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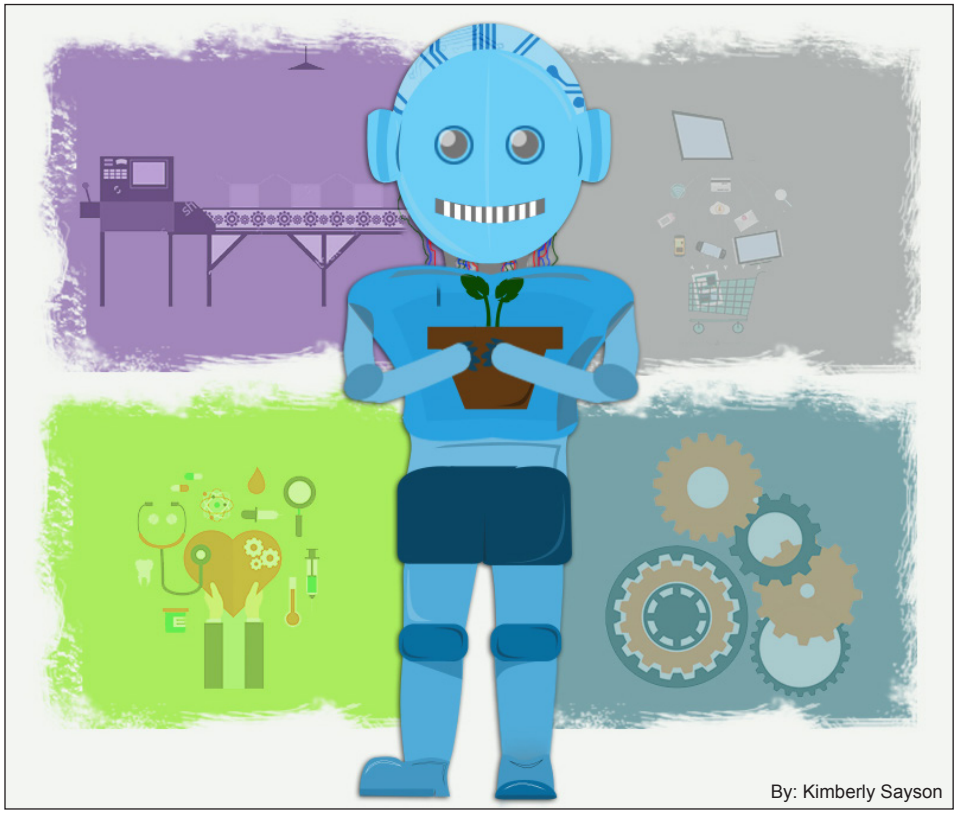
Making science work for you

Inside

DOST eyes research on artificial intelligence

By Joy M. Lazcano
S&T Media Service, *DOST-STII*


By: Kimberly Sayson

The Department of Science and Technology (DOST) Secretary Fortunato T. de la Peña said during the National Research and Development Conference that the science department plans to include artificial intelligence (AI) on its research and development agenda starting 2017-2022.

The National R&D Conference is a prologue to the crafting of a Harmonized National R&D Agenda (HNRDA) for science and technology, which intends to unify all R&D projects and initiatives in line with the Philippine Development Plan called "Ambisyon Natin 2040."

"Now we would like to pursue new areas, not necessarily new in the global sense but as far as local research and development is concern and that is in the fields of artificial intelligence and space technology," says De la Peña.

He added that in the 80s, he wrote a scientific article on the future of technology where AI had been prominently described as the next wave of technological development in the global technological space.

However, the retired UP professor said that the government then had to focus more on other priority areas of development.

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DOST programs help entreps yield more innovative products and services

By Allan Mauro V. Marfal
S&T Media Service, *DOST-STII*

Secretary Fortunato T. de la Peña of Department of Science and Technology (DOST) said that innovation for inclusive growth has been the central idea of different programs of Department of Science and Technology (DOST) in recent years, particularly in supporting small and medium enterprises (SMEs) in the provinces.

"We have many local products and services, which are world-class, and DOST is recognizing this. That is why we are sharing all the resources and knowledge that we have to empower them to be innovative in improving and marketing their respective products," said Secretary de la Peña during the launching of Benito and Catalino Yap Foundation (BCYF) Innovation Awards held recently at Manila Polo Club in Makati City.

Sec. de la Peña shared that DOST, through its Small Enterprise Technology Upgrading Program (SETUP), had helped many SMEs in the countryside to improve the quality of their production and services, particularly in the areas of technology upgrading, packaging assistance, market research, and technology transfer. He said that through this support, DOST was able to create ideal environment for our SMEs to develop and introduce more innovative products and services.

"Innovation has provided numerous impacts to our country, particularly on the SME's side. It could stabilize businesses, it could generate income and revenue, and most importantly, it could generate employment opportunities for people in the countryside," Secretary de la Peña said.

Sec. de la Peña believes that the launching of BCYF Innovation Awards will help more in encouraging and motivating people to really contribute towards innovation.

On other hand, University of Asia and the Pacific (UA&P) President Dr. Winston Conrad B. Padojinog also emphasized that innovation is one of the most important facets of development. According to him, as the object of development is always on the people and the society which they

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Moreover, the DOST-Philippine Council for Industry, Energy, and Emerging Technology Research and Development Deputy Executive Director Raul C. Sabularse confirmed the plan initiatives on AI by DOST.

Engr. Sabularse shared that DOST is in talks with other R&D institutions to develop a program on AI consisting of various project components.

"We are in the process of consulting experts and stakeholders to form a development program on artificial intelligence. This is something not totally new but it is a promising field for our researchers with applications in the industry," explained Sabularse.

He added that Filipino tech giant Dado Banatao is also involved in the talks but told that details are underway and may be included in the national R&D agenda for 2017.

Artificial intelligence is intelligence exhibited by machines that has the capability to perceive its environment and takes the necessary actions to a given situation and carrying out a positive outcome. It is simply understood as machines capable of mimicking human cognitive functions in doing simple to complex tasks.

The AI technology has a wide range of use including medical diagnosis, stock trading, robot control, remote sensing, scientific discovery, and toy making. Currently, some applications are no longer labeled as AI.

Sabularse said that DOST initially plans to use AI for the manufacturing industries to optimize mass production of goods in the country.

De la Peña added that the harmonized R&D agenda will pick research initiatives that are in line with the DOST's 11 research agenda namely R&D for pressing problems, productivity, tap and manage resource potentials, new technology applications across sectors, climate change and disaster risk reduction, R&D utilization through technology transfer and commercialization, production sector assistance, upgrading and improvement of S&T services, human resource development for S&T, capability building and regional R&D institution involvement, and industry and academe collaborations.

The DOST, through Executive Order 128 of 1987, is the sole government office mandated to direct all scientific R&D activities with potential benefits to the socioeconomic development of its people.

It is also mandated through Sec. 19, article 9 of RA 10055 that "DOST shall call for regular national conference of Government Funding Agencies and Research and Development Institutes in order to: promote multi-disciplinary, joint, and cross collaboration in R&D; coordinate and rationalize the R&D agenda; and harmonize all R&D agenda and priorities. "

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belong, it is very important that development must always be oriented towards the promotion of human dignity.

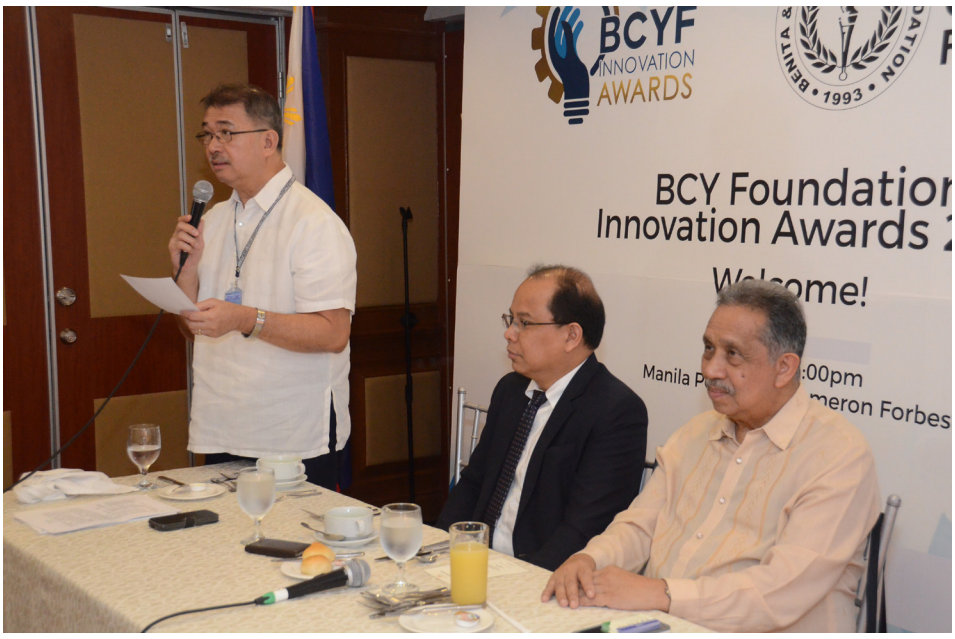
"Innovation gives us the opportunity to become better individual. For example, mobile phone is an innovation in social communication so we can experience faster and more efficient way of interaction with each other. Innovation has also revolutionized the field of education, particularly in remote areas. We could have seen how innovation has helped us harness more efficient use of our resources and we could have seen how energy prices fallen," said Dr. Padojinog.

Calling nominees for BCYF Innovation Awards

Meanwhile, the BCYF Innovation Awards will give recognition to the top innovative products and services, which made valuable contributions to improve the living condition of different communities, organizations and sectors. Innovation on government services, Small and Medium Enterprises (SMEs), Technical-Vocational Education, and Agri-Business are the four categories for BCYF Innovation Awards.

It will be co-organized by DOST, BCYF, University of Asia and Pacific, and TEVSAPHIL.

The general criteria are the following: The innovation must have been implemented in the last 12 months (October 2015 to October 2016) and in a functioning and registered organization or business. Additional to that, the person, or team applying must have been the one who conceptualized, and implemented the innovation. Lastly, the organization or business where the Innovation was implemented must be sustainable and viable.



(Left) Secretary Fortunato T. de la Peña of Department of Science and Technology (DOST) gives his message during the launching of Benito Catalino Yap Foundation (BCYF) Innovation Awards at Manila Polo Club in Makati City. He said that in recent years, DOST has been at the forefront of pushing innovation for inclusive growth, particularly to the small and medium enterprises in the countryside. The BCYF Innovation Awards will be co-organized by DOST, BCYF, University of Asia and Pacific and TEVSAPHIL. Also in the photo were: (middle) UA&P President Dr. Winston Conrad B. Padojinog and (right) TEVSAPHIL Chairman Brig.General Alex T. Escaño. (Text by Allan Mauro V. Marfal and photo by Gerardo Palad, S &T Media Service)

To get the application and nomination form for BCYF Innovation Awards, please go to this link https://docs.google.com/forms/d/e/1FAIpQLSfc1lfbZwQdnB65eFzg0m_husFr_yf0B8YUxbkiuKNjZd5x8w/viewform.

The deadline for application and nomination will be on December 01, 2016 and the awards night will be held on February 22, 2017. You may send your inquiries at bcy.innovation.awards@gmail.com.

Two women scientists get plums for novel research on "pandan" and fungi

By Joy M. Lazcano
S&T Media Service, *DOST-STII*

Two women scientists received awards from international science research communities for their novel research works which gave prominence to endemic plants.

In a recent press briefing, Dr. Maribel G. Nonato and Dr. Rizalina L. De Leon were presented by the Philippine Association for the Advancement of Science and Technology (PhilAAST), headed by current Department of Science and Technology (DOST) secretary Fortunato T. de la Peña, as recipients of this year's Gregorio Y. Zara Awards for Basic and Applied Research.

PhilAAST aims to promote more science and technology developments in the country through scientific and technological researches that contribute to the knowledge stock and national development.

Dr. Nonato was conferred the Gregorio Y. Zara Award for Basic Research for her pioneering works on the Phytochemistry and biological activities of Philippine genus *Pandanus* (Family Pandanaceae) or better known as pandan plants.

On the other hand, Dr. De Leon was given the Gregorio Y. Zara Award for Applied Research for her bioethanol production using local varieties of fungi as alternative sources of ethanol additives replacing food-based crops such as corn.

Dr. Nonato who is currently the Vice-Rector for Research and Innovation at the University of Santo Tomas has spent years in doing groundbreaking research on pandan.

Prior to her research, there was little known information about pandan. Locally, 20 out of the 450 species of this monocot plant grow abundantly in the country. Ordinarily, pandan leaves are used by locals in preparing sweet delicacies and beverages due to its sweet aromatic scent.

Dr. Maribel G. Nonato's novel works earned her the nickname 'Pandan Queen' from her students. (Photo by Henry De Leon, S&T Media Service, DOST-STII)

Dr. Rizalina L. De Leon's research has brought her to discover fungus and other waste products as feedstock for bioethanol. (Photo by Henry De Leon, S&T Media Service, DOST-STII)

In most occasions, you may find pandan leaf inside steamed rice pots.

In contrast, the closest the pandan has been considered as a herbal medicine was when the plant was included in pito-pito, a popular traditional herbal medicine concoction of seven endemic plants in the country used to relieve common illnesses.

In 1991, Dr. Nonato started her research focusing on the plant. She said, she chose pandan because little is known about the plant.

"If you are starting on your research," says Dr. Nonato. "Look for subjects that have little information so you can contribute to the development of new knowledge."

Her research led to the discovery of new secondary metabolites with new biological activities, which is the basis for its medicinal attributes. With her breakthrough discovery, our neighboring countries such as Malaysia, Indonesia and Thailand undertook similar research on their respective Pandanus species.

Moreover, biological studies on pandan have found it as potential source of anti-microbials, anti-viral, diuretics, anti-tuberculars, antioxidants, and anti-inflammatory agents.

Consequently, Dr. Nonato's research on the new alkaloids earned her the 2006 National Research Council of the Philippines Achievement Award in Chemical Sciences. And for her students, her various works on pandan has earned her the monicker "Pandan Queen" as most research literatures are attributed to Dr. Nonato's works.

"You just have to work diligently and be the expert on that field," Dr. Nonato closes.

On the other hand, Dr. De Leon's research on bioethanol production gave her prominence.

Deviating from the usual bioethanol feedstock using corn and other similar food-base materials, Dr. De Leon focused on local fungal species that can degrade complex polymers called lignin to produce ethanol as fuel additives.

According to her, corn and other food-base raw materials should not be used in the production of alternative fuel as this threatens food security in the country.

Her team identified *Fusarium moniliforme,* one of the most prevalent fungi, as a promising source of ethanol through a consolidated bioprocessing approach that extracts the ethanol from its solid form.

The bioprocess provides the fermentation resulting in the production of a substance with higher ethanol concentration at a shorter processing time.

Other notable scientists conferred were Dr. Enrico C. Paringit, recipient of the David M. Consunji Award for Engineering; Dr. Antonio Dans, for Dr. Paulo C. Campos Award for Health Research; and Dr. Antonio Laureana as this year's Leads Agri awardee.

In his closing remarks, Secretary Fortunato T. de la Peña encouraged DOST to give more recognition to local scientists and researchers as this provides a channel for local talents to be recognized.

"I hope we could give more awards to our local scientists to inspire them and give credit and prominence to their works and contributions to science and the society."

PhilAAST confers the awards annually to men and women of science who have contributed new knowledge for the advancement of science and technology in the country. Awardees receives P50,000 cash and plaque of recognition.

ABOUT US

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For comments, suggestions or queries, contact:
(02) 837-2071 loc. 2148/839-2193 local 107 or
email: dost.digest@gmail.com

Framelia V. Anonas
Editor-In-Chief
Joy M. Lazcano
Copy Editor
James B. Intia
Layout
Ferdinand D. Cartas
Circulation

Science and Technology Information Institute-
Department of Science and Technology
Bicutan, Taguig City
Metro Mla.1631
Philippines

www.stii.dost.gov.ph

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DOST strengthens its comm staff via scholarship program

By Haziel May C. Natorilla
S&T Media Service, *DOST-STII*

Communicating science is a challenge, and the Department of Science and Technology (DOST) faces this challenge head on by putting into place programs that enrich the skills and knowledge of its communication workforce.

DOST's latest initiative in this area is a scholarship program that will enhance the knowledge and skills of its science communicators, resulting in communication activities more relevant and attuned to today's needs.

"Our work at the Department must be communicated to the public to earn greater support," said Secretary Fortunato T. de La Peña to emphasize the importance of communication in the science department.

To put the program up and running, DOST and its partners inked a memorandum of agreement (MOA) for the implementation of the Master of Science in Development Communication program for DOST communication staff. Program partners who signed the MOA include DOST's Science Education Institute represented by Director Dr. Josette T. Biyo, DOST's Science and Technology Information Institute (STII) Director Richard P. Burgos, and University of the Philippines Los Baños (UPLB) represented by Campus Chancellor Dr. Fernando C. Sanchez, Jr.

The ceremonial MOA signing was held recently at the DOST-Philippine Institute of Volcanology and Seismology (PHIVOLCS) building in Diliman, Quezon City. To the incoming scholars, de la Peña advised, "Science communicators act as the bridge between scientists and the greater society they are a part of, so it is essential that they (scholars) uphold their responsibility as science communicators with utmost seriousness."

DOST personnel admitted in the DOST Graduate program.

The program shall prepare its graduates to assume leadership roles in development communication.

The MS Development Communication as an off-campus program will be conducted in DOST in Bicutan, Taguig City every Saturday for four semesters.

"The offering of this scholarship program was intended to enhance the capacity of (DOST Media Core) members in the practice of their profession," said Ruby R. Cristobal, president of the DOST Media Core which prepared the program's concept paper.

Back in 2013, DOST through its Media Core, a network of DOST staff involved in communication work, conducted a survey to assess the training and capability upgrading needs of communication practitioners in DOST and its agencies. Results of the survey indicated among others the need for advanced studies in Development Communication.

DOST-STII's division chief Dr. Aristotle P. Carandang, as Media Core adviser, recommended to the Media Core to propose to DOST an in-house scholarship program in Development Communication that would address the training and skills upgrading needs of the Media Core.

Following a consultation with Dr. Ma. Theresa H. Velasco, UPLB College of Development Communication dean, the DOST Media Core, through Cristobal, came up with a proposal for an off-campus MS Development Communication scholarship program under the DOST Human Resource Development Program managed by the DOST-SEI.

The 16 DOST scholars admitted into the program are (in alphabetical order): Charyl C. Apuyan (DOST-NAST), Melanie R. Aquino (DOST-PAGASA), Marren Joy J. Belgado (DOST-SEI), Jona M. Bernal (DOST-STII), Mary Charlotte O. Fresco (DOST-NRCP), Ullyann C. Garcia (DOST-PCHRD), Ana Ciaren H. Itulid (DOST-PCHRD), Jude M. Jose (DOST-PAGASA), Haziel May C. Natorilla (DOST-STII), Lucille Rose D. Sanico (DOST-PHIVOLCS), Ma. Grace B. Sasota (DOST-SEI), Salvador R. Serrano (DOST-FNRI), Juan Antonio R. Tuazon (DOST-SEI), George Robert E. Valencia III (DOST-NRCP), Ma. Estrella B. Valle (DOST-NRCP), and Charmaine V. Villamil (DOST-PHIVOLCS).

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MAKING SCIENCE COMMUNICATION WORK | In another significant move to elevate S&T communication in the country, the Department of Science and Technology (DOST) and the University of the Philippines (UP) Los Baños ink partnership to launch the first off-campus scholarship in Master of Science in Development Communication for DOST's communication specialists recently at the PHIVOLCS Auditorium in Quezon City. (L-R) UPLB Graduate School Dean Dr. Jose V. Camacho Jr., DOST Science Education Institute Director Josette T. Biyo, UPLB Chancellor Fernando C. Sanchez Jr., DOST-Science and Technology Information Institute Director Richard P. Burgos, and UPLB College of Development Communication Dean Dr. Ma. Theresa H. Velasco. **(George Robert E. Valencia III, DOST-NRCP)**