

Newsletter of the SEAFDEC Aquaculture Department (AQD), Tigbauan, Iloilo, Philippines

SEAFDEC/AQD scientist named Promoter of Mangrove Crab Aquaculture

The Philippine Aquaculture Society Incorporated and the Society of Aquaculture Engineers Incorporated awarded Scientist Dr. Emilia Qunitio as Promoter of Mangrove Crab Aquaculture in the Philippines for her outstanding leadership and devoted service last 7 December 2016 in Dagupan City, Pangasinan.

Dubbed as the Giant Step Award, footprints of the awardees were embedded in a

slab of cement and displayed at the Asian Fisheries Academy. Together with Dr. Qunitio is another awardee, the former Speaker of the House of Representatives Jose de Venecia, Jr., named as a prime mover for lifting the ban on the importation of whiteleg shrimp *Penaeus vannamei*.

The first ever Giant Step awardee was Dr. Herminio Rabanal, one of the pioneers in Philippine aquaculture, in 2013.

-ET QUNITIO / JM DE LA CRUZ

PHOTOS COURTESY OF ET QUNITIO



(From right) Dr. ET Qunitio together with former House of Representatives Speaker Jose de Venecia, Jr. and BFAR-NIFTDC Chief Dr. Westly Rosario. (Inset) Dr. Qunitio's Giant Step Award

AQD scientist presents paper at Shellfish Restoration conference



PHOTOS COURTESY OF MJHL RAMOS

(Above, second from right) Dr. MJHL Ramos as one of the panelists during the session on Community Engagement in Shellfish Restoration and (right) during her paper presentation

SEAFDEC/AQD Scientist and Training & Information Division Head Dr. Ma. Junemie Hazel Leбата-Ramos attended and presented a paper at the 18th International Conference on Shellfish Restoration (ICSR) held 16-19 November 2016 in Charleston, South Carolina, USA.

The conference highlighted the use of shellfish restoration to address challenges and opportunities related to coastal development; resource policy,

regulation and management; shellfish diseases; community engagement in shellfish population; shoreline stabilization and climate change.

Dr. Leбата-Ramos presented her paper "Restoring abalone population through family-based grow-out culture in intertidal reef flats" under the session "Goods and services provided by shellfish populations and their habitat." It is an output of her work in the National Abalone R&D

Program, Project 3: Grow-out of abalone in small islands and communities.

ICSR provides a forum to scientists, academicians, farmers and businessmen actively involved or interested in shellfish restoration. It also aims to foster partnerships to further the exchange and application of science-based information in support of public and private shellfish restoration and aquaculture.

- MJHL RAMOS / JM DE LA CRUZ

AQD Christmas Special Page 7

39th Program Committee Meeting and 19th FCG Meeting



Participants of the 39th SEAFDEC Program Committee Meeting held in Yogyakarta, Indonesia. [Inset] Dr. Chihaya Nakayasu (right), SEAFDEC/AQD Acting Chief presents the progress of AQD regional programs during the meeting. Shown also in photo is Dr. E.G. de Jesus-Ayson (left).



PHOTOS COURTESY OF B ACOSTA

The SEAFDEC Program Committee Members from the ASEAN and SEAFDEC Member Countries (Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam), delegates from the collaborating agencies of SEAFDEC, regional and international organizations and senior officials of the SEAFDEC Secretariat and five Technical Departments (AQD, IFRDMD, MFRD, MFRDMD and TD) gathered on 28 November until 2 December 2016 in Yogyakarta, Indonesia for the 39th SEAFDEC Program Committee Meeting and 19th Meeting of the Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnerships (FCG-ASSP).

SEAFDEC Inland Fisheries Research Development and Management Department (IFRDMD), in cooperation with the Ministry of Marine

Affairs and Fisheries, Indonesia, hosted these meetings.

During the SEAFDEC Program Committee Meeting, SEAFDEC/AQD's Research Division Head, Dr. Evelyn Grace de Jesus-Ayson and AQD Acting Chief, Dr Chihaya Nakayasu, presented the progress of AQD's Departmental and Regional Programs in 2016, respectively and plans for 2017.

Noting the accomplishments of AQD's R&D Programs, some member country representatives expressed interest in collaborating with AQD on training and research in aquaculture, particularly in the areas of aquatic animal health, feeding and nutrition, breeding of commercial aquatic species, and climate change adaptation.

AQD was also requested to give priority to dissemination of the important findings of studies on the use of plant-based protein sources in aquafeed formulations and on fish health management.

Concerning the FCG-ASSP Meeting, the discussions focused on the follow-up actions to the directives given at the last meetings of the SEAFDEC Council and ASEAN bodies related to fisheries, the progress and plans of the Programs under the FCG/ASSP and updates on international fisheries-related issues.

Country delegates representing the FCG-ASSP noted the progress made by AQD in aquatic animal health management and endorsed the policy recommendations on addressing the issues on EMS and other transboundary diseases. Dr. Ayson gave a presentation on this subject.

SEAFDEC Marine Fisheries Research Department will host the 2017 SEAFDEC Program Committee Meeting and Fisheries Consultative Group Meeting.

-B ACOSTA

SEAFDEC Department Chiefs' Meeting



AQD participants with officers/delegations from SEAFDEC Technical Departments and Secretariat

Dr. Chihaya Nakayasu, SEAFDEC/AQD Acting Chief; Dr. Evelyn Grace de Jesus-Ayson, Research Division Head; Dr. Rowena Romana-Eguia, Scientist and OIC, AQD Manila Office; Ms. Belen Acosta, Special Departmental Coordinator; and Ms. Anna Maria Ortiz, Administrative Assistant attended the Department Chiefs' Meeting held last 3 December 2016 in Yogyakarta, Indonesia. Participants of the meeting were the SEAFDEC Secretary General, Deputy Secretary General, Chiefs and respective delegations of SEAFDEC Technical Departments (AQD, IFRDMD, MFRD, MFRDMD, and TD) and Secretariat.

The SEAFDEC Departments' Chief Meeting was convened to discuss

the activities of SEAFDEC that require collaboration and inputs from Technical Departments and Secretariat. Among the important aspects discussed were the required follow-up actions to the 39th Meeting of SEAFDEC Program Committee and the 19th Meeting of the FCG/ASSP, preparations for the 50th Anniversary of SEAFDEC and the 49th Meeting of SEAFDEC Council in 2017 and information-related matters.

Concerning collaboration between Technical Departments, SEAFDEC-IFRDMD and AQD were asked to collaborate and strengthen linkages in inland aquaculture R&D. This is to enable SEAFDEC to effectively support and assist the ASEAN member states in addressing issues that pertain

to inland fishery resource management.

On information related matters, SEAFDEC Departments were requested to consider establishing their respective repositories of published articles to enhance accessibility of their technical information to the public. In this connection, the Secretariat, with the assistance of AQD, was asked to facilitate the conduct of inter-departmental workshop on the development of SEAFDEC repositories.

With regards to the 50th Anniversary Celebration of SEAFDEC that will be held in Pattaya, Thailand in November 2017, SEAFDEC Secretariat and Technical Departments have firmed up the plans and preparations needed, based on the recommendations given by the 39th Program Committee.

- B ACOSTA

PTAC Meets in Makati City to Discuss AQD Matters



(Left to right) UPV College of Fisheries and Ocean Sciences Dean Dr. Crispino Saclauso, BFAR Assistant Director for Technical Services Mrs. Drusila Esther Bayate, SEAFDEC/AQD Acting Chief Dr. Chihaya Nakayasu during the PTAC meeting

The Management Committee of SEAFDEC/AQD and senior representatives of the relevant Philippine Government institutions (Department of Agriculture and its attached

agencies, Bureau of Fisheries and Aquatic Resources and Bureau of Agricultural Research; Department of Foreign Affairs; and University of the Philippines Visayas gathered on 4 November 2016

at the Best Western Plus Antel Hotel, Makati City for the 26th Meeting of the Philippine Technical Administrative Committee (PTAC). PTAC comprises the high level representatives of Philippine

CONTINUED TO PAGE 3

PTAC Meets...

Government agencies and is tasked to provide close coordination between the host government and SEAFDEC with regard to the operations of AQD.

The meeting was convened to review the accomplishments of AQD in 2016 (R&D Programs, and Administration and Finance) and plans for 2017, for endorsement to the SEAFDEC Program Committee and the Philippine Government, and to discuss the pressing issues that concern the operations of AQD. Mrs. Drusila Esther Bayate, SEAFDEC

Alternate Council Director for Philippines and Assistant Director for Technical Services, Bureau of Fisheries and Aquatic Resources (BFAR), chaired this year's PTAC meeting.

PTAC noted the progress of AQD's R&D programs in 2016 and endorsed its 2017 planned activities and the proposed budget for 2018, subject to suggested revisions. The Committee suggested that in order to further assist the Philippine Government in addressing the development goal and complement BFAR's efforts in alleviating poverty, AQD consider, as

study sites, the locations where BFAR had already identified the marginalized or poor communities. PTAC acknowledged and commended AQD for its hard work and laudable accomplishments under R&D. Hence, for better understanding and appreciation of its work under the present Government, PTAC suggested that AQD reports and presentations indicate clearly how the targeted beneficiaries, particularly the poor aquaculture farmers or coastal fishing communities, are benefiting from the investments of AQD on R&D.

- B. ACOSTA

Mud Crab Hatcheries Workshop in Bangladesh

PHOTO BY MANZURA KHAN



Participants of the mud crab hatcheries workshop in Bangladesh

SEAFDEC/AQD participated in the one-day workshop entitled *Knowledge Sharing Workshop on Mud Crab Hatcheries in Bangladesh* last 7 November 2016 in Khulna, Bangladesh.

Bangladesh Forest Department (FD) has been working jointly with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on mud crab hatchery development in Bangladesh since 2014. Previously under SDBC-Sundarbans project, hatchery-reared crablets were produced at Bangladesh Fisheries Research Institute (BFRI) for the first time in Bangladesh with technical support of SEAFDEC/

AQD Scientist Dr. Emilia T. Qunitio assisted by Mrs. Sharon Saracin. Based on the good results, under the new project "Management of the Sundarbans Mangrove Forests for Biodiversity Conservation and Increased Adaptation to Climate Change (SMP)" another mud crab hatchery trial has been done at BRFI in Paikgacha this year with technical support from the same experts.

Exchange of existing issues/challenges, strengths, weaknesses and probable solutions among stakeholders is necessary to increase the chances of obtaining economically viable seed production technology and

to facilitate the scaling-up. Hence, SMP organized a one-day workshop entitled *Knowledge Sharing Workshop on Mud Crab Hatcheries in Bangladesh*. SEAFDEC/AQD Scientist Dr. Emilia T. Qunitio was invited to present the results of their larval rearing trials at BFRI. She was also one of the facilitators in the workshop, which was participated by officers and staff of government agencies (Department of Fisheries, FD, BFRI), academicians from Khulna University, the private sector, technical staff and officers of GIZ and other non-government organizations.

- ET QUNITIO

AQD junior researchers present studies at algal biotech conference

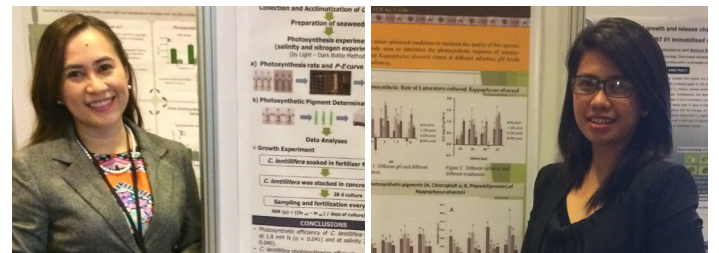
Algal biotechnology is presently considered as one of the most promising frontiers to provide sustainable sources of food, feed, and biofuel among others. Thus, this year's theme for the 9th Asia-Pacific Conference on Algal Biotechnology (APCAB) was "Algae for Food, Feed, Fuel and Beyond." The conference was held from 15 to 18 November 2016 at the Century Park Hotel, Bangkok, Thailand.

During the conference, SEAFDEC/AQD Senior Technical Assistant Ms. Rena Santizo-Taan discussed the results of her study on the use of enriched *Ulva pertusa* meal as a feed (or diet) juvenile abalone. She reported that enriched *U. pertusa* meal can be utilized as a feed ingredient in abalone juvenile diets, substituting fishmeal and soybean meal in providing up to 30% of the protein in the feed.

On the other hand, Technical Assistants Ms. Jonalyn Mateo and Ms.



PHOTOS COURTESY HT SOLLESTA



(Top) Senior Technical Assistant Ms. Rena Santizo-Taan presenting her study at the 9th Asia-Pacific Conference on Algal Biotechnology. (Bottom) Technical Assistants Ms. Hananiah Sollesta and Ms. Jonalyn Mateo beside their posters

Hananiah Sollesta presented posters on their studies "Photosynthesis rate and pigments of *Kappaphycus alvarezii* (Doty) at different pH, salinity and irradiance" and "Photosynthesis and growth of *Caulerpa lentillifera* J. Agardh at different nitrogen, salinity and irradiance levels," respectively.

Ms. Mateo's poster presentation revealed that

nursery-produced *K. alvarezii* can be best grown in rearing water with a salinity of 35 ppt, pH 8 and under $350 \mu\text{mol m}^{-2}\text{s}^{-1}$ of irradiance.

Meanwhile, Ms. Sollesta's poster showed that *C. lentillifera* could be grown at a wide range of salinities between 25 to 35 ppt. Optimal irradiance is $155 \mu\text{mol m}^{-2}\text{s}^{-1}$ and nitrogen level is best at 1.8 mM.

- RH LEDESMA

AQD and JIRCAS kicks-off new studies

The Fisheries Division of the Japan International Research Center for Agricultural Sciences (JIRCAS) held its Kick-off Meeting for its research project, "Development of technologies for sustainable aquatic production in harmony with tropical ecosystems" at the King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand on 27 September 2016.

Dr. Masashi Kodama and Dr. Nerissa D. Salayo presented the objectives and work plan for their collaborative study on Demonstration and Verification of Integrated Multi-trophic Aquaculture (IMTA) for 2016-2020. Similarly, Dr. Tsuyoshi Sugita and Dr. Roger Edward P. Mamaug presented their concepts and plans for their ongoing collaborative study on "Development of low fish meal feed for aquaculture using alternative resources." - ND SALAYO



PHOTOS COURTESY OF ND SALAYO

Participants of the JIRCAS Kick-off Meeting in Bangkok

AQD paper at 7th Fisheries Scientific Conference

SEAFDEC/AQD participated in the 7th Fisheries Scientific Conference hosted by the Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute (BFAR-NFRDI) held at the Tagaytay International Convention Center, Tagaytay City on 29-30 September 2016.

Associate Scientist Dr. Nerissa Salayo, Visiting Scientists Dr. Masashi Kodama and Dr. Satoshi Watanabe, Senior Technical Assistant Ms. Raisa Joy Castel and Technical Assistant Ms. Rose Ann Diamante presented their poster entitled “Economic and Environmental Benefits from Integrated Multi-trophic Aquaculture (IMTA) in Milkfish Mariculture in the Philippines.”

The conference with a theme “Agham Suporta sa



(Left to right) Technical Assistant Ms. Rose Ann Diamante, Senior Technical Ms. Raisa Joy Castel, Associate Scientist Ms. Nerissa Salayo and Visiting Scientist Dr. Masashi Kodama at the 7th Fisheries Scientific Conference.

Pangisdaang Industriya” became a venue for research paper presentations on aquaculture (seeds and feeds, aquatic animal health, broodstock development and aquatic biotechnology), capture fisheries (stock assessment, fishing technology and aquatic ecosystem), post-harvest and

marketing (food safety and quality, post-harvest losses and MSMEs support, trade and marketing assessment) & cross-cutting themes (socioeconomics, traceability, climate change and gender and development).

- ND SALAYO / JM DE LA CRUZ

PH Seaweed Industry moves forward

The Seaweed Industry Association of the Philippines (SIAP) invited seaweed and carrageenan processors, exporters, traders, farmers and representatives from government & private institutions for the annual Philippine Seaweed Convention (PSC) in J Centre Convention Hall in Cebu City from 23 to 25 November 2016.

The convention’s plenary session includes topics on the current state of the seaweed industry, its local market condition and trends, farming and livelihood opportunities, government programs and the Asian market prospects of Philippine seaweeds. This was followed by a workshop discussing issues & gaps and forming appropriate actions & solutions in aiding the growth of the seaweeds industry in the country – staying true to this year’s theme “Moving



PHOTO BY JP MATEO

Members of the seaweed industry gather in Cebu City for the Philippine Seaweed Convention 2016

forward. One vision, one goal.”

The convention also had an exhibit that showcased various seaweed products and technologies to participants. SEAFDEC/AQD had a booth that made information materials on seaweeds and other commodities easily available to attendees. The seaweeds team (Associate Scientist Ms. Ma. Rovilla

Luhan and Technical Assistant Ms. Jonalyn Mateo), who also participated in the convention, answered queries and shared their knowledge to participants who visited the booth.

SIAP is a non-profit organization whose objective is to unite and assist all stakeholders of the industry to attain global leadership in seaweeds and carrageenan.

- JM DE LA CRUZ

Unveiled

Christmas is indeed the most wonderful time of the year. SEAFDEC/AQD staff, once again, enjoyed a week-long Christmas celebration that ‘unveils’ the true meaning of Christmas from 12 until 16 December 2016.

Lantern Parade and Tree Lighting Ceremony

AQD staff, divided into six teams, paraded their most creative and brightest lanterns to kick-off the annual Christmas celebration. The entire department became more festive when the giant Christmas tree was lighted.



Blue Christmas Fairies (Fish Heath & FSES)



Cream Angels (TVDD)



Purple Doves (NFDS, LFAAT, SocioEcon, ORDH)



Red Snappy Nutcrackers (BSPS)



Pink Plankton (TID)



ALL PHOTOS BY JM DE LA CRUZ



Green Elves (AFD, Security and Agency Personnel)

Opening Salvo Winners

Best group	1st place - Cream Angels 2nd place - Blue Christmas Fairies 3rd place - Green Elves
Best lantern	1st - Cream Angels 2nd place - Red Snappy Nutcrackers 3rd place - Pink Plankton
Best “Deck the Walls” design	1st place - Cream Angels 2nd place - Blue Christmas Fairies 3rd place - Red Snappy Nutcrackers Pink Plankton
Best mascot	Red Snappy Nutcrackers

Gift giving Activity

SEAFDEC/AQD organized a Christmas Party for 154 grade one pupils of Parara, Buyu-an and Nanga Elementary Schools. They were entertained with whimsy by a very talented magician and was suprised with gifts by Santa Claus!



PHOTOS BY JM DE LA CRUZ



Gift giving at DBS

In Dumangas Brackishwater Station, the staff gave out grocery packs to 22 families living nearby last 14 December 2016.





← DBS



Christmas all around

Take a peek at how Christmas was celebrated at AQD's Dumangas Brackishwater Station (DBS), Igang Marine Station (IMS), Binanganon Freshwater Station (BFS) and Manila Office (MO).



← IMS



← BFS



← MO



CBRE project Christmas Party in Sagay



AQRD Acting Chief Dr. Chihaya Nakayasu giving gifts to Molocaboc children

The Community-Based Resource Enhancement (CBRE) project held a simple Christmas party for fisherfolks and families in Molocaboc, Sagay City on 9 December 2016. Acting Chief and GOJ-TF Co-Manager Dr. Nakayasu participated in the event. Before the Christmas party, the second annual election of officers of the Molocaboc Sea Ranchers' Association (MOSRA) was held. MOSRA

proceeds from the Molocaboc Barangay Fisheries and Aquatic Management Council (BFARMC) which has been in existence since 2009, organized with assistance from SEAFDEC/AQRD and Protected Area Management Board of Sagay Marine Reserve (PAMB/SMR). Social preparations and socioeconomic baseline assessment for CBRE started in November 2006 in SMR coastal communities.

- ND SALAYO



Newly-elected 2017 MOSRA Officers with (seated from right to center) Dr. Chihaya Nakayasu, Dr. Nerissa D. Salayo, and Molocaboc Brgy. Capt. Antonio Pasaylo

Christmas Messages

May this Christmas mark the beginning of another wonderful year for all of us. Cheers for a fresh and brighter New Year!
-Janelli Garibay



Christmas is a reminder that Jesus Christ is born in a crib to be our SAVIOUR.
May this Christmas bring about a pleasant change in our lives. May it bring smile to our faces and let it be the best way to cherish and cheer the very reason of our salvation.



May the year 2017 give everyone new hope. Happy holidays! Spread the love. ♥
-Loina

Wishing everyone a life full of love and laughter. Merry Christmas and Happy New Year!
-BCS



True happiness may not be found in parties nor the best gifts under a Christmas tree.
The true meaning of Christmas may not be seen by the naked eye, The intangible gifts like: to your colleague, cooperation, patience & understanding; to your enemy, forgiveness; to your friends and family, your heart; to every child, a good example; to all, generosity; to yourself, respect.

I wish you all the best this Christmas. Merry Christmas to you and your loved ones.
- Elisa June Pagtanac



Beneath the hustle of holiday season, there is the true beauty of connecting with loved ones. May this beauty and joy lift you up during New Year.
-A Ferrer

My idea of Christmas, be it old-fashioned or modern, is simply **LOVING OTHERS** As the Christmas season begins with love, Let us complete that love by extending our love to others.
Merry Christmas to all!
-Agustina Tumagan Mosquera



May the blessings of peace,
The beauty of hope,
The spirit of love,
The comfort of faith,
Be your gifts this Christmas season!
May the Lord bless you on this season of Christmas and always!
Merry Christmas!
-Mary Grace Herga Oliveros



Wishing everyone, good health, happiness, harmony and more blessing
-Accounting staff



Faith makes all things possible; hope makes all things bright; Love makes all things wonderful
May you and your Family have all these three for Christmas.
Merry Christmas and Happy New Year!!!
-MNG Llona

From our home to yours... wishing everyone a magical and delightful holiday season!
Merry Christmas and Happy New Year.
-P Casiano



AQD staff all decked-out in their best masks



Research Division

Christmas Party

To end the week-long celebration is the SEAFDEC/AQD Christmas Party with the theme **"Unveiled: The True Meaning of Christmas."** The activity includes contests like The Christmas Talent Caravan, The Search for Masquerade King and Queen and a raffle draw gave out lots of prizes to lucky employees. There's dancing, singing and Christmas spirit!



Technology Verification and Demonstration Division



Training and Information Division



Administration and Finance Division



Winners of Masquerade Kings and Queen & Committee's Choice

Christmas Party Programme Winners

Christmas Talent Caravan	TID
Masquerade Kings	Mr. Al Edward Omar Limoso (AFD) Mr. Edgar Vincent Antolino (TID)
Masquerade Queen	Ms. Trisha Nacionales (RD)
Committee's Choice	Ms. Jenalyn Silvestre-Lames (RD) Dr. Masashi Kodama (RD)

Retirees 2016

After years of service, it is now time for new adventures...



Ms. Ruby Bombeo
Officer-in-Charge,
Training Division
39 years in service



Dr. Teodora Bagarinao
Scientist / FishWorld
Curator, Training and
Information Division
38 years in service



Ms. Kaylin Corre
Head, Administration and
Finance Division
37 years in service



Dr. Mae Catacutan
Scientist
Research Division
36 years in service



Mr. Eliseo Coniza
Senior Technical Assistant,
Technology Verification and
Demonstration Division
36 years in service



Mr. Recaredo Gabayeran
Electrician, Administration
and Finance Division
33 years in service



Mr. Nancy Acdol
Administrative Assistant 3,
Technology Verification and
Demonstration Division
31 years in service



Ms. Belen Acosta
Senior Information
Specialist / Special
Departmental Coordinator,
Management Group
22 years in service



Ms. Dorfra Tupas
Nurse, Administration and
Finance Division
11 years in service



Mr. Reynaldo Sobremisana
Driver / Mechanic,
Administration and Finance
Division
10 years in service

Research Seminar



Prof. Hendrik Luesch of the Department of Chemistry, University of Florida talked about the Drug Discovery inspired by Marine Cyanobacteria at TMS on 7 December 2016.

Prof. Luesch discussed that certain cyanobacteria produce cytotoxins that may be used for treating cancer, including cryptophycins and dolastatin 10. He explained that his team devised screens to identify marine-derived cytotoxins that preferentially target cancer cells over normal cells using a multidimensional assay platform in cells and whole organisms. He also added that his team is also identifying compounds that could serve as starting points for drug discovery related to other disease indications.

- GK FAIGANI



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