astronomical Services Administration

(DOST-PAGASA).

The quick transmission of data using these equipment will help concerned government agencies make informed decision during calamities especially in high risk areas.

Moreover, DOST-ASTI will also develop the visualization of its flood monitoring system which includes historic and most recent rain fall and water level readings. MMDA will also use the DOST-developed aquatic harvester prototype to test its applicability in clearing up the water hyacinths from rivers and lakes.

Aside technical and equipment, DOST will help MMDA in disseminating information on disaster risk management and prevention. PAGASA will also train MMDA and Local Government Unit personnel on the proper use and operation of the WLMS and ARG units. As part of the agreement, DOST gave MMDA access on radar images and data and its corresponding interpretations from PAGASA's Subic Doppler radar.

According to MMDA Chairman Tolentino, "This collaboration with DOST is a fusion of S&T and public service. Rest assured that MMDA will continue to support this kind of endeavor so that in the coming years, the people from Marikina and other flood prone areas will be confident of the government's forecasts before and during calamities."

The collaboration will result in an early warning system for residents in affected areas and will provide a six-hour flood forecasting interval during typhoons. In recent years, residents had seen Metro Manila and other provinces inundated, losing many lives and properties. DOST Secretary Montejo explained that it takes six hours for flood waters to flow down to the low lands.

"The lesson that we learned in the past incidents is that we have to involve the local community. We have to make them aware... we have science to support us," he said. *(With report from Allan Mauro Marfal, S&T Media Service)*



DOST, Smart & Sun work together to improve monitoring of disasters

By: ALLAN MAURO V. MARFAL, S&T Media Service, STI

THE DEPARTMENT of Science and Technology will work together with Smart Communications, Inc. (Smart) and Sun Cellular to improve the communication system in the DOST-developed disaster preparedness system in the country.

The collaboration was formalized in the signing of a Memorandum of Understanding on March 16, 2012 at the Makati Shangri-La Hotel to be led by DOST Secretary Mario G. Montejo, Smart President and CEO Napoleon L. Nazareno, and Sun Cellular President and CEO Orlando B. Vea.

In the MOU, DOST, Smart and Sun committed to collaborate in helping the public access information from the DOST's monitoring system installed in key points across the country. The three partners have agreed to share their core competencies to help reduce the risks of vulnerable communities from rain-triggered hazards.

"DOST's collaboration with Smart

and Sun demonstrates the effectiveness of public-private partnerships in addressing issues of common concern such as disaster preparedness," Secretary Montejo said. "We need to do this to make our people and their properties safe."

DOST is implementing a two-year river basin approach project called the Nationwide Operational Assessment of Hazards (NOAH) Program, involving 18 major rivers basins in the country. The program is designed to set up a more responsive disaster preparedness system to reduce, if not eliminate, human casualties from rain-triggered natural hazards.

For the program, DOST will design systems, including the deployment of sensors, to improve flood monitoring and mitigation. These instruments will be installed in the cell sites of Smart and Sun located in key areas within the 18 target river basins.

Smart and Sun also committed to

design and implement communications solutions for the early warning, feedback and reporting requirements of DOST's program. The three partners also committed to share data and other information derived from the said program.

DOST's NOAH Program aims to respond to the urgent need for a reliable flood warning system in all major river systems and watersheds in the country. It has seven major components, namely: HydroMet Sensors Development, DREAM-LIDAR, FloodNET, Hazard Information Media, Landslides and Geohazards, Doppler System Development, and Coastal Erosion and Storm Surge.

The program was launched recently after President Benigno Aquino III issued directives to concerned government agencies to step up national efforts toward greater and more intensive disaster risk reduction and management procedures in the wake of Typhoon Sendong.

DOST project brings more hope, less side-effect to cancer patients

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

MORE HOPE, less side-effect. This noble way of treating cancer is good news to patients and their loved ones.

Developed by experts led by Dr. Jay Lazaro of the Institute of Biology, University of the Philippines Diliman, the treatment entails the use of immunoliposomes as carriers of drug in cancer therapy. It is currently being tested on mice and part of a project funded by the Department of Science and Technology.

"This kind of breakthrough technology is part of DOST's drug discovery program for 2012," said Sec. Mario Montejo. "It lists high in the priorities under the Department's antibody molecular oncology R&D in our search for anti-cancer treatments suitable to Filipinos."

Immunoliposome technology is a more effective drug delivery procedure. In this method, the cancer-treating drugs are coated with liposomes or sacs that can be filled with drugs to treat cancer or any other disease. The technology is more specific as it targets only cancer cells. Since there are less non-cancer cells affected by the treatment, there is less toxicity and less pain to the patient.

This new technology is much better than the more common method called chemotherapy in which drug is administered intravenously or injected drop-by-drop into the vein. The procedure lasts about 60 to 120 minutes and repeated every three to four weeks.

In general, chemotherapy damages

cells that are dividing, including normal cells in the hair, skin, lining of the mouth and digestive system. These body parts are frequently growing or constantly renewing themselves. As a result, patients experience side effects such as nausea or vomiting, immediate allergic reaction, fatigue, weight loss, taste and smell changes resulting in loss of appetite, and hair loss.

Pain is also a common experience among cancer patients, resulting from the cancer itself or the cancer treatment. Although different people may react differently to different drugs, most cancer patients suffer similar toxicity and side effects. These effects can be unpleasant and usually give discomfort to patients and their loved ones who may be affected physically and emotionally.

to page 33

Eat low-GI fruits, vegetables to avoid cancer, says DOST-FNRI

S&T Media Service, STII

BICUTAN—WHAT IS the secret to eating healthy and avoiding cancer? Look for foods that are natural and have low glycemic index (GI), according to the Department of Science and Technology's Food and Nutrition Research Institute (DOST-FNRI).

Foods with a low GI rating means that consuming them will not result in a significant increase in blood sugar, explained Dr. Mario Capanzana, director of DOST-FNRI.

When we eat, food is converted into a sugar called glucose, which is transported to different parts of the body through the blood with the help of insulin. Low GI foods helps lower the demand for insulin because the food are digested slowly so it prevents a spike in blood sugar. When taken at dinner, low GI foods can maintain blood glucose at low levels through the night.

"The increasing prevalence of lifestyle diseases such as diabetes, cancer and heart diseases make people more curious on what to eat and how it affects their lives. By knowing the glycemic index of a food or a fruit, people will make more informed choices aside from nutritional information

alone," said Dr. Capanzana.

The use of GI for classifying carbohydrate foods was recommended by the Food and Agriculture Organization and the World Health Organization in conjunction with food composition tables to guide food choices.

As a general rule, foods high in dietary fiber such as brown rice have lower GI than food with less fiber content such as polished white rice, said Dr. Capanzana.

"Not all carbohydrate-rich foods are created equal. Foods with high fiber and low GI facilitates the slow release of glucose in the body and thus, lowers the maximum blood glucose level," explained Dr. Capanzana.

Foods are classified according to its corresponding GI, namely low for below 55 GI, medium, 56 to 69 and high, above 70.

Local vegetables, legumes and root crops (except yacon juice which has medium GI) have a low GI rating and are recommended for consumption among people with diabetes and those wanting to maintain weight, according to the FNRI

book "Glycemic Index of Carbohydrate Foods Commonly Consumed in the Philippines" authored by Dr. Trinidad P. Trinidad and science research specialist Aida Mallillin. The FNRI book is now available at P250 each.

Nuts with low GI include peanuts, cashew nutss, cowpeas, mung beans, pole sitao, chickpea, green peas, pigeon peas, kidney beans and lima beans. Vegetables that have low GI rating are string beans, sayote, togue, squash and carrot. Root crops and tubers with low GI include camote, gabi, potato, tugi, ube, cassava, and yacon, according to the book.

Meanwhile, fruits have low to medium GI rating, with variations in the crop variety. For example, a lakatan banana has a medium GI of 62 while a saba variety has a low GI of 53 and thus, is recommended for those trying to maintain low weight.

Fruits with low GI include seedless grapes, Chinese pears, cantaloupe, watermelon, jackfruit, ripe Carabao mango, papaya, red apple, guava and avocado. Pineapple and raisins, however have a medium GI rating.

to page 34



Tuklas Lunas Centers to spur health R&D in the regions

By LUISA SORIANO-LUMIOAN, S&T Media Service, STII

THE DEPARTMENT of Science and Technology-Philippine Council for Health Research and Development (DOST-PCHRD) recently named the Mindanao State University (MSU), Iligan Institute of Technology Campus as its first Tuklas Lunas (Filipino for cure discovery) Center.

As a Tuklas Lunas Center, MMSU-IIT will lead other research institutes in respective regions in unifying research efforts in natural substances for drug discovery. Two more Tuklas Lunas Centers, one from Luzon and another from Visayas, will be identified within the year.

"The launch of Tuklas Lunas Centers is an innovative way to strengthen health

research and harness the capabilities of health researchers in the regions," DOST Secretary Mario Montejo said. "It is a component of DOST's drug discovery program that aims to develop new drugs for tropical and other diseases, including cancer."

Dr. Jaime Montoya, executive director of DOST-PCHRD, said that the establishment of Tuklas Lunas Centers and the 17 regional health research consortia show that research and development in the health sector is no longer "Manila-centric."

Dr. Antonio Ligsay, chief of PCHRD's Research and Development Management Division, said that the awarding of MSU-IIT as Tuklas Lunas Center is just a start of an

effort to harness the natural resources of our country to strengthen the drug development and discovery campaign of PCHRD.

"PCHRD along with the chosen research centers will continue to push boundaries to develop new drugs that will benefit Filipino people in the long run," Dr. Ligsay added.

Through the Tuklas Lunas Centers, regions that are building their capacity in health research and regions are encouraged to identify their problems and search for solutions, Dr. Montoya explained.

The criteria for choosing Tuklas Lunas Centers include excellent research and

to page 33



DOST develops Philippine Health Registry

By LUISA SORIANO LUMIOAN, S&T Media Service, STII

RESEARCHERS CAN now skim through a public database to know if their prospective researches are already being done in other parts of the country through the Philippine Health Registry.

Developed by Philippine Council for Health Research and Development (PCHRD) of the Department of Science and Technology (DOST), the Philippine Health Research Registry is a publicly

accessible data base for all approved health researches and clinical trials being done in the country.

Researchers, funding agencies, policy makers and planners may track the ongoing researches through the site. Thus, duplication of researches will be minimized, collaboration among researchers will be encouraged and allocation of funds for researches will be maximized.

One key feature of the registry is that researchers themselves may register and update their research information.

The full version of the registry will be launched August this year according to PCHRD. The initial content of the registry are the PCHRD funded research.

The registry can be accessed at the URL <http://registry.healthresearch.ph/>



Root crops keep bad cholesterol down, DOST study says

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

IF YOU want to control your cholesterol level, better include *camote* or its cousins in your daily fare. In a study by the Department of Science and Technology's Food and Nutrition Research Institute, it was found that root crops abundant in the country can keep bad cholesterol level down.

Led by DOST-FNRI's Dr. Trinidad Trinidad, the study team discovered that daily intake of root crops significantly lowers bad cholesterol levels in the body.

"Root crops are able to lower bad cholesterol levels because of their dietary fiber content," said Dr. Trinidad. Dietary fiber or roughage is that part of the vegetable or fruit that is not digested and not absorbed in a human's digestive tract.

"Dietary fibers come from a family of carbohydrates that ferments in the colon, turning into short-chain fatty acids that release energy," Trinidad explained. "These fatty acids include butyrate, which prevents the risk of colon cancer, and propionate which helps prevent cholesterol synthesis."

Aside from dietary fiber, root crops also contain vitamin C, calcium, phosphorus, and iron.

The study involved subjects aged 30-55 years, physically and mentally fit, and with moderately-raised serum cholesterol levels. The subjects were non-smokers and were not under any medication. They were all fed with test food for two weeks.

The team used various root crops such as camote (sweet potato), gabi (taro), tugi (lesser or Chinese yam), ube (purple yam), and cassava.

At the end of the study, the researchers found that the cholesterol level of the subjects remained stable. Trinidad's team concluded that root crops, due to their cholesterol-lowering effect, would be important in the proper control and management of chronic diseases, such as cardiovascular diseases.

In individual analysis, the team found that all the root crops used in the study decreased the level of bad cholesterol, especially cassava and camote. The team

to page 34



DOST to offer business incubation services in provinces

By LUISA S. LUMIOAN, S&T Media Service, STII

THE TECHNOLOGY Resource Center of the Department of Science and Technology will soon give a wider range of support to countryside entrepreneurs with the establishment of its Community Technology Business Incubation program this year. TRC Director Dennis Cunanan said that the program, an offshoot of DOST's Open Technology Business Incubation (Open TBI), will be implemented in partnership with the DOST regional offices.

A technology business incubator, or TBI, is a program that helps entrepreneurial companies and start-up businesses to take off and develop through the TBI's array of

business support resources and services. Some of TBI services include business space for rent, marketing assistance, accounting/financial management assistance, links to partners, help with regulatory compliance, and others.

In addition to helping entrepreneurs start up their businesses, the DOST-TRC also helps overseas Filipino workers (OFWs) to start over through its free livelihood trainings to displaced OFWs. DOST, in partnership with Duty Free Philippines, likewise offers livelihood packages such as washing machines for Laundromat business or car tools for

automobile service business through DOST's Kabuhayan Shopping Program.

Celebrating its 35th anniversary, DOST-TRC vows to continue its legacy of providing opportunities for the people.

"The TRC has been the industry leader in terms of livelihood training and technology resource for nearly 35 years. In keeping up with its mandate of creating opportunities, TRC will continue improving and innovating its programs to be able to enhance the productivity of more sectors," DOST Secretary Mario Montejo said.

to page 34

DOST eyes prospects for abaca industry

By CEEJAY VALERO, S&T Media Service, STII

ABACA, CONSIDERED as the strongest natural fiber in the world, is the only plant that can match the durability of synthetic fibers. Because of abaca's strength, it was originally used for ship rigging and other heavy-duty industrial applications. Up to the present, the Philippines is the world's leading producer of abaca fiber, which is why abaca is also called Manila hemp.

It is mainly grown in the Eastern Visayas and Bicol regions and remains the backbone of the livelihoods of thousands of

families in those parts of the country.

Because of abaca's socioeconomic impact on many Filipinos, the Industrial Technology Development Institute (ITDI), a research and development agency of the Department of Science and Technology (DOST), continues to encourage activities that strengthen the abaca industry.

In a DOST- ITDI-sponsored seminar, Dr. Hitoshi Takagi of the University of Tokushima in Japan, discussed the

topic "Characterization of Abaca Fiber Reinforced Green Composites," in which he offered a comparative study between the properties of untreated abaca fiber and abaca fiber treated with green composites.

According to Dr. Takagi, the said process strengthens every single strand of a fiber by solidifying its lumen, or the strand's hollow part. The use of green composites, he added, will make abaca fiber stronger

to page 34

DOST's Technomart says 'aloha' to Hawaiian market

By APRIL ROSE A. ITCHON, S&T Media Service, PCAARRD

The DOST-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development's (PCAARRD) Technomart products may soon be available in Hawaii.

This prospect drew nearer as merchants of the Filipino Chamber of Commerce of Hawaii (FCCH), through Melody Calisay, FCCH member and East-West Marketing, Inc. head, expressed interest in importing TechnoMart's coconut sap sugar or coco sugar and bongulan banana chips.

According to Calisay, these products have high potentials in penetrating the Hawaiian market.

Technomart's coco sugar and banana chips caught Calisay's attention during

the FCCH's 22nd Trade Mission to the Philippines held recently at the Asian Institute of Management Conference Center in Makati City.

Themed "Business opportunities in Hawaii -- Leading the trend in renewable energy creation", the event held a workshop on business opportunities in Hawaii, particularly in the trade/import-export of goods and products. As participant in the trade mission, PCAARRD was able to showcase its assisted science and technology (S&T) products and present these to a panel of prospective clients.

After initial talks at the workshop, FCCH representatives visited PCAARRD's One Stop Information Shop that displays all S&T products supported by the Council.

As of press time, Calisay is holding negotiation talks with the Council's regional partners for the initial shipment to Hawaii of said products.

FCCH's trade mission has been helping increase business activities by promoting Hawaii and Philippines as both investment and tourist destinations. Moreover, the trade mission encourages trade and economic activity across the Pacific.

FCCH likewise serves as the voice of Filipino businesses in Hawaii. It broadens opportunities for Filipino entrepreneurs and member businesses. It also strengthens business links between Hawaii and the Philippines.



Top cities to locate BPO operation in the Philippines

By: ALLAN MAURO V. MARFAL, S&T Media Service, STII

DAVAO CITY in Mindanao, Sta.Rosa City in Luzon, and Bacolod City in the Visayas. These burgeoning cities, according to a joint report by the Department of Science and Technology's Information and Communication Technology Office (ICTO) and Business Processing Association of the Philippines (BPAP), are the top three best locations for business process outsourcing services in the country.

Dubbed as "Next Wave Cities", the three cities plus seven others, are primed to provide bright opportunities to BPOs who want to locate outside of Metro Manila. Other next wave cities identified in the report are Iloilo, Metro Cavite, Lipa, Cagayan De Oro, Malolos, Baguio, and Dumaguete.

"The IT-BPO's next wave cities will provide employment and training to our multitude of graduates and keep local talent within the country," DOST Secretary Mario G. Montejo said. "Together with our Technology Business Incubator (TBI) program, we hope to develop these cities into IT hubs that will accelerate economic development in the countryside."

These locations were assessed through scorecards using metrics that

include talent, infrastructure, and cost of doing business environment, three most important considerations in locating an IT-BPO office.

Also included in the report are important data such as the number of graduates from the location, comparative costs, utilities within the locale, and information on ready IT-BPO spaces, among others.

Davao City was ranked first due to its large talent pool, stemming from its large population and abundance of quality tertiary institutions. The city has more than 46 tertiary institutions, 14 of which have high levels of accreditation, churning out more around 13,000 next graduates every year.

Gregorio Sorio, senior executive vice president of Cyber City Teleservices Inc. in Davao, emphasized that talent was their main consideration in locating to Davao.

Sta. Rosa City in Laguna placed second and was tagged the Makati of the South because of high-quality infrastructure comparable with established IT-BPO hubs. The proximity of the city to Metro Manila ensures the availability of talent. Moreover, its technopark zones make it an attractive



option for IT-BPO operators.

Bacolod City was ranked third for its business environment. Gigi Virata, senior executive director of BPAP said, "Bacolod has set a good example by making the its business environment attractive for the industry. It has reaped the benefits of playing host to over 12,000 IT-BPO employees."

As well, Bacolod is the country's third fastest growing economy in terms of IT-BPO growth which, at 60 percent capacity of operation, is the highest among the next wave cities. It is also most successful in establishing 15 IT economic zones, reflecting the city's vision of being a top investment destination.

to page 35



PH can be global leader in healthcare BPO this year, says ICTO exec

QUEZON CITY—THE Philippines is poised to become the world leader in the multibillion-dollar worth healthcare information management outsourcing this year, an executive of the Department of Science and Technology's Information Communications and Technology Office said.

According to Mr. Alejandro Melchor, Information and Communications Technology Office (ICTO) Deputy Executive Director, the availability of licensed healthcare professionals such as nurses in the country would ensure the steady supply of agents to fill in the seats for healthcare outsourcing.

Aside from medical transcription, the healthcare outsourcing market has evolved to include high-value services namely, clinical coding, disease management, revenue cycle management and pharmaceutical benefits

management.

With this development, DOST Secretary Mario Montejo enthused, "As healthcare information management outsourcing continues to evolve, we at DOST wish to extend the support needed to help the sector grow and provide meaningful employment to Filipino professionals."

Healthcare information management outsourcing is one of four areas that the Philippines is looking into for expansion, alongside finance and accounting, HR outsourcing, and animation and creative process outsourcing, said Mr. Melchor.

As the number one voice services provider worldwide, Mr. Melchor said that it is crucial for the country to move into "high-

value chain" services such as the four growth areas.

"Medical information outsourcing is the most promising of the four sectors we are targeting for growth. In fact, the Philippines is the de facto number one this year, not in the total number of seats but in terms of being a destination of choice," said Mr. Melchor.

To date, some 14,000 Filipino health care professionals earned \$102 million in revenues for the healthcare sector.

ICTO promised it will work and coordinate efforts closely with the Business Process Association Philippines (BPAP) and the Healthcare Information Management Outsourcing Association of the Philippines

to page 35

DOST UNDERSECRETARY Fortunato T. De la Pena (center) holds the official scroll of House Resolution No. 218, authored by Rep. Angelo B. Palmones of AGHAM Party List (right), that recognized him as the first Filipino to chair the UN Commission on Science and Technology for Development (UNCSTD) in brief ceremonies that marked the start of plenary sessions at the House of Representatives. Also in picture are members of Undersecretary de la Pena's family — sons Enrico (left) and Fortunato Jr. (second from right), and wife Mariquit or "Kit." The UNCSTD is a subsidiary body of the United Nations tasked with the following mandates: (1) the examination of science and technology questions and their implications for development; (2) the advancement of understanding on science and technology policies, particularly in respect of developing countries; and (3) the formulation of recommendations and guidelines on science and technology matters within the United Nations system. (Alan Taule, S&T Media Service)



PNRI expert is Dangal ng Bayan awardee

By GEORGE ROBERT VALENCIA III, S&T Media Service, STII

SENSE OF discipline and urgency, commitment, and honesty are values that made Dr. Lucille Abad the perfect awardee for the 2011 Dangal ng Bayan Award by the Philippine Civil Service Commission.

Dr. Abad is the current Head of the Chemistry Research Group and Supervising Science Research Specialist at the Department of Science and Technology Philippine Nuclear Research Institute (DOST-PNRI). She also holds the rank of Scientist I under the Civil Service Scientific Career System. She received her bachelor's diploma in Chemistry from the University of San Carlos; master's degree for the same field from the University of Santo Tomas; and doctorate degree in Nuclear Engineering from the University of Tokyo, sponsored by the Japanese Society for the Promotion of Science - RONPAKU Program.

Over the years, her researches have been recognized and awarded by the scientific community for their immediate relevance and impact in agriculture, health, and environmental protection. Her most noted creation to date is the PVP-Carrageenan hydrogel, an effective dressing for treating skin burns, bed sores and other wounds. Made of carrageenan which is extracted from red seaweeds, it is a cheaper alternative to the commercial hydrocolloid dressings. The hydrogel has won her two major recognitions: first place for the 2006 Annual Aquatic Technology Competition by the Philippine Council for Aquatic and Marine Research and



The mark of excellence. Dr. Lucille Abad (right) of Philippine Nuclear Research Institute of the Department of Science and Technology (DOST-PNRI) receives the Dangal ng Bayan Trophy from Executive Secretary Paquito Ochoa, Jr. (left). An enduring achievement, the Dangal ng Bayan Award is conferred by the Philippine Civil Service Commission to government employees who have given outstanding work performance. The trophy was designed and executed by National Artist for Sculpture Napoleon V. Abueva. (Photo by Philippine Civil Service Commission)

Development (DOST-PCAMRD), and second place for the 2002 Likha Awards (Creative Research-Government in the Health, Education and Environment Category) by the Technology Application and Promotion Institute (DOST-TAPI). Its commercialization, meanwhile, is already underway.

A similar product, the radiation dose indicator, a valuable tool in quality

assurance program of radiation processing of food and sterilization of medical products, had earned her first prize in the 2002 Likha Awards (Creative Research-Government in the Health, Education and Environment Category).

At present, she leads the development of other several radiation-processed products, namely: the haemostat or a blood-



DOST offices conferred the Philippine Quality Award

S&T Media Service, STII

THE DEPARTMENT of Science and Technology's Metals Industry Research and Development Center and its Regional Office in Western Mindanao (DOST-IX) received the Recognition for Commitment to Quality Management in the 14th cycle of Philippine Quality Award, feted recently by President Benigno Aquino III at the Malacanang Palace.

The PCA recognition is awarded to institutions that showed serious commitment to improvements in order to achieve quality excellence. The PQA is the highest level of national recognition for exemplary organizational performance established through RA 9013. It is the country's equivalent to the USA's prestigious Baldrige Award.

On DOST's receiving of the awards, Secretary Mario Montejo said, "The awards are a confirmation of DOST's commitment to excellence. We aim to set the standards to quality management not only in the science community but also in the industry and among government agencies."

The awards were received by DOST Secretary Mario Montejo, DOST-MIRDC Executive Director Engineer Arthur Lucas Cruz, and DOST-IX Regional Director Brenda Nazareth-Manzano.

"Time and again, the world has witnessed demonstrations of the extraordinary skill and ability of Pinoys. Our steadfast pursuit of quality, combined

to page 33



President Aquino presents the Recognition for Commitment to Quality Management to the Department of Science and Technology (DOST) – Regional Office No. IX represented by DOST Secretary Mario Montejo, Undersecretary Carol Yorobe and DOST-IX Regional Director Brenda L. Nazareth-Manzano (Photo by DOST IX)



PNRI research specialists win silver and gold awards in agri research

By JUSTINA CERBOLLES, S&T Media Service, PNRI

GLENDA B. Obra, Head of the Agricultural Research Section (ARS) and Sotero S. Resilva, Senior Science Research Specialist, Entomology Unit, ARS-PNRI together with Dr. Louella DJ Lorenzana of DA's Regional Field Office in Region IV-B, earned the silver award in the Agriculture and Fisheries Modernization Act (AFMA) Best R&D Paper Competition for the Applied Research - Technology Generation/Information Generation (TG/IG) - Agriculture Category and the gold award as AFMA Best R and D Poster in the recent 23rd National Research Symposium organized by the Department of Agriculture - Bureau of Agricultural Research.

The paper "Irradiation as a Quarantine Treatment for Mango Pulp Weevil, *Sternochetus frigidus* (Fabr.) in Philippine Super Mango" explores how irradiation of the Philippine Super Mango can be used as a post-harvest control of the mango pulp weevil. This pest attacks the flesh and pulp of mango, making the fruit unacceptable for export to the United States and other countries with strict quarantine regulations.

The authors received PhP1M (senior author) in research grant, a plaque and PhP75,000 as cash prize for their research paper's silver award; and a plaque and PhP

50,000 cash prize for the Best R and D poster.

To date, only mangoes obtained from Guimaras province, which are certified as seed weevil- and pulp weevil-free, can be exported by the Philippines. A nuclear

technique, the Sterile Insect Technique (SIT), was one of the factors that facilitated the export of Guimaras mangoes to the United States. SIT has been a long-standing program of the PNRI in cooperation with the International Atomic Energy Agency.



Ms. Glenda B. Obra, Supervising Science Research Specialist, PNRI – DOST (4th from left) and Louella Rowena de Jesus-Lorenzana, Department of Agriculture-RFU 4B (3rd from left) receive the silver award for AFMA Best R & D Paper in the Applied Research-Technology Generation/Information Generation – Agriculture Category, and the gold award for AFMA Best R & D poster. Department of Agriculture (DA) Secretary Proceso J. Alcala (2nd from left), together with DA Undersecretary Antonio A. Fleta, BAR Director Nicomedes P. Eleazar, and Asst. Director Teodoro S. Solsoloy presented the award at the Manila Hotel. (Photo by DA-BAR)

DOST-TAPI to hold national invention contest

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

INVENTIONS AND researches that will make life convenient and help improve our economy will compete for the limelight at the National Invention Contests and Exhibits (NICE) sponsored by Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI). The invention contest will be held in July 2012.

The National Invention Contest is a competition for both the public and private sector inventors and researchers who qualified through the Regional Invention Contest and Exhibits held last year. The qualifiers will represent their respective regions in the six contest categories where they qualified.

The categories are Invention Category (Tuklas Award), Utility Model Category, Industrial Design Category, Creative Research Category (Likha Award), Student Creative Research (Sibol Award) for High School and Student Creative Research for College.

Entries in the invention, utility and industrial design categories must have a pat-

ent, utility model registration, and industrial registration respectively.

Creative research refers to research results with demonstrable qualities and potential for improvement and/or wide-spread commercialization.

Student creative research refers to new and innovative projects or models that have significant contribution to the promotion of S&T innovations developed by college and high school students. Projects and works eligible for the NICE are new and useful machines, gadgets, products and processes, or their improved versions, and non-biological or microbiological processes.

Outstanding inventions will be judged according to degree of inventiveness/ingenuity (40%), readiness for commercialization/degree of development (30%), commercial viability (20%), and presentation and demonstration (10%).

For outstanding utility model, the criteria for judging are useful technical advantage (40%), degree of development (30%),

usefulness or commercial viability (20%), and presentation and demonstration (10%).

Meanwhile, outstanding industrial designs will be judged according to ornamentality and aesthetics (35%), market potential (30%), uniqueness (25%), and presentation and demonstration (10%).

Creative research and student creative research, will be evaluated in terms of originality and creativity (30%), usefulness (30%), market potential (30%) and presentation and demonstration (10%).

The winners of NICE will receive plaques and cash incentives.

The National Invention Contest (NIC) is conducted pursuant to Section 4 of the Republic Act No. 7459 also known as "Inventors and Invention Incentives Act of the Philippines." TAPI believes that, through invention contests and exhibits, inventors and innovators will be challenged to continuously create useful products and processes that are essential in sustaining the country's level of inventiveness and productivity.

National Invention Contest Requirements and Mechanics

1. Contestants are required to submit the following to the TECHNOLOGY APPLICATION AND PROMOTION INSTITUTE (TAPI) on 08 June 2012 not later than 5:00 p.m.:

- a. Nine copies of the completely filled-up Entry Forms 01 or 03
- b. Nine original copies of signed waivers
NICE Form No. 02 - Waiver Form for invention, utility model, industrial design, and creative research categories
NICE Form No. 04 - Waiver Form for Sibol Award
- c. Nine copies of letters patent or UM/ID registration (as applicable)
- d. Nine copies of Registrability report for UM/ ID registration
- e. Nine copies of the description/drawings, pictures, certificates.
- f. For Creative Research Category (Likha Award) and Student Creative Research Category (Sibol Award):
Eight copies of certification that their work is their own, new and original.
NICE Form No. 5 - Certification for Entries under the Creative Research Category (Likha Award)
NICE Form No. 6 - Certification for Entries under the Student Creative Research Category (Sibol Award)

All forms can be downloaded at www.tapi.dost.gov.ph or availed at TAPI Office, DOST Compound, Taguig City.

2. Contestants must submit their duly accomplished entries to TAPI on 08 June 2012, not later than 5:00 p.m. All documents submitted are subject to final examination by the Panel of Judges.
3. Contestants in the Creative Research Category (Likha Award) and Student Creative Research Category (Sibol Award) shall certify that their work is their own and that to the best of their knowledge, it is new and original.
4. Contestants may be required to provide additional information to the Judges in order to facilitate the evaluation of their entries during the contest proper.

National Invention Contest Finalists

TUKLAS (OUTSTANDING INVENTION)		
Plug-in Ballast Booster	Ermildo R. Diamante	Sindangan, Zamboanga del Norte
Betel Oil	Cipriano Diego	North Cotabato
Challenge 21 - An Educational Strategy Board Game	Leonardo Mejia Yu	NCR
Apparatus for Forming Automotive Rubber Bushings	David Lacueva, Hipolito Lacueva Jr. Randy R. Tirado, Isaias Lacueva, J	Region II
Multi Purpose Dryer	Jaime J. Esteban	Region III
Motorcycle Stand Alarm System	Timor Miguel A. El-Estwani	CARAGA
OUTSTANDING UTILITY MODEL		
A Novel Slimming Agent	Rosalinda C. Torres, Evangelina C. Monroyo Evelyn B. Manongsong, Eduardo A. Lanto Perla M. Cuasay, Elvira L. Arrogante Fe M. Sison, Merle A. Villanueva Ursela B. Bigol	NCR
Process of Producing Rice Wine Fermented with Yeast Patties and Rice Wine Produced Therefrom	Josephine A. Guimpata, Jamaica G. Bumidang	CAR
Engineered Kawayan Technology: Machine and Products Bamboo	Stanley Malab, Jose Zafaralla	Region I
A Multi Purpose Overhauling and Lifting Apparatus	Romeo G. Seguban	Region II
Modular Essential Oil Distiller	Bienvenido R. Baligod	Region IV-A
Automotive Charging System with Safety Device	Nicanor Balbin	Region V
Compressed Air Thermal Fuel Oil Dryer	Emiliano F. Quitiol	Region XI
OUTSTANDING INDUSTRIAL DESIGN		
Plastic Double Cavity Tanchion	Ralph Cabrera	NCR
Plastic Toilet Built-in Anaerobic Septic Tank	Melouni B. Franco	NCR
Utility Ladder	Romulfo C. Sanchez	Region II
Solar Water Heater	Dennis Mercader	Region IV A
Charcoal Stove Organizer	Erlinda C. Relucio, Danilo L. Relucio	Region V
LIKHA (OUTSTANDING CREATIVE RESEARCH)		
Multiple Wind Energy Sources Wind Turbine	Ermildo R. Diamante, Emma R. Diamante	Region IX
Recycling Wastes from Processing Sea Cucumbers: Green Technology in Local Formulation/ Production of Biosafe and Indigeneous Products	Emil Keith Antonio	CARAGA
Barangay Mechanical Rice Dryer	Benjamin Hurtado	Region XII
Soya Extract and Lactobacillus: A New Innovative Way to Moist Wound Healing Technology	Engr. Grecilda Sanchez-Zaballero	Region VII
Biodegradable Starch-Clay Nanocomposiste for Green Packaging	Blessie A. Basilia, Ma. Teresa V. Navarro Marissa A. Paglicawan	NCR
Double Burner Clay Stove	Alexander B. Dulliyao, Edna P. Yumol Raquel J. Dulliyao, Norfredo M. Dulay Romualdo U. Wacas	CAR
Using Water to Pump Water: The Hydro Powered Water Pump	Reynaldo C. Castro, Reynold M. Caoile	Region I
Bonwiser Pipe and Angel Bar Bender Machine	Bonifacio B. Carag Sr., Bonifacio A. Carag, Jr.	Region II
Multi Purpose Grain Roaster - Mixer - Pericarp	Jaime J. Esteban	Region III
Biotech Rennet for Cheese Making	Susana M. Mercado	UPLB - Biotech Los Banos, Laguna
Rice Hull Insulated Solar Water Heater	Melchor Jaramilla Jezreel D. Tuquero	Palawan State University Tiniguiban, Puerto Princesa City Palawan Region IV-A
Item Bank and Test Formulator	Cesar B. Bermundo, Alex B. Bermundo Rex C. Ballester	Naga City
Collapsible Reversible Flat Bed Multi Grain Dryer	Panfilo Sayo	Region VI
Design and Fabrication of Equipment to Produce Bioethanol from Coconut and Nipa Sap	Jaime P. Gilbuela	University of Eastern Philippines Catarman, Northern Samar Region VIII
Charcoal / Wood Stove with Blower	Nicolas P. Abacain	CARAGA
Squash Seeds Sunblock Lotion - Vitamin E-enriched	Mary Jane Barluado	Region XI

SIBOL AWARD (OUTSTANDING STUDENT CREATIVE RESEARCH) HIGHSCHOOL			
Prototype Dryer with Nichrome Wire and Blower Fan as a Heat Enhancer in Drying Guso (<i>Euchema kappaphycus</i>)	Sheršana Mansul		Regional Science High School in Region IX Malasiga, San Roque, Zamboanga City
Study on the Herbal Potential of Madre de Cacao Leaf Stalk	Gella Mae de Los Angeles, Patricia Nyn Heruela, Renerio Gentallan, Jr	Ms. Erma Dapin	Gusa Regional Science High School Gusa, Cagayan De Oro City –Region 10
The Potential of Pansit-pansitan as Bio-coolant	Ever Luv S. Esquilla, Juhrina D. Sabpa	Mr. Harold B. Alvir	Esperanza National High School Esperanza, Sultan Kudarat –Region 12
Blood and Bacteria Staining Robotic Arm	Carlex Jose, Brian Mendoza Jenn Marc Villablanca	Mr. Vince Gabunca	PSHS Eastern Visayas Campus Pawing, Palo, Leyte—Region VIII
The Feasibility Study of Producing Bioplastic from <i>Musa sapientum</i>	Racquel Ranchie A. Ting	Ms. Lailanie V. Pattaguan	University of St. Louis Tuguegarao Ugac Sur, Tuguegarao City –Region II
Engineering of Waste Chicken Eggshells for the Development of a Low-cost, Non-toxic and Environment-friendly Moisture and Water Adsorbent Nanoparticles	Maynard E. Limbaco, Trexie M. Alimpoos Christian Ed F. Ciencia	Mr. Jonathan Garzon	Bayugan National Comprehensive High School Bayugan City, Agusan del Sur--CARAGA
“Walk-A-Volt” Electricity Harvesting Device Installation for Shoes as Alternative Mobile Phone Charger	Christian Joseph S. Esteleydes Daryl Patrick M. Roco Franz Dainzel M. Mondonede	Mr. Jonathan Gorzon	Bansud National High School Regional Science High School for MIMAROPA Pag-asa, Bansud, Oriental Mindoro—Region IV-B
Abaca Wastes Profile: Basis for Innovating Technologies	Alfredo John M. Malinis	Ms. Evelyn R. Espinas	Polangui General Comprehensive High School Centro Occidental, Polangui, Albay –Region 5
Manually-operated Extruder Machine: Prototype in Making Leaf Briquettes	Yddan France P. Dungan		Negros Occidental National High School Estrella Road, Brgy. XIV, Victoria Negros Occidental—Region VI
Circuit Deactivating Device Applying Relay Technology via Sample Voice Call using Global System for Mobile Communication	Ysabelle Mae A. Dalina, Albert Adrian R. Tongco Giesel G. Mercado		Ramon Magsaysay High School España, Manila –NCR
Pentavariabale Meter	Jose Marie Antonio Minoza Christian Arvin Castelo Steven Alfred De Leon		Rizal National Science High School Binangonan, Rizal—Region 4A
Evaluation of Insecticidal Properties of <i>Centella asiatica</i> and <i>Mimosa pudica</i> against Stored Grain Insect Pests	Louise Ruth F. Paras Paola Bianca A. Trinidad, Angelica C. Ladista		Juan R. Liwag Memorial High School San Vicente, Gapan City, Nueva Ecija— Region III
Biomimetrics: Ultrasound Guide for the Blind	Chyla Penafiel, Kate Orduna Chiquie Kenneth Choy	Mr. Ryan Saingan	University of Baguio Science High School Assumption Road, Baguio City--CAR
Microbial Production of Polyhydroxy Alkanotes using Fish Scales as Nitrogen Sources	Mary Cherubin Adelaida Cruz	Ms. Michelle Ducusin	Philippine Science High School - Ilocos Region Campus Poblacion, San Ildefonso, Ilocos Sur—Region I
The Leaves of Snake Plant (<i>sansevieria trifasciata</i>) as Natural Fiber	Lovely Asur, Angleo Angway	Mrs. Debbie G. Teruel	Compostela National High School P-7 Lapu-lapu Street, Poblacion Compostela Valley Province –Region XI
SIBOL AWARD COLLEGE			
Novel Eco-Friendly Citrullus Products	Emil Keith Antonio		Mindanao State University Main Campus, Marawi City Marawi City, Lanao del Sur—ARMM
Pro-coagulant and Bio-plastic from Bitter Cassava and Chanos Chanos scales	Jade Pamela Barriga, Anthon Mark Jay Rivas, Emil Keith Antonio		Mindanao State University - Gen. Santos City Fatima, General Santos City—Region XII
Smart E-loading Machine	Renman R. Piczon, Jason G. Arroyo		Samar State University Catbalogan, Samar—Region VIII
Preparation and Evaluation of Hydroxyapatite Bioceramic from Janitor Fish (<i>Ptergoplichthys disjunctivus</i>) Bone by Heat Treatment	Geno L. Mendoza		CARAGA State University Ampayon, Butuan City—CARAGA
Small-scale Multi Commodity Dryer	Denmark M. Condino, Louie C. Jamora		Dr. Emilio B. Espinosa Sr., Memorial State College of Agriculture and Technology (DEBESMSCAT) Masbate City –Region V
Microcontroller-based Electronic Load Controller with SMS Monitoring System for Stand Alone Generating System	Jeremias Pascual Jr., Ryan Jan Arellado Joebert Mendoza, Gilbert Gnotob Rufino Tolosa		Central Philippine University Jaro, Iloilo City—Region VI
The Development of a Low Cost Rotating Pyranometer for Extensive In-situ Solar Data Gathering	Fidel D. Diaz, Jerrold L. Ngo Maximilian S. Pascual, Albert Joseph B. Planes		De La Salle Univerity Taft Avenue, Manila—NCR
Utilization of Packed Coal Fly Ash from Oilspill Sorption	Cathryn M. Hernandez, Mark James A. Paral Edieleen H. Tatlongharri		Batangas State University Rizal Avenue Ext., Batangas City—Region IVA
Shielding Effects of Porous Glass Beads Technology in Preventing the Association of Additives in Foods	Narro R. Navarro		Nueva Ecija University of Science and Technology Gen. Tinio Street, Cabanatuan City—Region III
Micro Controller Based Breath Analyzer Used in Alcohol Content Detection for Ignition Interlock	Glenda B. Gonsadan, Nore Bell D. Loy Sonia B. Saley		Saint Louis University Bonifacio Street, Baguio City—CAR
Portable Vacuum Eraser	Irene Apigo, Rey Gano, Remond Leal Maribel Pascual, Sadri Valdez		DMMSU-Mid, La Union San Fernando City, La Union—Region I
Development of A-line Disconnection System	Kris Logie Mallorca, John Mark Coloma Rae Reyes, Edezon Virtudazo		University of Mindanao Bolton Street, Davao City—Region XI

large earthquakes.

"Engineers will be guided on the limitations of their structural designs against the soil quality in a particular area," said Phivolcs' Melchor Lasala. Proper guidance will enable engineers to improve the structural designs of buildings and make these safer and sturdier.

Geohazards may not be presently apparent at the present but experts express that the risk is too great to be ignored.

"Our job is to provide vital information to local governments as well as private engineering firms and land developers on the possible hazards that may occur, and hopefully prevent it from happening," explained Lasala.

Although the sensors measure "big event" ground movements, Lasala underlined that these instruments are not early warning systems. "These instruments are used more on recording and measuring the impact and magnitude of the earthquake in an area for further studies," Lasala clarified.

He also added that Phivolcs will install strong motion sensors in the Visayas region and in Davao City. Just recently, the agency has installed a sensor in San Pablo City, a burgeoning city in the southern part of Laguna.

with core competencies such as a strong work ethic, an ability to think outside the box, and a passion to excel in our respective crafts, distinguishes Filipinos in the global community as excellent workers," President Aquino said as he conferred the PQA to DOST-MIRDC and DOST-IX, along with two other agencies.

PQA recognizes organizations in both private and public sectors that excel in quality management and overall organizational performance. These standards provide Philippine industries with benchmarks and models to emulate. Some 77 countries worldwide have already established a similar quality award system to address the common need for organizations all over the world to become globally competitive.

Development Secretary Ma. Corazon "Dinky" Soliman, Department of Justice Secretary Leila de Lima, including the undersecretaries from the interior and local government and environment departments. Leading the meeting was Department of Public Works and Highways Secretary Rogelio Singson.

The flood management program, according to Montejo, has several components: the DREAM or the Disaster Risk Exposure, Assessment, and Mitigation; FLOODNET; Sensors Development and Weather Media among others.

These measures were launched after President Benigno Aquino III issued

strict directives to concerned government agencies to step up national efforts toward greater and more intensive disaster risk reduction and management procedures in the wake of Typhoon "Sendong."

"Disaster preparedness will entail a team effort, so that together we will be able to achieve goals and end-results mutually beneficial for all," Montejo added.

For his part, Singson stressed the vital role of communication so the public will understand the usage and effectiveness of these devices, which are about ready to roll out. (With reports from Alam Mauro Marfal, S&T Media Service)



DOST Secretary Mario G. Montejo and Metro Manila Development Authority Chair Francis N. Tolentino, with PAGASA Administrator Nathaniel Servando (far left), sign the Memorandum of Agreement to rehabilitate MMDA's flood monitoring system. The agreement states that DOST shall roll out to MMDA at least 38 water level monitoring station (WLMS) units and 13 automated rain gauge (ARG) units, and retrofit at least two data loggers to MMDA's rain gauge monitoring stations to boost its current flood monitoring capability. For its part, PAGASA shall be tasked to train MMDA and LGU personnel on the proper use and operation of the WLMS and ARG units and calibrate the two data loggers in coordination with the MMDA. (Alan Taule, S&T Media Service)

development track record, competitive staff, and institutional capacity.

The launch and awarding of Tuklas Lunas Center was one of the highlights in the DOST-PCHRD's 30th anniversary celebration at the Makati Shangrila Manila, Makati City last March 16, 2012.

PCHRD has been leading natural substances research in the country. It supported the development of lagundi and sambong as herbal drugs for cough relief and kidney stone dissolution respectively. It is currently supporting research on herbal drugs for dengue and tuberculosis.

Natural substance research is gaining renewed interest in the international front. Natural substances include products from plants and animal sources both from terrestrial and marine environment.

"At present, we are testing the technology using Caelyx, a certain cancer drug. However, the technology can be eventually used for any other drug and any other illness," revealed Dr. Lazaro.

Caelyx treatment for cancer may cost about P40,000 to 45,000 for every 20 mg. Although treatment by immunoliposome may cost higher, it is more effective as it is target-specific and has less toxicity and side effects. This means less fatigue for the patient and greater chance of winning and recovering against the disease.

Cancer is one of the leading causes of morbidity and mortality in the Philippines. It ranks third after communicable diseases and cardiovascular diseases, according to the Department of Health.

Root crops . . . from page 25

also discovered that *tugi*, a root crop abundant in the north, even increased good cholesterol.

In another study, researchers found that corn is good for the heart. It contains

folate that lowers the level of homocysteine, a kind of amino acid that damages the lining of arteries and may make blood clot more easily than it should. High homocysteine levels may lead to heart attack.

Corn also has thiamin and pantothenic acid that help in producing energy for the body and in reducing stress.

Root crops and corn are traditional Filipino foods that, in some parts of the country, serve as staple food. For the average Filipino, root crops and corn are best eaten as snacks—tasty, filling, and inexpensive.

So if you want to keep your cholesterol down, junk the grease and go back to eating boiled corn, camote, and cassava. “These foods used to be labeled as ‘pagkain ng mahirap’ (food for the poor) but now it is also for the rich,” quipped Trinidad.

Even that sweet camote que is good, “as long as there’s not much sugar in it and you eat in moderation,” Trinidad advised.

DOST eyes . . . from page 26

and more heat resistant than bamboo fiber.

As such, this process has the clear potential to boost and revive the local abaca sector by posing a challenge to the dominance of synthetic fibers in the global market.

Meanwhile, Dr. Byung-Sun Kim, a principal researcher at the Korea Institute of Material Science (KIMS), gave a detailed look on the many and varied applications of natural fiber composites in items around us.

Among the many uses he presented was the use of abaca fiber as roofing material for public utility jeepneys. Dr. Kim said that unlike steel, abaca has lower heat conductivity that can keep temperatures cooler inside the jeep, a major benefit considering the country’s tropical warmth and humidity.

Likewise, he urged Filipinos to patronize locally handcrafted bags made

from natural fibers as a substitute for plastic bags when shopping. He noted that the use of “bayong” was common but has since fallen out of favor among shoppers. However, Dr. Kim said that plastic bags contribute significantly to the growing problem of waste disposal, and that these are often the reason for the clogging of sewers and waterways especially in Metro Manila.

Dr. Kim is also looking forward to collaborating with ITDI in abaca fiber R&D, a proposal met with support in the gathering because of its potential impact to abaca producers as well as related industries such as ropemaking, handicraft, and garments.

The Seminar on Natural Fiber Composites was participated in by representatives from other government agencies, entrepreneurs, and university students.

DOST to offer . . . from page 26

This year, TRC will focus on sectors like the youth, women, senior citizens and OFW’s. According to TRC Director Dennis Cunanan, “Expanding our services will enable us to serve more sectors and, this way, people can identify themselves and find their place in the whole picture.”

“Creating opportunities is a continuous process. We will not stop from now and make sure that the workforce of the center will adapt to the changing times and we will be still relevant and effective as an institution. The people deserve nothing less,” Cunanan said.

Eat low . . . from page 24

Among the crops mentioned, those that are both high in fiber and low in GI rating are as follows: guava (5.3 grams of fiber per 100g weight and low GI of 19); jackfruit (with dietary fiber of 3.4 grams per 100g weight and low GI of 41); and carrot (3.4 grams of fiber per 100g weight and low GI of 35).

When it comes to rice, consumption of brown rice is highly recommended (IR64 has 2.5 grams of fiber per 100g serving and low GI of 51) than polished or milled rice (with medium GI of 57 to high GI of 88 for different varieties).

Processed rice products such as kutsinta and puto have high GI rating of 80 and 90, respectively. Bihon and canton noodles have low GI of 49 but canton has a higher fiber content (5.2 grams of fiber per 100g weight) than bihon (0.2 grams per 100g weight).



Next wave cities for BPO operations. DOST Secretary Mario G. Montejo (third from left), DOST-Information and Communication Technology Office Executive Director Napoleon Louie Casambre (fourth from left), former CICT Commissioner Monchito Ibrahim (left) with BPAP President Benedict Hernandez (second from left), BPAP Senior Executive Director Gigi Virata (right) and Jones Lang LaSalle Leechiu country head David Leechiu (second from right) launched the “Next Wave Cities 2010-2011” report last March 15, 2012 at Tower Club, Philam Life Tower, Makati City. The report, conducted by the DOST-ICTO and the Business Processing Association of the Philippines, contains important information on cities outside Metro Manila that are primed for outsourcing services. (Photo by: Gerry Palad, S&T Media Service)

POVERTY ALLEVIATION THROUGH GREEN TECHNOLOGY RESEARCH AND INNOVATION



DOST - NRCP Achievement awardees (L-R) Dr. Vicentita Macuja-Cervera for Governmental, Educational, and International Policies; Dr. Remigio M. Olveda for Medical Sciences; Dr. Macrina Tamayo-Zafaralla for Biological Sciences; Dr. Ernesto M. Pernia for Social Sciences; Dr. Jeffrey De Vera represented Dr. Roland V. Sarmago for Physics; Dr. Alicia M. Aguinaldo for Chemical Sciences; Dr. Erlinda Kintanar-Alburo for Humanities; Dr. Edanjarlo J. Marquez for Earth Sciences; Dr. Joseph S. Masangkay for Veterinary Medicine. The awarding ceremony was held during the 79th NRCP General Membership Assembly, with the theme "Poverty Alleviation through Green Technology Research and innovation," held on March 7, 2012 at the Hotel Sofitel Philippine Plaza. DOST's NRCP established 1933, is now considered as the oldest scientific collegial body in the country and in the Asia-Pacific. From 144 pioneering scientists, NRCP now has 2,809 member researchers, scientist, technologists spread over 13 scientific divisions -- based on the official and latest tally on membership here and abroad. (Photo by DOST-NRCP)

PNRI expert...from page 28

clotting device for military usage derived from kappa-carrageenan, PVP-chitosan bioimplant for endoscopic treatment of vesicoureteral reflux or the condition in which urine travels backward from the bladder to the upper urinary track; low-cost biofertilizers also from chitosan and carrageenan; and water pollutant absorbers from radiation-grafted abaca and water lily fibers. The PVP-chitosan bioimplant has won four first place awards as best paper and poster presentation in different contests for urological and surgical societies.

She also spearheads the R&D program for the electron beam processing facility that will soon be installed at PNRI, which according to her, has various industrial applications.

So far, Dr. Abad has published 34 research papers—15 of which were ISI refereed journals—and also served twice as a Project Lead Country Coordinator for the International Atomic Energy Agency (IAEA) for projects involving applications of radiation processing technology and development of advanced materials for the protection of human health and environment.

She relates her sense of ethics to St. Pedro Poveda's belief that science and virtue are complementary constructs. She also has faith in Filipinos' innate prowess — that we can achieve much if only adequate resources and equipment are available.

PH can...from page 27

to plan a roadmap for the four high-growth areas.

During a press conference held last week, Ms. Gillian Joy Virata, BPAP executive Senior Executive Director, said that eight in ten companies that visit the country will do business here, a recognition of the country's skilled workers and favorable business climate.

Driving the growth of the huge market for healthcare information management outsourcing is the steady growth of the aging "baby boomers" in the United States and the recently signed landmark healthcare law "Patient Protection and Affordable Care Act" under the Obama administration, said Mr. Melchor.

Top cities...from page 27

Further, the report highlights the proactive ICT councils as the single most influential factor in accelerating the development of next wave cities. "We encourage ICT councils to play an active role in improving the business environment in their areas," said Alejandro Melchor III, deputy executive director for ICT Industry Development of DOST-ICTO.

Areas outside Metro Manila have become more attractive because of less cost of operations. Locating in the provinces will also enable the BPO industry to increase jobs in the sector to 1.3 million in

"Industry estimates that at least \$530 billion dollars are needed to implement the measure and that means business for outsourcing players like the Philippines given our readily-available pool of certified medical workers," explained Mr. Melchor.

"A little retooling of skills is needed to make the Filipino medical workers IT-savvy," he said.

In a press statement, BPAP Chairman Alfredo Ayala said that the outsourcing industry will grow to \$25 billion in export revenues in 2016. By that year alone, the sector will generate 1.3 million direct and 3.2 million indirect jobs.

the next five years. One third of these jobs will be in cities outside the metro.

BPO operations in the provinces will provide more employment and other opportunities for the locals, and ease the pressure on salary and rental rates in the established hubs. Such factors will keep the Philippine IT-BPO Industry globally competitive, the report said.

More information on the identified locations are highlighted in the DOST-BPAP report "Next Wave Cities 2010-2011."

First S&T search engine in the country launched

By. ALLAN ACE ACLAN
S&T Media Service, STII

IN CELEBRATION of its silver anniversary, the Department of Science and Technology's Science and Technology Information Institute (STII) launched the first Philippine science and technology search engine. Dubbed science.ph, the STII-developed search engine went live on February 24, 2012 at the Arts in the City located at Bonifacio Global City, Taguig City, Metro Manila.

science.ph is both a search engine and a comprehensive website that contains Philippine S&T information and databases. The site is geared to provide access to a great variety of science-related news, articles, blogs, photos, and videos, as well as to deliver accurate S&T information for

Filipinos. This explains its tagline "Science for every Juan."

"The science.ph project is a testament to DOST's commitment in promoting science and technology awareness in the Philippines," DOST-STII Director Raymund Liboro said. "It is the product of STII's hard work for many years of compiling specialized information and developing systems to store and update these data, and making them accessible to users."

"science.ph was developed for the use of researchers, teachers, students, communicators, or any individual who wants to know more about the latest

breakthroughs and developments in the Philippine science scene," added Aristotle Carandang, leader of the Changing the Mindset program that includes the development of science.ph.

According to Alfon Narquita, science.ph assistant project leader and head of STII's IT unit that developed the site, science.ph works by collecting information from different sources like government institutions, academe, NGOs, and private sectors. When it comes to news content, science.ph uses RSS, short for Really Simple Syndication, to automatically feed content from DOST websites to science.ph. News from other sites are obtained through crawling or automatic gathering

DOST awards outstanding science journalists

By. ALLAN ACE ACLAN
S&T Media Service, STII

THE DEPARTMENT of Science and Technology through its media arm, the Science and Technology Information Institute, gave recognition to the country's top science journalists and media advocates through the conferment of the Gawad Jose L. Guerrero (DOST Media Awards) on February 24, 2012 at the Arts in the City in Fort Bonifacio, Taguig City.

The award is named in honor of Dr. Jose L. Guerrero, former director of the DOST-STII, who exemplified the genuine desire to promote S&T information through various means. Dr. Guerrero served as STII director from 1990 to 2004.

Awardees for the Professional Category were Paul Icamina of Malaya for print, Michael Balaguer of Diaryong Tagalog Online for cyber press, and Laila Tumaan of DZEM for radio.

The Institutional Award went to the Philippine Star for print, Filquest Media Concepts Inc. (loqal.ph) for cyber press, and Philippine Broadcasting Services for radio. Meanwhile, the JLG award for Information Officer of the year went to Adelia M. Guevarra of DOST IV-A.

DOST also gave special citation to



The Gawad JLG awardees with Dr. Jose L. Guerrero (center, in blue)

GMA 7 and ABS-CBN networks for their commitment in bringing science and technology news to the public, especially for their intensive coverage of the Fukushima Nuclear Power Plant incident.

Special citation was also given to Kuya Kim, or Alejandro Atienza, for his role in delivering timely weather updates in a very interesting and informative way that appeals to a wide audience, especially in his delivery of weather news.

Multi-awarded broadcast journalist Jessica Soho also received a special citation

for featuring "Juan Time," the DOST's campaign to promote the Philippine Standard Time, in SONA, a GMA News TV Program.

The morning shows Umagang kay Ganda of ABS-CBN Ch.2 and The Morning Show of PTV 4 also received special citations for their commitment in featuring the latest science and technology news, as well as their support in promoting DOST technology solutions in their program segments.

The Discovery Channel also received

next page

First S&T... from page 36

of information from the Web.

Narquita also emphasized that what makes science.ph distinct from popular search engines today is that it sources information through "hidden web." Unlike other search engines that skim through the Web, science.ph uses a deep search system that looks into databases. The "hidden web" contains databases not normally indexed by search engines, unless they have partnership with the content provider.

STII has indexed a number of Philippine S&T databases over the years and all of these can be accessed through science.ph. Partnership with various institutions also gave access to science.ph to search through their databases.

The search engine has indexed almost 300,000 records from 56 institutions -- academe, government, NGOs, private consortia, and others. "We have collected over 2,000 news articles from government institutes and online sources," Narquita said.

Aside from news and other articles, science.ph also features photos and videos, press conferences via online streaming, promotional and instructional materials, including technology videos for livelihood.

science.ph is a one-stop shop for science information in the Philippines. Syndication has created a new pipe for disseminating information, thus the science.ph content is expected to expand more as other institutions will be invited to share their S&T information and materials to the site.

"Advertisements or information on science related activities, events, promotions, and programs will also be accommodated in science.ph," according to Narquita.

The science.ph logo consists of blue and red semi-circles connected to each other, representing a continuing search for knowledge through strong partnership.

The middle eight-ringed yellow atom with a solid nucleus symbolizes the firm core of the Philippine science community; with three electrons moving about symbolizing the action, freedom and dynamism of Filipinos.

"It is also an artistic take on the Philippine flag but does not, in any way, dishonor it as it is one true national symbol of the Filipino pride," Carandang said.

Winners of the 2012 DOST-Wide Photo Contest

FIRST PLACE

A Glimpse of the Future.

A child stands over a sea of berets of eminent Filipino scientists and tries to get a first-hand experience of the feeling of being one of the bests in Philippine science and technology. By Dexter Bautista of DOST-NAST.



SECOND PLACE

Soaring High in Dawning Sky.

Hot air balloons may now just serve as an artistic spectacle and fancy recreation, but once they were wonders, that later on fuelled centuries of scientific breakthroughs on Aviation and Space Technology. Truly, a soaring beacon of hope to what man is capable of achieving through Science. By Marvin Eric dela Cruz of DOST-PCIEERD.



THIRD PLACE:

Water-Rocket Design Project.

PSHS-CARC students dream of launching real rockets in the future. By: Michelle Dalayon of DOST-PSHS-CAR.



DOST awards... from page 36

a special citation for being DOST's media partner in its "Juan Time" drive.

"DOST has become more proactive in promoting the solutions that Philippine S&T offers to the country's pressing problems. And the media have been our faithful partner in this endeavor," said DOST Sec. Mario Montejo. "Through the Gawad JLG and DOST's Special Citations, we express our gratitude to our media partners and,

at the same time, give recognition to the excellence of their works."

The Gawad JLG and the special media citations were highlights of the DOST-STII's silver anniversary celebration that had the theme Inform to transform. On its 25th year, STII is poised to deliver relevant, timely, and helpful S&T information that will help change lives of Filipinos.

Ignite the Mind 2.0

fires up the DOST family

By FRAMELIA V. ANONAS
Photos by JOY M. LAZCANO

With reports from:
Allan Ace Aclan
Luisa Lumioan
Allan Mauro Marfal
Ceajay Valerio

“Ignite the mind is very similar to innovation—it is a mindset, a discipline, a commitment to keep on improving the way we do things.”



Registration began promptly at 12 noon. The procedure was much more convenient compared with ITM last year because only one focal person is allowed to register the agency/office representatives.

All roads led to DOST Main on December 21, 2011 as most of the DOST family gathered to celebrate the year's biggest get-together event of the department. Ignite the Mind 2.0 was a year-ender-talent showcase-Christmas Party rolled into one.

Ignite the Mind events encourage all offices to participate in the program in various ways. This year, bosses and staff alike strengthened their bonds by participating as equals in the dance presentations, lantern parade, raffle, and sky lantern release.

Secretary Mario Montejo emphasized that Ignite the Mind is a critical requirement in pursuing the DOST agenda for the coming years: “Ignite the mind is very similar to innovation—it is a mindset, a discipline, a commitment to keep on improving the way we do things. I request all of us in DOST to make this our new year's resolution.”

Giving a quick peep into the incoming year, Sec. Montejo revealed that DOST will build flood sensors in the major river systems in the Philippines. The water level sensors will give the rate of increase of water level, and the estimated time before it reaches critical level in real time. Two or more water level sensors in a river will aid in flood forecasting.

Montejo added that the water level sensors will be locally developed, and this will bring down the cost to P150 million for 1,000 water level sensors compared with the P1.5 billion cost of the existing water level sensors in the country. “This project shows



Holy Mass at 2:30 PM was celebrated by Fr. John Andreau, SDB.

that DOST adheres to its mandate of making science and technology work for the people,” he added.

Overall, ITM 2.0 bolstered the esprit de corps of the whole DOST system, recharged everyone from all the hard work put in for the year 2011, and rekindled the passion to work more heartedly for Philippine S&T for the coming 2012



STII people cheer for the success of the year-ender activity.



Sec. Mario Montejo's entrance for his report was done via backdoor using projection panels that parted at the middle as the Secretary was called onstage.

The program began at about 4PM with STII Director Raymund Liboro and NAST Director Luningning Samarita as masters of ceremony. Director Liboro gave a short welcome message, followed by the first of a series of Audio-Visual Presentations featuring DOST Directors relating their plans for 2012. Portions of the AVP were shown in various points of the program.

On DOST Gut Talent, Mr. Aristotle Carandang of STII and Ms. Ruby Cristobal of SEI took over as hosts. Judges of the talent contest portion were Mrs. Rosario Montejo, wife of Sec. Mario Montejo, Ms. Abigail Rebong of Philippine Star, Ms. Janice Ruiz of PSci Journ and Mely Tenorio of DZRB.

The QC Cluster (composed of TRC, PHIVOLCS, PNRI, PSHS, PAGASA, ICTO) once again took the first prize with the total score of 97.0. The Winning cluster blasted the whole DOST quadrangle with its OFW inspired dance presentation with the combination of music from the 80's. It was about patronizing science for the Filipinos in the spirit of Christmas. Directors from DOST QC cluster performed the current dance craze "Teach me how to Dougie," which gained the most applause from the DOST crowd.



Second place went to East Bicutan cluster with 96.25 points. The cluster rocked the stage with its very festive look of tribal dance combined with extreme stunts.

Los Baños cluster got third place with 90.25 points. This cluster entertained the audience with its fusion of ethnic dance and

modern music, showcasing how science affects the socio-economic lives of the Filipinos.

Western Bicutan garnered 88 points with its "daring" performance.

On the Lantern Parade, FNRI got the top prize. The concept designed was a huge pot with lid lantern and a background made of bamboos. According to the description, the pot is used to cook their mission, projects, programs and advocacies of FNRI like "Sugpuin ang Malnutrisyon", nutrigenomics and brown rice with Dr. Mario V. Capanzana, FNRI Director, as their master chef.

TAPI's lantern, a proton-neutron-like with a built-in monitor that shows their work and achievements got second place, while SEI's lantern is a giant toga hat with diploma, gifts and snow effect notched the third place.



Lantern Parade entries reflect the DOST people's creativity and ingenuity.

On the raffle, 200 minor prizes of P500 gift certificates were drawn during the program, as with the other minor and major prizes. There were some prizes unclaimed and



Raffle draws never fail to excite the audience.

it was supposed that the DOST personnel whose names were drawn were on the field. However, upon verification, some of the winners were not on the field so the Raffle Committee had to re-draw the unclaimed prizes.

The audience stayed where their respective agencies were assigned. Others

who could not be accommodated on the designated areas sat on the front stairs of the DOST-Main building, as well as on its hallways and ledges.

Only the right side and the back part of the building held the trade booths, though these were flocked by many people, especially those that are selling food.



The release of the flying lanterns led by STII was done and participated in with solemnity. The sky lanterns were released in to the pitch dark sky, symbolizing the infinite capability of the human mind to create and innovate, research and develop. In this special night, the DOST family ignited the mind for S&T development.

Vox populi

By GEORGE ROBERT E. VALENCIA III



What do you think about the Ignite the Mind Celebration?

"I am thankful for this event because different agencies come together (Nagpapasalamat ako sa ganitong okasyon dahil nagkikita ang mga iba't ibang agencies)."

Ruben Mercado
Maintenance Section, FNRI

"It is enjoyable because our office's different divisions rarely have the opportunity to come together due to busy schedule (Masaya kasi nagsama-sama kami kahit iba't ibang division kasi sa sobrang ka-busy-han sa office hindi na kami nagkikita-kita), it's my first time and it's been good."

Nena Carina Española
Science Research Specialist, ASTI

What did you like most about ITM2.0?

"I enjoyed the DOST Gut Talent because of the teamwork going on among the members."

Dr. Alumanda Dela Rosa
Director, PNRI

"The stage is nice; it is better compared to last year's (Maganda yung stage, mas maganda ngayon compared last year)."

Joel Lomugdang
Driver, SEI

"Lantern parade agencies are able to express their different mandates, functions, ideas and roles for economic development."

Kent Abad
Science Research Specialist,
DOST-MIMAROPA

"Lantern showtime... it is very exciting because this is the first time for such an activity in DOST and it is good that most agencies participated this year (very exciting kasi ngayon lang nangyari yan sa DOST, maganda kasi halos nag-participate lahat ng DOST agencies)."

Hilario Sanchez Jr.
Property Section, FNRI



"I really liked the lighting of the Sky Lanterns, they were really the highlight of the event."
Marvin Mina
 Project Engineer,
 DOST-Central Office

"I liked the way the hosts handle the flow of the show."
Dremon Ramon Salas
 Science Research Analyst,
 FNRI

"Aside from the performance of East Bicutan, the priest's message was very meaningful."
Jovito Rey E. Gonzales
 Investment and Business
 Operations Division Chief,
 TAPI

"What I Liked most was the presence of the spirit of Christmas, and DOST's vision and plans were clearly proclaimed."
Will B. Lopena
 Housekeeping Supervisor

Do you have any comments or suggestions?

"Lantern parade agency-participants are able to express their different mandates, functions, ideas and roles for economic development."
Kent Abad
 Science Research Specialist,
 DOST-MIMAROPA

"Lantern creativity should be the focus, so we can do away with the lantern presentations or "showtime". Judges should also be mixed—not of the same age—because people have different preference and appreciation."
May S. Rico
 Technical Services Division Chief,
 PTRI

"There should have been a big tent for the rain."
Ruby Dela Vicencio
 Science Research Specialist, NRCP

"I thought the Board of Judges was biased, I suggest that for next year the organizers should not pick people who are connected to DOST."
Leni Ocampo
 Admin Assistant, PCAARRD

"The judges should have been more mindful in giving comments to groups, and should have been briefed beforehand about the different mandates and thrusts of DOST agencies."
Grace Katigbak
 Science Research Assistant, FPRDI

"I hope next year there will be more food (Sana sa susunod damihan ang pagkain)."
Dominica
 Science Research Assistant,
 ITDI

"The event should have started in the morning, so that all of us would not have to stay late at night."
Rosario D. Balde
 Administrative Officer,
 DOST-Central Office

"The stage was excellent, but it could do with a band (Magan-da yung stage, pero sana may banda)."
Jeffrey De Leon
 Science Research Specialist,
 MIRDC

"I hope they give bigger cash prizes, and make sure the raffle will not take too long."
Allan Loza
 Resident Volcanologist,
 PHIVOLCS

"Maybe it will be better to invite non-DOST people, also ordinary ones, so they can watch what is happening inside. All I saw were DOST employees (dapat siguro may mga taong taga-labas, yu'ng hindi part ng DOST... normal na mga tao para makita nila nangyayari sa loob, kasi puro DOST lang nakita ko...)"
Mark Anthony Quillos
 Runners and Cleaners, NAST

Was the event a success?

"Yes. I would like to commend DOST-STII for spearheading ITM 2.0, because it develops camaraderie and solidarity among DOST agencies."
Dr. Alumanda Dela Rosa
 Director, PNRI

"Overall the result was great and we hope that we can consistently deliver in all aspects for the coming years—presentations, prizes, gimmicks, and technical aspect."
Gerry de Jesus
 Science Research Specialist,
 STII

"I feel so happy about everything... there were a lot of prizes, we saw a lot of improvement—costumes and presentations, and involvement of employees. Congratulations to the organizers, Director Raymund Liboro and his team. Everything was so nice. There will definitely be improvement next year, no end to being excellent."
Ma. Lourdes P. Orijala
 Assistant Secretary for
 Technology Transfer



DOST Secretary Mario G. Montejo addresses the media at a press conference at the National Computer Center in Diliman to discuss the Department's plans and programs in support of the country's business process outsourcing sector, which was rocked by a bill filed at the US House of Representatives seeking to tax American firms that outsource their business processes to offshore organizations. **(Alan Taule, S&T Media Service)**



The Philippine Nuclear Research Institute's 39th Atomic Energy Week. DOST-PNRI Director Dr. Alumanda M. Dela Rosa, with Deputy Director Dr. Corazon C. Bernido, explains various pieces of radiation dosimetry equipment (included in the exhibits) to former DOST Secretary Dr. Filemon A. Uriarte, and former Chief Science Research Specialist Dr. Florencio Isagani S. Medina III. **(Photo by Gerardo Palad, S&T Media Service)**



DOST Secretary Mario G. Montejo and Metro Manila Development Authority Chair Francis N. Tolentino, together with PAGASA Administrator Nathaniel Servando (far left), sign the Memorandum of Agreement to rehabilitate MMDA's flood monitoring system. Under this agreement, DOST shall roll out to MMDA at least 38 water level monitoring station (WLMS) units and at least 13 automated rain gauge (ARG) units, and retrofit at least two data loggers to MMDA's rain gauge monitoring stations to boost its current flood monitoring capability. For its part, PAGASA shall be tasked to train MMDA and LGU personnel on the proper use and operation of the WLMS and ARG units and calibrate the two data loggers in coordination with the MMDA. **(Alan Taule, S&T Media Service)**



Juan time for New Year. From left: Chief Creative Officer of BBDO GUERRERO David Guerrero, Pizza Hut Marketing Manager Raymund Nobleza, 2011 Miss Universe 3rd Runner Up Shamcey Supsup, 2010 Miss Universe 4th Runner Up Venus Raj, Discovery Channel representative Jacquie Ruby, and DOST Science and Technology Information Institute Director Raymund E. Liboro encouraged every Filipino to set their watches in sync with Philippine Standard Time or Juan Time at the pre-New Year countdown held last December 30, 2011 at the Araneta Parking Center. **(S&T Media Service)**



Photo highlights of the PHIVOLCS Writeshop for the Revision of the Broadcaster's Info Chart for Emergency Preparedness held 15 February 2012. Organized by the DOST's Philippine Institute for Volcanology and Seismology, this activity seeks to update and expand the scope of the standard manual for media agencies and practitioners in reporting accurate, factual news accounts of earthquakes, typhoons, and other natural calamities. The writeshop was attended by representatives of PHIVOLCS, PAGASA, Office of Civil Defense (OCD), Mines and Geosciences Bureau (MGB), Philippine Information Agency (PIA), and the Science and Technology Information Institute (STII). **(Alan Taule, S&T Media Service)**



Academician Emil Q. Javier, president of the National Academy of Science and Technology (NAST), addresses the participants and delegates to the Round Table Discussion titled "Water Rights and Water Wrongs: Towards Good Water Governance for Development" at the Hyatt Manila. Organized by NAST, an advisory body of the Department of Science and Technology, the event gathered scientists, policymakers, and stakeholders to discuss and explore the latest issues, trends, and challenges pertaining to the urgency of protecting water rights as a building block for national development. **(Alan Taule, S&T Media Service)**

DOST Secretary Mario G. Montejo joins hands with Mr. Urbano "Banit" S. Caasi (center), President of the Rotary Club of Manila (RCM), and Atty. Ricardo R. Blancaflor (right), Director-General of the Intellectual Property Office, after the ceremonial signing of a Tripartite Memorandum of Understanding to formalize the launch of the Scientific Inventions, Discoveries, and Innovations (SIDI) Awards during the RCM Luncheon Club Meeting at the Manila Polo Club, Forbes Park. At far left is the Hon. Roberto Pagdanganan, chair of the SIDI Awards Committee. The SIDI Awards seeks to recognize the role of inventions, discoveries, and innovations toward the development and progress of the Philippines. **(Alan Taule, S&T Media Service)**



@DOST, we offer solutions.



science.ph

science for every

Juan

Please visit

www.science.ph

Department of Science and Technology