



Making science
work for you

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DOST's Admatel helps build a stronger semicon industry in PH

By Joy M. Lazcano
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Clients for the country's first state-of-the-art electronics and semiconductor test lab, the Advanced Materials Testing Laboratory (ADMATEL) of the Department of Science and Technology (DOST), are expected to double this year as the global electronics and semiconductor (S&E) industry sees a stronger outlook.

This was learned during DOST's media briefing "Agham na Ramdam" at the ADMATEL facility in DOST Complex, Bicutan, Taguig City.

"It has been two years since President Aquino came here to inaugurate this facility which is DOST's contribution to invigorate our local manufacturing industries," says DOST Assistant Secretary Raymund E. Liboro. "And the public should know the strides that ADMATEL had since then."

ADMATEL's services, since the lab opened its doors in 2013, have steadily picked up the pace as clients from the local S&E industry send sample hardware for testing and analysis in the facility.

The laboratory offers local testing and analytical services on electronic chipsets,
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Laboratory personnel of ADMATEL are now working double-time as clients in the electronics and semiconductor industry have steadily picked-up.

Montoya gets Gawad Award for initiatives in Health and Medical Research



By Framelia v. Anonas
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Dr. Jaime C. Montoya, executive director of the Philippine Center for Health Research and Development (PCHRD-DOST), received the prestigious Career Executive Service award during the Annual CES Conference held at the Waterfront Cebu City Hotel in November last year.

Dr. Montoya initiated the creation of the ASEAN-Network for Drugs, Diagnostics, and Vaccines Innovation (ASEAN-NDI) that enables R&D experts, government administrators and scientists in the region to work together to discover and develop health technologies that will address health problems and push forward the health industry among the ASEAN member states. Said health technologies include diagnostic tools, strategies, drugs, traditional medicine, vaccines and functional tools.

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virtually slashing rates by 40 percent. Also, ADMATEL has a shorter turn-around time of 24 hours on test results compared with a 5- to 6-day turn-around time when done outside the country. This means chips productions resume with less delays.

Reports say that local companies are spending \$9-18M annually in tests and analysis which are the identified gaps in a study by the Nomura Research Institute.

According to ADMATEL General Manager Virgilio Aguinaldo, in 2013 alone, the electronics testing lab has received more than 40 electronics components for failure analysis and materials characterization from various S&E companies.

Aguinaldo added that the number of client companies has doubled since then. He said that he is expecting to serve 170 clients this year.

Surprisingly, Aguinaldo reveals that 38 percent of ADMATEL's clients came from outside its target industry. Companies from the allied industries such as construction and energy, medical, and automotive industries have been sending samples for analyses.

"We had a client from the auto industry who had us test a specific model because of the model's lack of power when driven off-road. And the result showed us that the unit's oil filter had foreign objects that block the air flow," explains Aguinaldo.

ADMATEL is looking at a round-the-clock operations once the demand for testing and analysis will rise in the next few months.



ADMATEL does five types of testing in the facility. It conducts failure analysis to determine the cause of the product inefficiencies. It also undertakes process development testing to help manufacturers optimize their procedures. Also, ADMATEL aids in product development, quality inspections, and research and development.

Aguinaldo says that the laboratory is open for R&D collaboration with the academe. "That is what we really are encouraging our students to do. Actually, we have students coming here to have their hardware tested for their thesis. Some are joining robotics events," explains Aguinaldo.

For students, Aguinaldo says that ADMATEL is offering a socialized fee while clients from the micro, small, and medium enterprises are billed at a 20-percent reduced rate.

The lab has already applied for ISO 17025 accreditation for its three laboratories.

ADMATEL is one of DOST's initiatives in strengthening the manufacturing industry. With the S&E as one of the country's leading and important industries, and giving support to the manufacturing industry, it generated \$21 billion in 2013.

DOST is now pushing the industry to hit \$50 billion by the year 2016 and become a major player in the global electronics supply chain.

"Agham na Ramdam", organized by the DOST-Science and Technology Information Institute, is a series of media briefings highlighting DOST program milestones and updates.

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

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

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

He also established the Philippine Health Research Ethics Board, the highest policy-making body for health research ethics in the country. The establishment of the ethics board guarantees the highest ethical practice in the

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

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

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

Recognized for their outstanding leadership and exemplary contributions to social development and nation-building, the presidential honorees were Manuel G. Co, Administrator of the Parole and Probation Administrator (PPA), Nestor D. Domenden, Regional Director of the Bureau of Fisheries and Aquatic Resources (BFAR - Region I), Rowen

Gelonga, Regional Director of the Department of Science and Technology (DOST- Region VI) and Dr. Montoya.

President Benigno S. Aquino III, while conferring the Presidential Lingkod Bayan Award to the eight outstanding public officials, said, "Sila ang mga Pilipinong tumatawid mula sa pagiging lingkod-bayan, tungo sa pagiging isang lingkod-bayani. (They are the Filipinos who transcend their role of humble public servants to become public heroes).

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

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



Researchers from the Department of Science and Technology – Industrial Technology Development Institute receive their prestigious award from Civil Service Chair Francisco T. Duque III (6th from left). Proudly wearing their medals, the researchers are (from left) Maricar B. Carandang, Alicia G. Garbo, Annabelle V. Briones, Dr. Nuna E. Almanzor, Hermelina H. Bion and Josie L. Pondevida. Others in picture are Dr. Maria Luisa Salonga-Agamata (leftmost) and Comm. Robert S. Martinez (5th from left), both of the Civil Service Commission, and Tanodbayan Conchita Carpio-Morales (rightmost) of the Office of the Ombudsman. Inset: The Ovicidal-Larvicidal trap system.

DOST Mosquito Trap Research bag Dangal Ng Bayan Presidential Award

By FRAMELIA V. ANONAS
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A team of researchers from the Department of Science and Technology – Industrial Technology Development Institute bagged the highly-respected Dangal ng Bayan Presidential Award which was conferred during the 114th Philippine Civil Service Anniversary last month in Malacañang Palace, Manila.

The team, composed of team leader Dr. Nuna E. Almanzor, Hermelina H. Bion, Annabelle V. Briones, Maricar B. Carandang, Alicia G. Garbo, and Josie L. Pondevida, was awarded for developing the Mosquito Ovicidal-Larvicidal (OL) trap system.

The OL trap's major accomplishment is that it "significantly reduced mosquito densities and dengue virus transmission in various schools and communities nationwide," according to the Civil Service Commission.

Now commercially available, the OL trap is able to contribute to the government income. Other countries with high dengue incidence have also expressed interest in the technology.

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

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

According to the research team, the laboratory and field studies of the OL trap system has been published in the *Acta Medica Philippina* Volumes 46 and 47, a peer-reviewed scientific journal published by the University of the Philippines Manila and the Philippine Council for Health Research and Development (PCHRD).

OL trap updates

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

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

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

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

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

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

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

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

DOST awards UP prof for research in disease-causing microbes

By Angelica A. de Leon
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Dr. Windell Rivera, associate professor of microbiology of the University of the Philippines, won this year's Eusebio Y. Garcia Recognition Award for Molecular Biology and Molecular Pathology by the National Research Council of the Philippines. (Photo by Henry de Leon, S&T Media Service)

Dr. Windell L. Rivera, associate professor of microbiology of the University of the Philippines (UP) Diliman, won the 2014 National Research Council of the Philippines (NRC) Eusebio Y. Garcia Recognition Award for Molecular Biology and Molecular Pathology. Dr. Rivera received the award during the NRC's "Symposium on Dengue Researches and 81st Founding Anniversary" held last month at the Bayleaf Hotel in Intramuros, Manila. This conferment also earned him the NRC Medallion and Plaque of Excellence and a cash prize of P25,000.

Dr. Rivera ranks among the most celebrated local medical scientists and experts on molecular biology of various disease-causing microorganisms. His pioneering work in parasitology significantly augmented limited information on a variety of pathogens, in particular, the locally abundant swine-derived *Balantidium coli*, a harmful protozoan which Dr. Rivera successfully characterized at ultra structural and molecular levels.

Another of Dr. Rivera's earliest and most significant works was his molecular differentiation of pathogenic and non-pathogenic species of *Entamoeba*, a microbe morphologically indistinguishable under the microscope that has caused many misdiagnoses in the Philippines, especially in rural areas.

Dr. Rivera's subsequent researches on other pathogens, such as *Blastocystis hominis*, *Trichomonas vaginalis*, *Salmonella* spp, *Cryptosporidium* spp., among several others, have



Dr. Windell Rivera, associate professor of microbiology of the University of the Philippines, won this year's Eusebio Y. Garcia Recognition Award for Molecular Biology and Molecular Pathology by the National Research Council of the Philippines. (Photo by Henry de Leon, S&T Media Service)

likewise provided useful baseline data and paved the way for future medical studies.

Now serving as director of the UP Natural Sciences Research Institute, Dr. Rivera has published, so far, an impressive roster of 49 foreign-indexed researches, particularly in Thomson Reuters and Scopus. He also published eight research notes in several high-impact international journals, exemplifying Filipino ingenuity in S&T and research. This feat also recently earned the professor distinction as the "most cited author in the whole UP System."

A true educator, Dr. Rivera has ensured that his researches are effectively communicated to students. In UP, he continues to inspire a new line of young scientists to tread on with their careers

and likewise help them produce quality researches. It is no surprise that he is now a favorite thesis adviser of undergraduate and graduate students at the UP College of Science.

"Yearly we honor exemplary Filipino scientists and researchers—mostly members of NRC—because awards like the Eusebio Y. Garcia Award impress on our country's gems that society looks up to them and their achievements," said Dr. Carina G. Lao, NRC executive director.

"More than to just say 'keep up the good work', we also want to inspire and encourage the next line of researchers to push on in their pursuit of academic and research excellence," Dr. Lao added.

"I am deeply honored and my sincerest gratitude to the NRC. I did not make the journey here alone because I share this with my graduate students and research associates who supported my curiosities in understanding the molecular biology of protozoan parasites common in the Philippines," said Dr. Rivera.

"While awards are wonderful to receive, just knowing that the hard work I'm doing in the lab has an impact to the society is truly rewarding enough. Receiving the 2014 Eusebio Y. Garcia Award somehow validated the value of our work in the laboratory," he added.

Since 1989, a total of 12 individuals who excelled and gave outstanding contribution to molecular biology and pathology have been awarded by NRC. The Philippines' premier collegial advisory body in basic research named the said award after a distinguished Filipino scientist who was among the pioneering medical researchers in the country. Dr. Eusebio Y. Garcia is also known as "the first Asian Winner" of the International A. Cressy-Morrison Prize for Natural Science in 1947, the highest award of the New York Academy of Sciences at that time.

InFocus



ATOMS and STARBOOKS. Dr. Yukiyo Amano, director general of the International Atomic Energy Agency (IAEA), notes with pleasure that this STARBOOKS, or Science and Technology Academic and Research-Based Openly Operated Kiosk Stations, unit is beefed up with nuclear technology materials in addition to its science and technology content. Installed at the San Francisco National High School in Quezon City and the Quezon City Science High School libraries, two STARBOOKS pods provide to the two schools' combined 7,000-student population a variety of S&T information materials, including Encyclopedia Britannica and IAEA produced resources. STARBOOKS, developed by the Department of Science and Technology – Science and Technology Information Institute, is a digital library that operates offline and serves as a very vital knowledge resource in places yet unreached by the Internet. With Dr. Amano is the school librarian and Dr. Amelia Guevara (right), DOST undersecretary for research and development. (S&T Media Service, DOST-STII)