2019

ANNUAL REPORT

DEPARTMENT OF SCIENCE AND TECHNOLOGY
PHILIPPINE COUNCIL FOR HEALTH RESEARCH AND DEVELOPMENT

http://pchrd.dost.gov.ph/

MAKING YOUR LIFE BETTER

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DOST-PCHRD

The Philippine Council for Health Research and Development (PCHRD) is one of the three sectoral councils of the Department of Science and Technology (DOST). It is a forward-looking, partnership-based national body responsible for coordinating and monitoring research activities in the country.

PCHRD was created on March 17, 1982 through Executive Order No. 784. In 1987, Executive Order No. 128 reaffirmed the Council's existence and relevance, as well as reorganized the National Science and Technology Authority into what is now the Department of Science and Technology.

The Philippine National Health Research System (PNHRS) Act of 2013 strengthened the PCHRD's leadership role in the country's health research system. As the PNHRS Secretariat, the PCHRD supports programs and projects that sustain the results of the system.

PCHRD supports every stage of health research from capacity building, ethics review, actual research, to research utilization, commercialization, and dissemination.

As the national coordinating body for health research, we provide central direction, leadership, and coordination of health research activities. To achieve this, we are committed to:

- Formulate agenda, plans, policies, and strategies for health research;
- Mobilize resources to support health research;
- Develop and strengthen capacity for health research;
- Support the development of affordable, accessible, and quality S&T-based solutions and innovations;
- Ensure the dissemination and utilization of health research outputs;
- Monitor and evaluate health research activities;
- Establish linkages and partnerships with local and international organizations;
- Promote good governance among health research organizations through efficient, effective, transparent, and ethical health research management system.

The PCHRD as the recognized lead provider of research-based solutions and innovations to address health system needs by 2028

- Passion for excellence and innovation in public service
- Culture of teamwork and collaboration
- High regard for work ethics and integrity
- Responsive personal effectiveness
- Dynamic involvement in quality management system

Message of the Secretary

The year 2019 is a continuing proof of the commitment of the Philippine Council for Health Research and Development's (PCHRD) to provide research-based health solutions to our people. This year, the PCHRD took advantage of the signing of the Universal Health Care Law wherein evidence-driven rules and regulations were pushed to best serve the interest of the health sector. It also contributed to the drafting of the Implementing Rules and Regulations of the Innovative Startup Act, a law that is crucial in developing an ecosystem that fosters innovation and entrepreneurial culture in the country.

The PCHRD's programs and projects respond to the needs of the country's health system. Among others, the Tuklas Lunas program supports 28 Tuklas Lunas Centers across the country. In the area of Omics in Health, the PCHRD expands research to the regions with the inauguration of the Philippine Genome Center satellite facility in Mindanao based at UP Mindanao to boost agriculture and biodiversity research, in support of the island's major industries. In October 2019, the PCHRD launched the country's mental health research agenda, serving as the first step towards a more accessible and inclusive mental healthcare system.

The Department of Science and Technology (DOST) commends your unwavering commitment in making health research and innovation serve the health of the Filipinos.

Mabuhay!

SEC. FORTUNATO T. DELA PEÑA
Chair, PCHRD Governing Council and
Secretary, Department of Science and Technology

Executive Director's Report

I am pleased to present the 2019 report of the Philippine Council for Health Research and Development (PCHRD), with our tag line — Making your life better.

The Council and its partners worked in the areas spelled in our mission statement. Some of the highlights are as follows:

For R&D, we invested more than 400 million pesos on the research priorities outlined in the Harmonized National Research and Development Agenda (HNRDA) and the National Unified Health Research Agenda (NUHRA). In. drug discovery and development, the Tuklas Lunas™ Program expects to produce the first ever dengue drug in the world next year. Meanwhile in diagnostics, the award-winning Biotek M Dengue Aqua Kit started to expand the use of its platform technology to other infections such as leptospirosis, schistosomiasis, and typhoid fever. Filipino regional and ethno-linguistic groups will be represented in our Genomics Research Program. Research to address the mental health needs of our communities will be aligned to the research agenda for mental health launched in October.

To ensure the utilization of research outputs, the Council assisted researchers and institutions in their technology transfer activities. This year, we filed 35 IPs.

The Council committed 99.5 million pesos for capacity building programs. In 2019, we welcomed 10 new scholars for the MD-PhD in Molecular Medicine and four new scholars for MS Molecular Medicine programs.

We forged partnerships with international institutions to broaden the base of our training programs. Relevant to this, we signed the memorandum of understanding (MOU) with the Fondazione Italiana Fegato for the establishment of the Philippine Liver Network, enhancement of the existing clinical research fellowship program and other research training programs - which includes the PhD Molecular Biomedicine with the University of Trieste (UNITS).

In health research ethics, PHREB accredited 44 Research Ethics Committees (RECs). To date, there are already 95 accredited RECs across all regions in the country, which ensures a safer research environment for human participants.

We continued to make our presence felt in different media platforms. With Facebook alone, we were able to reach more than 88 million people. Our press conference branded as Talakayang HeaRT Beat provides an avenue for researcher-media interactions.

These and our other accomplishments will not be possible without your support: you, our partners, stakeholders, and all the staff of the Council.

DR. JAIME C. MONTOYA
Lead Coordinator, Philippine National Health Research System
Executive Director, Philippine Council for Health Research and Development

2019 AT A GLANCE

RESEARCH

NEW PROJECTS **94**

ONGOING PROJECTS **157**

RESEARCH EXPENDITURES

412M

CAPACITY BUILDING

DOST-ASTHRDP Scholars

16 NEW

126 ONGOING

10 COMPLETED

19 BALIK SCIENTISTS

104 CAPACITY BUILDING ACTIVITIES

COLLABORATIONS

National partnerships

PhilHealth *Your Partner in Health*

REPUBLIC OF THE PHILIPPINES · DEPARTMENT OF HEALTH ·

RESEARCH DISSEMINATION AND UTILIZATION

88M FACEBOOK REACH

50,000 LIKES

99.77% CLIENT SATISFACTION RATE

123, 038 CLIENTS SERVED

8 TECHNOLOGIES TRANSFERRED

ETHICS

PHREB accredited RECs

Level 3 **17**

Level 2 **19**

Level 1 **9**

NEC Research Proposals

13 ONGOING

9 APPROVED

23 Accepted for review

International partnerships

Inserm

UNIVERSITY OF TRIESTE

UKRI Medical Research Council

251

NEW AND ONGOING PROJECTS

- Tuklas Lunas
- Dengue and other arboviruses
- Biomedical Engineering and Health Technologies
- Diagnostics
- Disaster Risk Reduction and Climate Change
- Omic technologies for health
- ICT
- Functional Food, Nutrition and Food safety

PCHRD@37





37th PCHRD ANNIVERSARY

HEALTH RESEARCH AND INDUSTRY 4.0

15 March 2019

The PCHRD 37th Anniversary celebration was held in conjuction with the International Conference on Health Research and Industry 4.0.

Bannered by the theme, “Health Research and Industry 4.0,” the event tackled issues and the opportunities that confronts the health research landscape in the face of Industry 4.0. It brought international experts who showcased what other countries are doing under the revolution, particularly for the health field. Dr. Michael Braun, Program Manager of the Vietnam Climate Innovation Center, the keynote speaker, was joined by other international resource persons namely; Ms. Tala de los Santos, Diagnostics Program Leader of PATH, USA, Dr. Jun Jie Chong, Assistant Professor of Mechanical Engineering at the Newcastle University, Singapore, and Dr. Russell Walker, Commercialization and Industry Engagement, Director at the Swinburne University of Technology, Australia.

The occasion was also graced by Department of Science and Technology (DOST) Secretary Fortunato De La Peña and DOST Undersecretary for Research and Development Rowena Cristina Guevara who assured the crowd that the research sector can cope with the revolution.

Participated by more than 700 participants including the academe,policymakers, private sector, and civil society representatives, the event became an opportunity for conversation on how the country can take advantage of the opportunities and manage the risks emerging from Fourth Industrial Revolution (FIRe).

One plenary and two parallel sessions were conducted to answer the questions on the following: What are the implications of Industry 4.0 to the health research landscape? How can the health research ecosystem can be strengthened and be made more effective? How should the research sector transform its policies and strategies in the face of this revolution? What actions must be undertaken to develop the skills and competencies required for the health research human resource?

Aside from the regular general assemblies, the very first contest, 3-minute pitch to policymakers, was conducted wherein participants from the regions showcased their research presentation and communication. Pre- and post conference sessions were also held on 11-14 and 16 March 2020.

To know more about the event, you may read the 37th Anniversary Report.

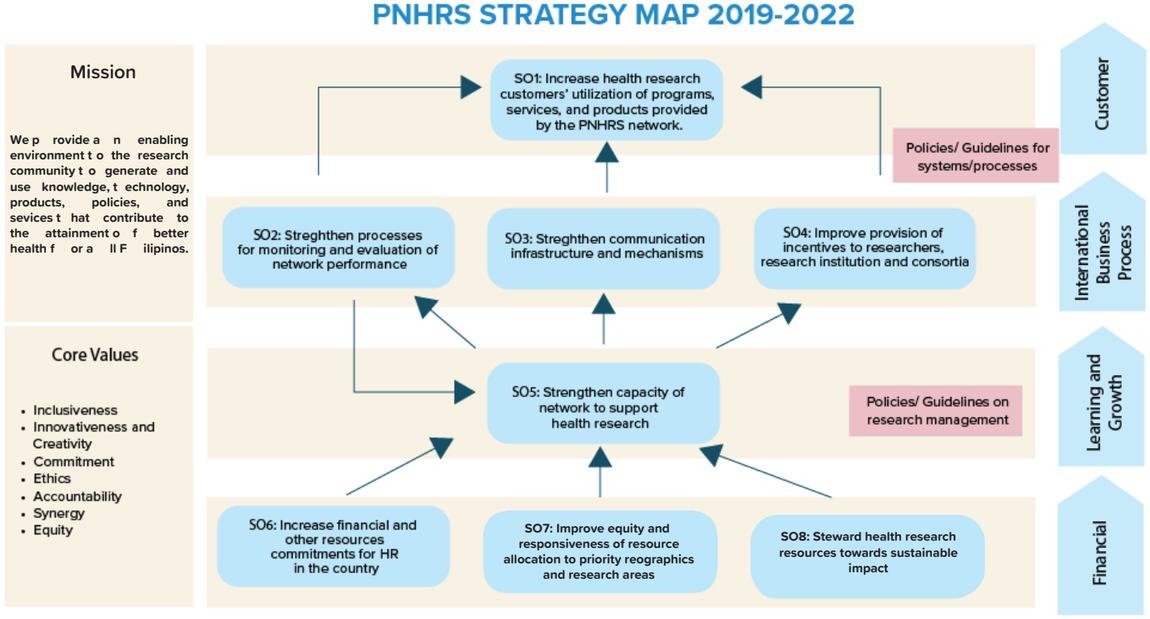
PNHRS | Philippine National Health Research System

PNHRS Midterm Review and Strategic Planning Workshop

PCHRD as the oversight agency and technical secretariat to the PNHRS led the PNHRS midterm review and strategic planning workshop on 24-25 January. The activity, participated in by key stakeholders, reassessed the PNHRS Strategic Plan (2015-2022), its existing programs and accomplishments vis-à-vis set goals, objectives, and strategies. A revised PNHRS Plan 2020-2022 was formulated which served as the guide to program implementation in the next three years.

By 2022, the PNHRS network is a competent, ethical, dynamic, and responsive responsive research community working for the attainment of national health goals.

PNHRS STRATEGY MAP 2019-2022



Regional Consultations with Stakeholders on PNHRS Strategic Plan and PNHRS Law Implementing Rules and Regulations

For validation and further refinement of the PNHRS Strategic Plan 2020-2022, the Council conducted a series of regional consultations with stakeholders in April and May 2019. All representatives from the regional health research consortia actively participated in the consultations which also included the review of the Implementing Rules and Regulations of the PNHRS Law (Republic Act 10532).

Joint DOST, DOH, CHED and UP Manila

Administrative Order No. 001 s. 2019

THE REVISED IMPLEMENTING RULES AND REGULATIONS

of

Republic Act No. 10532

"The Philippine National Health Research System Act of 2013"

WHEREAS, the Philippine National Health Research System (PNHRS) Act or Republic Act No. 10532 became effective on 1 June 2013 and its Implementing Rules and Regulations (IRR) (Joint DOST-PCHRD, DOH, CHED and UPM-NIH Administrative Order No. 001 s. 2013) became effective on 15 November 2013;

WHEREAS, the IRR shall be reviewed every three (3) years pursuant to Rule 32; and any amendments shall be done in writing and be approved by all implementing agencies as stated in Rule 31 of the same IRR;

WHEREAS, a series of consultations was conducted from 08 April to 28 May 2019 to determine the applicability of the IRR with the law; as such amendments were made and reviewed by all concerned stakeholders and revised IRR was completed on 25 November 2019;

NOW THEREFORE, the following Joint Administrative Order of the Department of Science and Technology through the Philippine Council for Health Research and Development, Department of Health, Commission on Higher Education and University of the Philippines hereby promulgates the revised rules and regulations implementing Republic Act No. 10532.

RESEARCH AGENDA SETTING: LAUNCHING OF THE NATIONAL MENTAL HEALTH RESEARCH AGENDA

The 2019 celebration of World Mental Health Week is particularly special in the Philippines, for it finally saw the launch of the first national research agenda in mental health.

According to the Mental Health Law (RA 11036), research and development has a big role in addressing the growing concerns on mental illnesses in the country. Prior to 2019, no specific priority research topics in mental health existed to guide mental health research investments and initiatives.

The National Mental Health Research Agenda

The National Mental Health Research Agenda (NMHRA) sets the direction for new mental health investments in the country. Under NMHRA, support will be given to researches that improve mental health information systems; strengthen leadership and governance; and provide accessible, available, affordable, and responsive mental health services. This agenda seeks to support the current policy reforms in mental health, as it is informed by developments at the global level.

The NMHRA supplements the National Unified Health Research Agenda (NUHRA 2017-2022) and was developed in partnership with the World Association for Psychosocial Rehabilitation (WAPR) - Philippines.

13TH PNHRS WEEK 2019

Achieving Health-Related Sustainable Development Goals through Research and Innovation

Every second week of August, the health research community celebrates the Philippine National Health Research System (PNHRS) Week. The PNHRS Week celebration serves as a platform for the different stakeholders to discuss the current situation, challenges, and advancements related to improving health and equity through reinforced health research and innovation in the regions and local communities.

Hosted by the Northern Mindanao Consortium for Health Research and Development (NorMinCOHRD), the 13th PNHRS Week celebration was held at the Limketkai Luxe Hotel in Cagayan de Oro City on 13-16 August 2019. There were 1,324 health research stakeholders who participated in the week-long celebration.

This year's theme, "Achieving Health-Related Sustainable Development Goals (SDGs) through Research and Innovation," reflects the country's efforts to meet the SDGs by 2030; the concerns and targets related to health in particular. Two plenary sessions and three parallel sessions covered topics related to strengthening partnerships and contributing research-based solutions in achieving Universal Health Care and health-related SDGs. Satellite events, composed of seven sessions, four contests, and three meetings featured capacity building sessions and exhibits for the health research community.

RESEARCH PROGRAMS

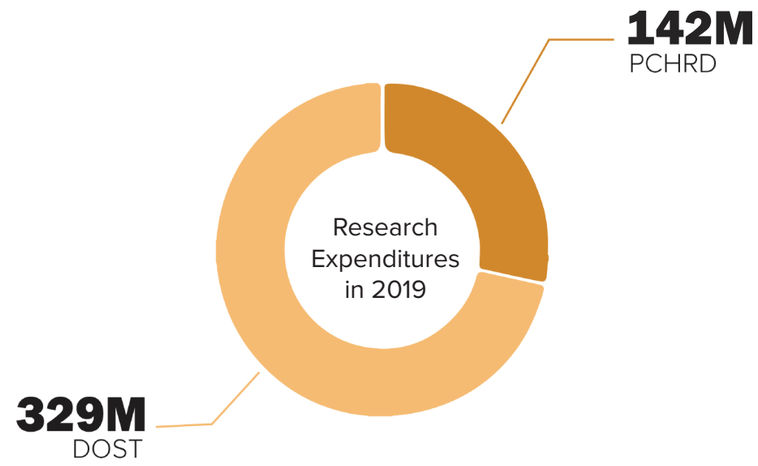
The PCHRD research priorities are contained in Section 2 of the Harmonized National Research and Development Agenda (HNRDA) 2017-2022. The HNRDA, a document of the Department of Science and Technology, articulates the national science and technology priorities and serves as a guide for public investment in R&D, ensuring that the results of S&T efforts are geared towards and are utilized in areas of maximum economic and social benefit for the people. The PCHRD health research priorities are integrated in the National Unified Health Research Agenda (NUHRA) 2017-2022.

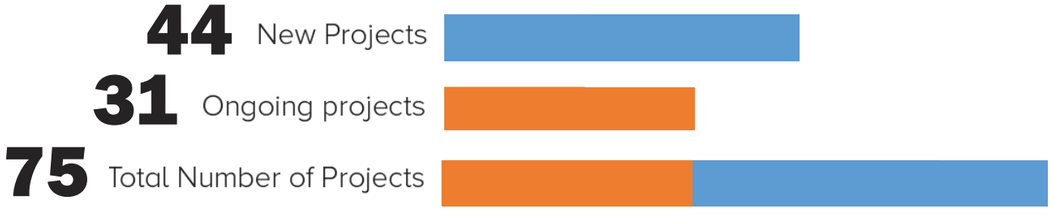
There are nine research priority program areas as follows: Tuklas Lunas ™ (Drug Discovery and Development), Diagnostics, Functional Food, Nutrition and Food Safety, Mental Health, Biomedical Engineering and Hospital Technology, Information and Communication Technologies (ICT) for Health, Dengue and other arboviruses, Omic Technologies for Health, and Disaster Risk Reduction and Climate Change (DRR-CCA) Adaptation for Health.

TUKLAS LUNAS ™ (DRUG DISCOVERY AND DEVELOPMENT)

The Tuklas Lunas Program champions the country's potential to discover and develop affordable and accessible drugs by capitalizing on components sourced from our very own biodiversity. The Council leverages on strengthening the capacities of local researchers across all regions under the herbal and drug track.

Ever since its implementation in 2011, the Program has led the establishment and partnerships with 28 Tuklas Lunas Centers (TLCs) all over the country. As each region has a unique set of resources, each TLC also has a unique set of specializations and targets.





THE FIRST PLANT-BASED DENGUE DRUG CANDIDATE

Pharmalytics Corp and De La Salle Health Sciences Institute

Dengue is one of the most pressing concerns for public health. Despite efforts to mitigate the risks the infection poses to our communities, a dengue epidemic was declared by the Department of Health (DoH) last August 2019 due to the increasing number of recorded cases in the country.

With the hope to provide an accessible and reliable treatment to battle the infection, Dr. Josefino Alvero and Dr. Rita Grace Alvero of the Pharmalytics Corporation in partnership with the DLSHSI currently study the potential of three plant components confirmed to have antiviral and platelet enhancement bioactivity. If successful, the development of this capsule will serve as the first-ever definitive treatment for Dengue in the world.

HIGHLIGHTS

1. The program has completed the dose formulation studies and acute and subchronic toxicity tests. Formulations manufactured already underwent testing and analyses to ensure conformation to specifications while results of animal studies show no significant toxicities.

2. The current project tests the safety of combination formulation and determine the maximum tolerable dose in healthy human volunteers in a clinical trial setting.

3. To date, necessary regulatory and ethics permits were already obtained. Subject recruitment and enrollment have already commenced.

DISCOVERY AND DEVELOPMENT OF HEALTH PRODUCTS – MARINE COMPONENT

UP Marine Science Institute and collaborating institutions

Started in 2014, the DDHP Marine Program has taken the Philippines' high marine biodiversity to their advantage – focusing on the development of anti-pain and anti-neurodegeneration, as well as anti-infective and anti-cancer drug candidates. To date, the DDHP Marine team's innovative take in drug development research has brought significant contributions to the discovery and characterization of bioactive marine compounds.

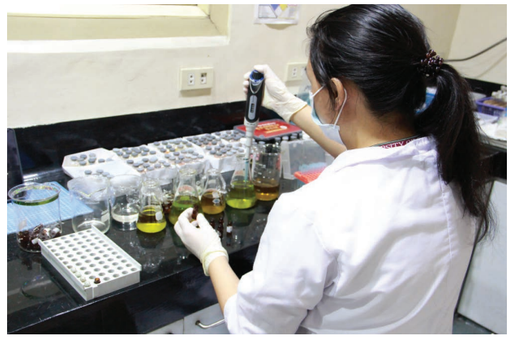
Among the accomplishments of the program include the isolation and full characterization of six neuroactive peptides and the production of six chemically synthesized peptides, one of which was successfully incorporated into dextran microneedles. The program also made progress in the isolation and screening of compounds from sponges. Researchers have isolated a total of 732 sponge-associated marine microorganisms that generated 2,928 fractions stored in a chemical library. They have also isolated 39 compounds with complete structure and bioactivity assessment from the 28 priority microorganisms and six (6) priority sponges; five (5) selected for culture optimization studies, from which fractions tested against antiproliferative assay against HCT116 and MCF7 cancer cell lines and chemical profiling.

In the first phase of DDHP Marine implementation, the following facilities were also established:

- Xenopus housing facility,
- Electrophysiology work stations,
- Facilities for peptide sequencing and synthesis, drying extracts, preservation of microorganisms, natural product isolation, and mass spectrometry,
- Marine chemical library of extracts and pure compounds

A total of 25 research associates, 16 ongoing graduate students, 2 Master of Science graduates, 3 Bachelor of Science graduates, 2 Trainees, and 2 Visiting Professors were trained under the project. Nine (9) oral and 41 poster presentations across international and local conferences were also conducted.

The Phase II of the program that commenced in September 2019 will build on the accomplishments of the first phase to pursue further characterization and development of promising compounds discovered in Phase 1, scale up the screening effort, capitalize on new assay technologies and approaches to enhance detection of range of bioactivities, and further develop the program's capability and infrastructure to undertake more efficient, effective, productive, and sustained drug discovery and development campaigns.



Central Luzon State University – Tuklas Lunas Development Center (CLSU-TLDC)

Myko-mining and Myko-pharming of Wild Edible and Poisonous Mushrooms in Luzon Island, Philippines for their Medicinal Properties

Dr. Renato G. Reyes, together with Dr. Sofronio P. Kalaw, Dr. Cesar V. Ortinero, and Dr. Jerwin R. Undan, pursues research which develops functional food from local mushrooms and explores wild mushrooms (both edible and poisonous) as sources of compounds for the development of drug leads.

To date, a total of 173 mushrooms were collected from the different study sites in Luzon. These mushrooms' mycelia were molecularly identified, and their bioactivities were established through enzyme inhibition assays.

On its second phase, the project has four (4) components:

- Project 1: Ethnomycology, Mycophagy and Mykopharming of Wild Edible and Poisonous Mushrooms
- Project 2: In Vitro Enzyme-based Screening of Mushrooms for Anti-pain, Anti-hypertensive, and Anti-diabetic Properties
- Project 3: Molecular Identification, Toxicity Profiling and Anti-Cancer Screening of Mushrooms Luzon Island, Philippines
- Project 4: Development of Mushroom-based Functional Foods

Personnel from all four projects completed trainings in conducting laboratory methods for enzyme-based bioactivity assays and will soon train for anti-cancer and in vitro assays for organ toxicity.

Moreover, a paper poster presentation about the ethnomycological study of mushrooms in Luzon was awarded as Best Poster during the Annual Scientific Conference of the Philippine Society for the Study of Nature held in Palawan State University on 2 to 6 July 2019.

University of San Agustin – Tuklas Lunas Development Center (USA-TLDC)

Metabolomics-driven Discovery of Antimicrobial Drug Leads and Anticancer Screening of Extracts from Marine Sediment-derived Actinomycetes of Iloilo

Led by Dr. Jonel Saludes, the project aims to identify new or novel compound(s) with antimicrobial activity from Actinomycetes collected in Iloilo against ESKAPE and Salmonella typhimurium pathogens, The extract library generated will also be screened for potential anti-cancer activity.

Out of 17 actinomycete extract samples, the project pursues three (3) priority extracts for purification and isolation. Bioactive fractions are already obtained with some identified compounds.

The results of this research were presented during the Philippine Society for Microbiology Visayas Annual Meeting and Regional Scientific Conventions, where the project team won 2nd place for the poster presentation category.

As part of the project's deliverables, Philippine Science High School Western Visayas Campus students had their Summer Internship at the TLDC laboratory. The students experienced hands-on training on laboratory techniques, polymerase chain reaction (PCR) analysis, and other activities of the project under the supervision of the research assistants.

Central Mindanao University – Tuklas Lunas Development Center (CMU - TLDC)

To explore the potential of underutilized species, the CMU-TLDC leverages on the proximity of the university to areas where local indigenous information exist.

From January 2016 to October 2018, the Center screened 57 extracts for anti-inflammatory and anti-cancer bioassays. From these, nine (9) extracts have anti-inflammatory action, and two (2) species were found to inhibit the proliferation of lung adenocarcinoma A549 cells. CMU was also able to establish its only mammalian cell culture laboratory where the 57 extracts were tested and found nontoxic on human epidermal keratinocytes.

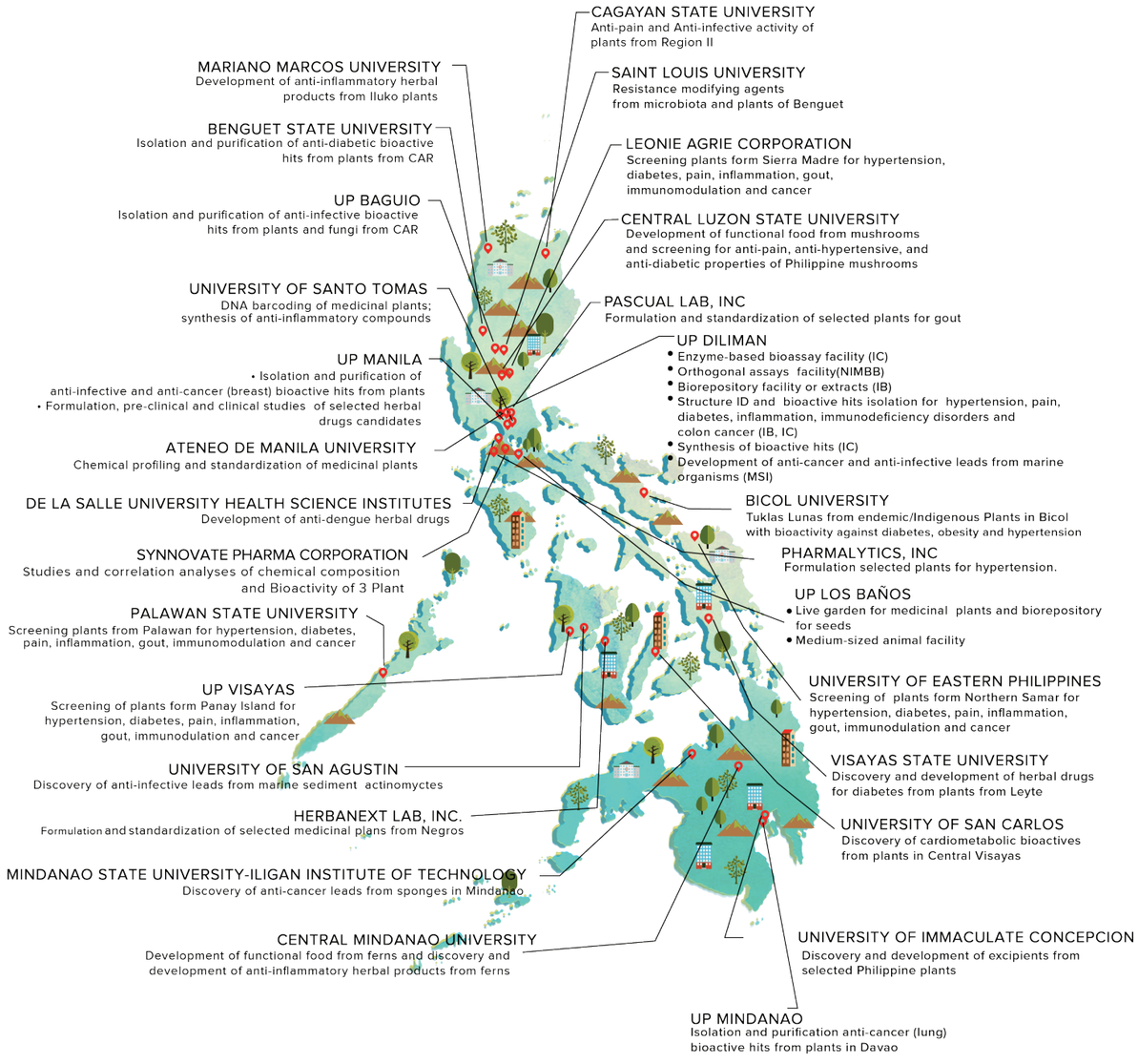
In its second phase, production of herbal drugs and innovation of functional food products from ferns were conducted. The program has collected spores, prothalli, and young plants of selected fern species. The following functional food products utilizing non-toxic fern species with possible market potentials were also developed:

- fern tea
- fern yogurt
- fern crackers
- fern nutribar
- fern gummy candy

The Center also conducted trainings at several established assay laboratories of the National Institute of Molecular Biology and Biotechnology (NIMBB) and Institute of Chemistry (IC) of the University of the Philippines Diliman.

Moreover, the program is working on the development of potential commercializable products and the development of topical anti-inflammatory formulations from ferns, in collaboration with the UP Manila College of Pharmacy.

TUKLAS LUNAS™ IMPLEMENTING PARTNERS IN THE PHILIPPINES



DISCOVERY AND DEVELOPMENT OF HEALTH PRODUCTS – FORMULATIONS

UP Manila and UP Diliman, Pharmalytics Corporation, Herbanext Laboratories, and Pascual Lab

Seven (7) project components:

1. Development and Validation of TLC Methods for Chemical Standardization of Plant Extracts with Anti-Diabetic and Anti-Hypertensive Properties
2. Chemical Profiling and Standardization of Medicinal Plants
3. Formulation of Anti-Inflammatory Herbal Drugs for Pre-clinical and Clinical Development
4. Formulation of Standardized Herbal alpha-Glucosidase Inhibiting Extracts for Pre-Clinical and Clinical Development
5. Standardized Dosage Forms of Biologically Active Extracts Suitable for Use in Pre-clinical and Clinical Development
6. Evaluation of Xanthine Oxidase Inhibition Activity of the Formulated Tablet from the Ethanolic Extracts of Selected Medicinal Plants for Gout
7. Formulation of Anti-Hypertensive Standardized Herbal Extracts for Pre-clinical and Clinical Development

Under the program, a total of 30 plants have already undergone extensive studies.

At the end of Phase I, researchers have formulated 23 plant samples into specific dosage forms. The bioactivities of the 23 plant samples include:

- seven plants formulated with anti-diabetic activity
- five plants with anti-inflammatory activity,
- five plants with anti-hypertensive activity,
- five plants for hyperuricemia, and
- one plant with anti-obesity herbal activity

The formulated dosage forms have undergone stability testing to establish the quality of the product at varying temperatures, humidity, and other related environmental issues. To ensure that the formulated products retain their activity after the formulation processes, tests were conducted.

The following facilities were also established through DDHP funding:npilot scale spray-drying facility for the aqueous ethanolic extracts of medicinal plants, first and only High-Performance Thin Layer Chromatography (HPTLC) laboratory for the phytochemical quantification and quality standardization of herbal extracts in Visayas.

Tuklas Lunas Consortium in the Cordillera: Documentation, Standardization, and Formulation of Dosage Forms from Indigenous Plants and Microorganisms with Bioactivities

Aims to discover anti-infective compounds from diverse plant species and microorganisms indigenous to the Cordillera region

- Successfully isolated the DNA from 3 fungi of interest
- Completed the ethyl acetate of the culture broths of 27 isolates
- Digitized 60% of medicinal plant data

Development of Anti-inflammatory Herbal Products from Iluko Indigenous Plants

The project searches for potential drug sources from indigenous plants (IPs) of Ilocos Norte.

- Tested eight out of the 11 target plants for its anti-inflammatory activities
- About 18 extracts, from seven plants had been initially assayed both for the LOX and COX inhibitory activity

Philippine Biorepository Network

Aims to set up a central, coordinating network of institutions to biobank indigenous medicinal plants of the Philippines

- Collected 68/80 accessions of 21 medicinal plant species
- Finalized the Material Transfer Agreement (MTA) and Standard Operating Procedures (SOPs) for technical and legal review

Discovery and Development of Health Products (DDHP): Disease-Specific Bioactive Hits from Terrestrial Organisms

The current program is now on its third phase and it aims to isolate and elucidate bioactive compounds from priority bioactive extracts against specific diseases

Bridging Efficacy and Safety: IND-enabling Suite of ADMETox Assays

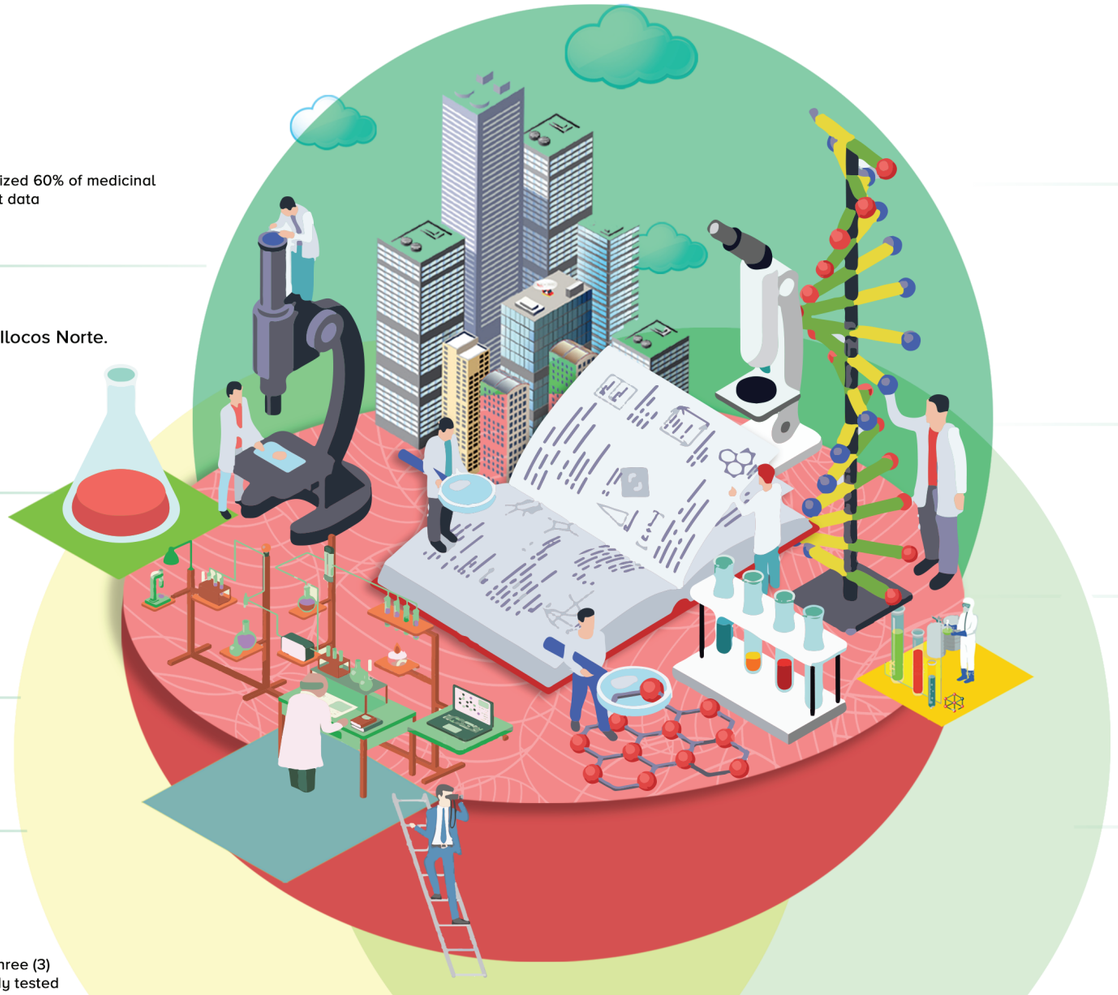
Aims to identify the most drug-like iteration of bioactive parent compounds based on physico-chemcial, biophysical and pharmacokinetic properties as well as toxicity profile

- Protocols for 23 in vitro assays for the identification of physicochemical properties, assessment of enzyme interaction and cell-based toxicity testing were already prepared and are currently being optimized
- For the in vivo assays, three (3) compounds were already tested for the determination of its pharmacokinetic properties

Formulation of Dosage Forms Using Existing and Plant-Derived Excipients

A collation of four (4) research project components under the University of the Immaculate Conception specifically on potential excipient properties of plant-derived mucilage and pectin as well as the toxicological screening of the excipients

- **Project 1:** Extraction of pectin from mango peels and determination of its properties as a binding agent obtained from two varieties of mango
- **Project 2:** Extraction of pectin from passion fruit peels by dehydration and freeze drying to be utilized as a tablet binder
- **Project 3:** Characterization of the extracted mucilaginous substances from four plants for pharmaceutical excipient use
- **Project 4:** Evaluation of the acute, sub-acute, and chronic toxicity as well as the mutagenicity and presence of heavy metals in plant-derived excipients in order to establish the toxicity profile of the plant



TUKLAS LUNAS AT A GLANCE

Tuklas Lunas from Endemic/Indigenous Plants in Bicol with Bioactivity against Diabetes, Obesity and Hypertension

Aims to search for endemic/indigenous plants in biodiverse sites in the Bicol Region, discover non-toxic bioactive hits from these plants and locally develop herbal drugs with pharmacological activity against diabetes, obesity and hypertension

Development of Standardized Anti-infective and Anti-pain Herbal Products from Region 2

To develop anti-infective, anti-pain and anti-tuberculosis (TB) herbal drug candidates that can be pursued further for pre-clinical and clinical development

- 24 out of 52 plant species were collected, coded and processed

USC-TLDC (Phase 2): Discovery of cardiometabolic bioactives from plants in Central Philippines

Intends to expand the Phase 1 to include bioactivity and toxicity study plants from Central Visayas for cardiometabolic disorders, and extend prior ethnobotanical survey to other provinces in the region

Discovery and Development of Natural Products from Mindanao Marine Resources

Aims to discover pure therapeutic drug leads or templates sourced out from marine resoures collected off the coasts of Mindanao

- Purification and activity testing of most Phase 1 active sponge fractions have been done
- Preliminary draft was done for the guide to seahorses and pipefishes based on bycatch fishery and field sightings data

Discovery and Development of Health Products Program: Synthesis and Derivatization of Disease-Specific Bioactive Hits and Lead Compounds (Phase II)

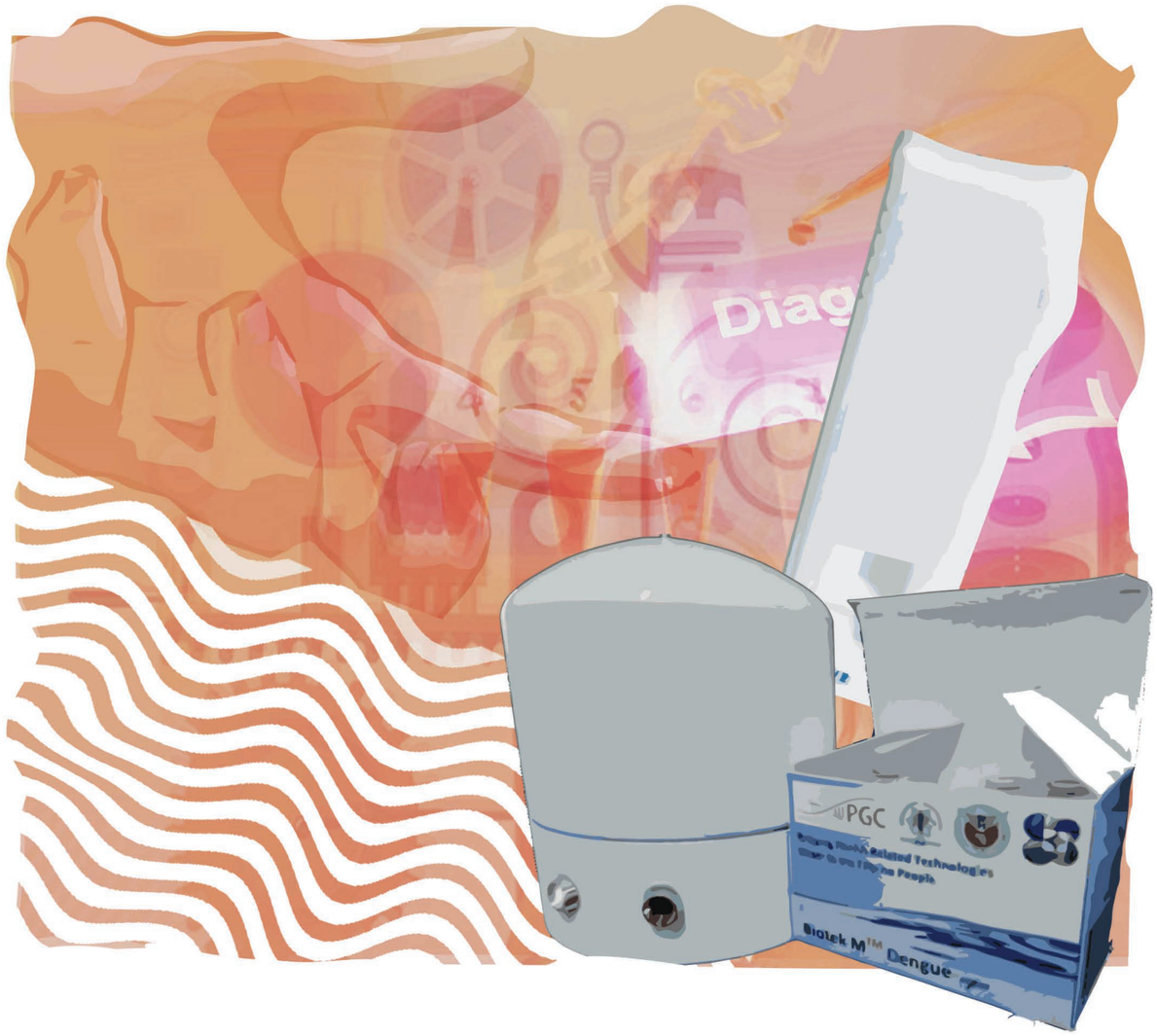
The Phase II program will utilize synthesis and in silico studies to optimize lead structures prioritized in Phase I and obtain clinical candidates with optimum efficacy and physico-chemical, biophysical, pharmacokinetic properties and toxicity profile.

In vitro toxicity testing of Plant Extracts with Bioactivity Against Diabetes Mellitus

The project is a continuation of the Phase I program of the Visayas State University TLDC which screened for plants with anti-diabetic property.

- A total of 28 plant species were previously found to have promising activities against diabetes
- Plants that are found to have promising activities are now being subjected to in vitro toxicity testing

DIAGNOSTICS



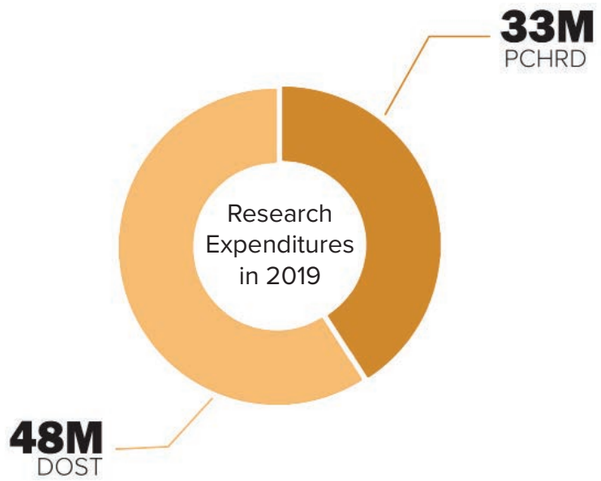
Recognizing the importance of early diagnosis as key for early management and intervention of diseases or infections, the Diagnostics Program of the Council aims to develop diagnostic kits for priority communicable and non-communicable diseases.

In 2019, the Program focused on the development and improvement of detection kits for diseases like tuberculosis, paragonimiasis, dengue, Zika, chikungunya, typhoid fever and malaria. There is also an effort to develop kit for the detection of HIV drug resistance. A study on the prediction model using artificial intelligence (AI) for hepatorenal disease is also underway.

The researchers hope to move and facilitate the development of these kits to address the need for fast, sensitive, specific, and cost-efficient detection kits for priority diseases.

KEY ACCOMPLISHMENTS

1. The prototype HIV drug resistance detection kit
2. Point-of-care diagnostic kit that will simultaneously detect *Paragonimus westermani* and *Mycobacterium tuberculosis*



Responding to the Philippine HIV Epidemic

An HIV Drug Resistance Surveillance Library and
Development of Molecular Diagnostics for Drug-Resistance Detection
Part 3: Development of Rapid Diagnostic for Detecting Lamivudine Resistance

Dr. Edsel Salvana of UP-NIH pursues research on a test kit that will detect the resistance of HIV to drugs, which will help doctors decide on the best treatment for their patients.

The project is a collaboration among different institutions within the UP system: UP-NIH performs the experiments, PGH provides the samples from HIV patients, and PGC conducts deep sequencing services. The project explores portable sequencing platforms as an alternative to off-site testing to integrate drug-resistance testing as part of the usual care for HIV patients as HIV drug resistance increases.

The patients enrolled in Part 2 were subjected to biannual viral load determination. Genotyping for patients who are not virally suppressed were also conducted. To date, the project collected post treatment samples from 120 patients. The CD4 counts and viral load determination of all the patients have been completed. Data obtained from MinION sequencing procedures were compared with Sanger and NGS data using Bioinfomatic tools.

The project is ready to optimize and validate the MinION tool for the second year of the project.

Development of Low Cost Point-of-Care Diagnostics for Simultaneous Detection of *Paragonimus westermani* and *Mycobacterium tuberculosis* using RPA Technology

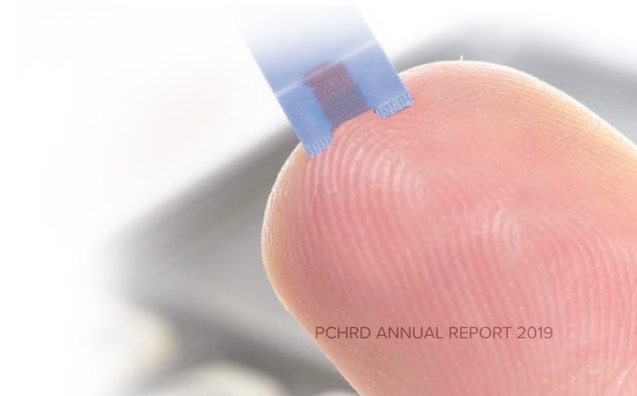
Institute of Molecular Biology and Biotechnology, UP-NIH

To avoid misdiagnosis and provide appropriate treatment to paragonimiasis and pulmonary tuberculosis, Mr. Angelo dela Tonga and his team is working on the development of a point-of-care diagnostic kit that will simultaneously detect *Paragonimus westermani* and *Mycobacterium tuberculosis* through isothermal technologies.

In 2019, the project has achieved the following outputs:

1. Continuation of laboratory analytical testing in determining specificity and sensitivity of the assay, as well as the limit of detection
2. Determination of cross-reactivity of the developed assay
3. Comparison of the developed assay with gold standards of detection of *P. westermani* and *M. tuberculosis*
4. Determination of reproducibility and precision of the developed assay

Both paragonimiasis and pulmonary tuberculosis have common clinical manifestations including cough, dyspnea, night sweats and blood in sputum, making initial diagnosis difficult. The slow and incorrect diagnosis for these two diseases has implications on the application of proper chemotherapy more importantly in areas of the country where these two diseases are endemic. The kit to be developed can be used in rural areas wherein molecular detection is not available.



FUNCTIONAL FOOD

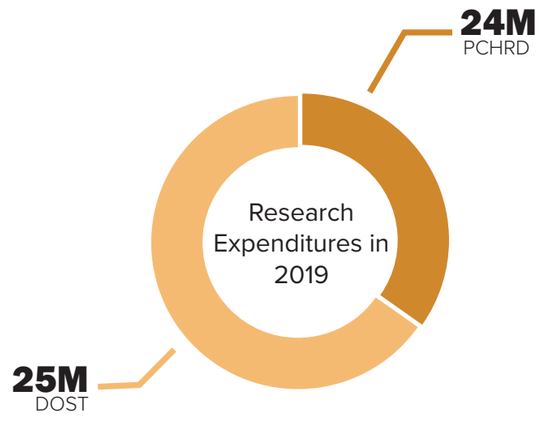
To aid in the management and prevention of non-communicable diseases, the Functional Food (FF) research program leverages on the abundance of agricultural products in the country to repackage crops and food products with high nutritional value into functional products with scientific and up-to-date quality data for verification of a qualified health claim. Through the program, the DOST-PCHRD along with Filipino researchers hope to identify possible health advantages beyond the food products' distinctive nutritional benefits for the prevention of non-communicable diseases.

In 2019, the FF framework was finalized with the following main components: characterization, safety assessment, establishment of health benefits, and product development and was updated with the following nine priority commodities for research: root crops, seaweeds, local berries, turmeric, Pili, edible mushrooms, moringa, VCO and other coconut products, and unpolished and pigmented rice.

The program is expected to expand its network in 2020. With this, capacity building efforts for the research program is also strengthened through more international and local collaborations.

KEY ACCOMPLISHMENTS

1. Discovering the health potentials of Sweet Potato Flour (SPF) varieties in developing food products
2. Exploring the pili nut as a source of antioxidants and dietary fiber
3. Inhibitory peptides from Mangoes in the regulation of hypertension



Discovering the health potentials of Sweet Potato Flour (SPF) varieties in developing food products
University of the Philippines Diliman

The team of Dr. Alonzo Gabriel from UP Diliman explored the potentials of Philippine sweet potato as a functional and technological ingredient in the form of sweet potato flour (SPF). Results showed that the varieties are viable for the development of food products such as bread, soups, sauces, and breadings due to its high dry matter content and flour yield, and low-fat content.

Further characterization of health components and functional properties of the sweet potato cultivars revealed that the purple-fleshed sweet potato consistently exhibited the highest value in terms of total phenolics, total flavonoids, and antioxidant activities.

Once completed, the outputs of the project can be used by the food industry in developing food products derived from sweet potato.

Exploring the pili nut as a source of antioxidants and dietary fiber
University of Santo Tomas

The team of Dr. Elizabeth H. Arenas of UST explored the health potentials of pili nut, a nut native to Southeast Asia in August 2019.

As of December 2019, the program, composed of three projects, has started the formulation of the Ready-to-drink beverage and burger patties, as well as the identification of the bioactive secondary metabolites in Pili pomace. For the following years, the team will proceed with animal studies and sensory evaluation.

Angiotensin I-Converting Enzyme (ACE) Inhibitory peptides from Mangoes (*Mangifera indica L*. cv. 'Carabao') in the regulation of hypertension
University of the Philippines Los Banos

Dr. Mary Ann O. Torio of the University of the Philippines Los Baños and her team led a project that aims to isolate, purify, and evaluate the ACE inhibitory activity of the 'Carabao' mango samples from different provinces in the Philippines. Results from this study will provide information about mango as a possible natural alternative source of anti-hypertensive compounds that will help in the management of high blood pressure.

So far, the project team extracted the crude proteins of mangoes from three selected provinces which were then characterized, purified, and quantified. Other samples will also undergo the same process prior to the conduct of rat assay for in vivo efficacy studies and peptide sequencing.

BIOMEDICAL ENGINEERING AND HEALTH TECHNOLOGIES

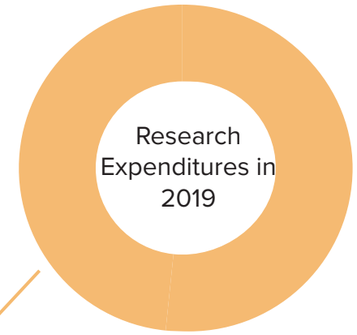
For many developing countries, access to biomedical devices and hospital equipment can be challenging, especially for rural communities. In the Philippines, where almost all medical devices are developed abroad, this becomes a barrier for Filipinos to access affordable healthcare solutions.

Following the NUHRA 2017-2022, the Council seeks to address the need for locally-made, affordable, safe and reliable hospital equipment and biomedical devices at par with both regulatory and industry standards, more affordable than imported devices.

Under the NUHRA Global Competitiveness and Innovation in Health, the following innovation opportunities were identified and listed as priority technologies: (1) respiratory failure support, (2) artificial body part replacement (prosthesis), (3) rehabilitation medicine, (4) minimally-invasive surgical procedures, (5) contraception and birth control, (6) orthopedic surgery, (7) post-operative care, (8) spinal disorders, (9) eye health, (10) wound care, (11) primary health care, and (12) PWD-assistive devices.

KEY ACCOMPLISHMENTS

1. Establishing Institute of Biomedical Engineering and Health Technologies
2. Ginhawa, Ventilator for the people
3. Iran-PH dialogue on biomedical device research



EIGHT MAJOR ONGOING PROJECTS FUNDED AND MONITORED BY THE COUNCIL

GINHAWA: Reliefvent
A compact, portable, AC or DC powered ventilator that can be used by children and adults

AGAPAY
A robotic exoskeleton for upper extremity rehabilitation

GAIT
Quantitative gait assessment methods of normal and hemiplegic gait using 3D Motion Capture and Wearable Inertial Sensors

TAYO
A robotic Rehabilitation for the Lower Extremity

INSOLE
An Insole pressure sensing system with inertial measuring unit for the prevention of foot ulcers in diabetes mellitus"

BOAT: Balance-on-Action-Team
Trains balance for rehabilitation of post-stroke and post-injury patients

LAPARA
Robotic articulating laparoscopic instrument sensors

PCFS:Posterior Cervical Fixation System
A high-quality and affordable posterior cervical implants

Ginhawa: Ventilator for the People

University of the Philippines Manila

In the Philippines, data shows that there is only one ventilator for every ten ICU beds despite the clear need for ventilators to assist patients in breathing.

To bridge this gap, the team of Dr. Abundio Balgos of UP Manila developed the Ginhawa: ReliefVent, a ventilator that can be used by children and adults which is projected to be more affordable than similar equipment currently available in the market.

To date, initial clinical testing for human safety and efficacy studies was participated by six (6) patients. The current design is relatively lightweight and mainly powered by compressed air. Further value engineering and clinical testing of the prototype will be conducted.

Establishing Institute of Biomedical Engineering and Health Technologies

De La Salle University

The establishment of the Institute of Biomedical Engineering and Health Technologies (IBEHT) is envisioned to serve as a one-stop-shop for information and support infrastructure on hospital equipment and biomedical devices in the Philippines. The institute intends to provide a roadmap and an environment for a lab-to-market projects towards the development of a biomedical device industry.

On 6-8 November 2019, the IBEHT conducted a three-day seminar-workshop on Biomechanics with Dr. Justine Wade Fernandez, an Associate Professor of the Department of Engineering Science and Auckland Bioengineering Institute University of New Zealand as the resource person.

IBEHT also facilitated the scholarship of two applicants for graduate programs on biomedical devices — Engr. Felix Camagay and Ms. Danica Mitch Pacis — under the Department of Science and Technology - Science Education Institute (DOST-SEI) Foreign Graduate Scholarship Program. Mr. Camagay is pursuing an MS in Biomedical Engineering at the Université Paris Descartes, Arts et Metiers Paristech, Université Paris Sciences et Lettres in Paris, France. Ms. Pacis, on the other hand, will commence her study in 2020 at the University College

London, England United Kingdom.

International Forum on Biomedical Devices and Drug Discovery

To provide a venue for conversation and identify possible areas of collaboration, the Council co-organized the International Forum on Biomedical Devices and Drug Discovery Research on 28 to 29 May 2019 at the Philippine International Convention Center (PICC), Pasay City. Envisioned to strengthen the country's capacity in R&D and technology transfer, researchers and experts from Iran and the Philippines shared their best practices in R&D and showcased their locally-developed medical equipment

Covering technologies for micro-computed tomography (Micro-CT), micro-PET scanner, micro-SPECT imaging, and Fluorescence Planar Molecular imaging, the 2-day forum was attended by a total of 160 participants.

ICT FOR HEALTH

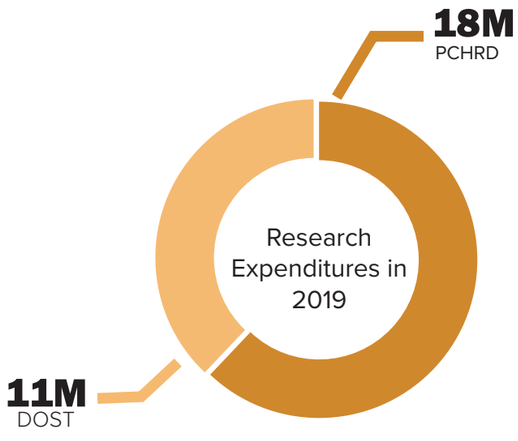
Access to healthcare services and real-time information is one of the major challenges in today's healthcare system. According to the DoH, ICT is of the the strong tools which aids in bringing healthcare closer to the Filipino people.

The ICT for Health program covers research on data science and eHealth solutions for recording and utilizing patients' information, mapping of health risks and health resources, telemedicine, and health promotion.

In 2019, the ICT for Health R&D Program focused on the development of technologies for public health surveillance tools for health information exchange and systems interoperability, and ICT-enabled health services. An ICT for Health Stakeholders' Consultation was also held to refine the ICT for Health R&D Agenda during the 13th PNHRS Week Celebration.

KEY ACCOMPLISHMENTS

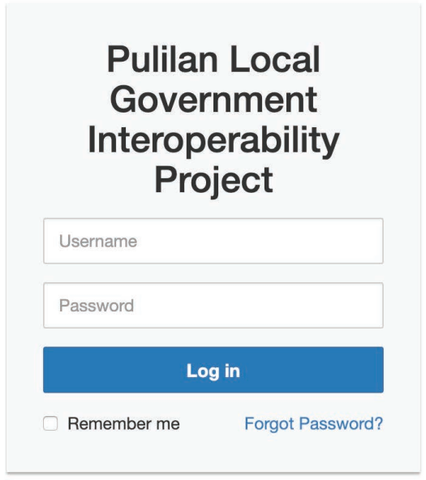
1. eHATID Interoperability Layer
2. Aruga sa Batang May Cancer Initiative Program
3. EMR for X-linked Dystonia Parkinsonism (XDP) Care Project
4. Telehealth Services for the Treatment of Psychiatric Conditions
5. Traditional Knowledge on Health
    - Documenting the Traditional Knowledge and Practices on Health and Development of the Kankanaey-Palina of Kibungan Benguet and the Ekacharcran Ethnolinguistic Group of Barlig Mountain Province



eHATID INTEROPERABILITY LAYER

Ateneo De Manila University-Institute of Philippine Culture (ADMU-IPC)

SMILHIS™



To shorten the processing time of releasing health certificates and work permits in the municipality of Pulilan, Bulacan, the team of Dr. Dennis Batangan of ADMU-IPC led the development of an LGU-managed interoperability platform entitled, "eHATID Interoperability Layer (IOL) or Smarter and Integrated Local Health Information Systems (SMILHIS)".

The SMILHIS is currently being utilized by the RHU-Sanitary Office, Treasury Office, and the laboratory and diagnostic center in Pulilan City. As of August 2019, there is a total of 590 applications and 198 health IDs, health certificates, and work permits generated through the system.

EMR for X-linked Dystonia Parkinsonism (XDP) Care Project

UP Manila National Telehealth Center (UP-NTC)

The team of Dr. Raymond R. Sarmiento of UP-NTHC developed a web-based Electronic Medical Record (EMR) module for documenting patient history, diagnostics, clinical assessment, treatment, and scheduling of follow-up appointments of patients with X-linked Dystonia Parkinsonism (XDP). The aim of the project is to improve the collection, processing, and analysis of clinical and epidemiologic data of patients with rare diseases, specifically, those diagnosed or suspected to have XDP. The team also developed a mobile application for community health advocates to serve as a platform for monitoring patients who are unable to visit the movement disorder clinics, as well as a health data dashboard for analyzing aggregate data of XDP patients.

A web-based Electronic Medical Record (EMR) module for care of patients with XDP

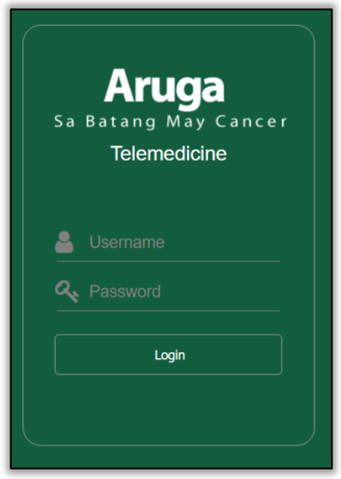
A Mobile Application for community-based assessments and follow-up that integrates with the EMR

A National Registry with a Dashboard reflecting set indicators for XDP-related decision-making

In 2020, beta testing and deployment of the said technologies will be conducted in two sites, namely Philippine General Hospital – Section of Neurology Out-Patient Department and Viterbo Movement Disorder Clinic in Roxas, Capiz.

Aruga sa Batang may Cancer (ABC) Initiative Program

University of the Philippines Open University



"To date, over 300 healthcare professionals and primary caregivers utilize the ABC Intitiative system through the website (www.arugaproject.com)."

ABC Initiative is a web-based pediatric palliative care service provider offering three services in one platform, namely:

1. provision of learning materials for healthcare professionals and primary caregivers of pediatric patients with cancer,
2. development of a telemedicine platform which connects primary care physicians and patients with oncologists in regional tertiary hospitals, and
3. establishment of a pediatric cancer registry

Through ABC's telemedicine platform, pediatric patients who are originally consulting with oncologists from tertiary hospitals may avoid long hours of travel and save on transportation expenses by availing telemedicine-enabled follow-up consultations in the nearest Rural Health Unit or Health Center to their area of residence. Each patient will be assigned to a patient navigator who will facilitate enrollment to the telemedicine program and scheduling of the tele-consultations.

Currently, there are eight patients enrolled for teleconsultations in Bicol Regional Training and Teaching Hospital. The project team is still finalizing details and recruiting patients for the testing of the telemedicine platform in Vicente Sotto Memorial Medical Center, Southern Philippines Medical Center, and Philippine Children's Medical Center.

Telehealth Services for the Treatment of Psychiatric Conditions

Southern Philippines Medical Center

To address the lack of psychiatrists, the team of Mr. Gregorio R. Candelario, Jr. of the Southern Philippines Medical Center (SPMC) in Davao developed the Customized Telepsychiatry Program.

Utilizing video conferencing, the program enables online consultation between psychiatrists and their patients through software like Skype and Chrome box video recording technology.

Facilitated by psychiatrists from the SPMC, the program is currently utilized by the J.R Borja General Hospital (JRBGH) in Cagayan De Oro City.

From July 2018 to February 2019, a total of 76 psychiatric patients were diagnosed through the program.

TRADITIONAL KNOWLEDGE ON HEALTH

The Traditional Knowledge (TK) on Health Program aims to preserve the traditional knowledge and practices on health, disease, and healing of the community through documentation in a digital library. Developed by the UP Manila, the program is implemented in the regions by local universities and colleges.

As of 2019, the Council, in partnership with the Philippine Institute of Traditional and Alternative Health Care (PITAHC) and the Department of Environment and Natural Resources (DENR) have supported 27 projects which covered 43 ethnolinguistics communities and documented more than 3,196 medicinal plants.

Each project under the TK on Health Program follows the community-based participatory action research approach and adheres to the principle of mutual learning and communal decision making among community members.

Aside from the documentation projects, capacity-building activities for TK researchers such as proposal writing workshops were also conducted. Information dissemination about the program were undertaken through FGDs, meetings, and forums.

Documenting the Traditional Knowledge and Practices on Health and Development of the Kankanaey-Palina of Kibungan Benguet and the Ekacharcran Ethnolinguistic Group of Barlig Mountain Province

Led by Dr. Ruth Batani of the Benguet State University, the project aims to document the traditional knowledge and practices on health of the Kankanaey of Brgy. Palina, Kibungan, Benguet and Ikachacran Ethnolinguistic Group of Kadaclan, Barlig, Mountain Province.

The research aims to carry out a community-based participatory research and development approach, wherein the communities are actively and effectively involved in the documentation and protection of their cultural heritage on health and healing.

The project team was able to document the name of medicinal plants, morphological description, curable dieases, method of preparation and application, and conservation status with the help of the local community members.

Several workshops such as Photography Workshop on Medicinal Plants, Plant Identification Workshop, Layout Workshop on How to Produce Booklets and Biodiversity Walk with the Herbalist were also conducted by the project team as part of the capacity-building activities for the local community members. Majority of the participants of the workshops were senior high school students who are also members of the community.

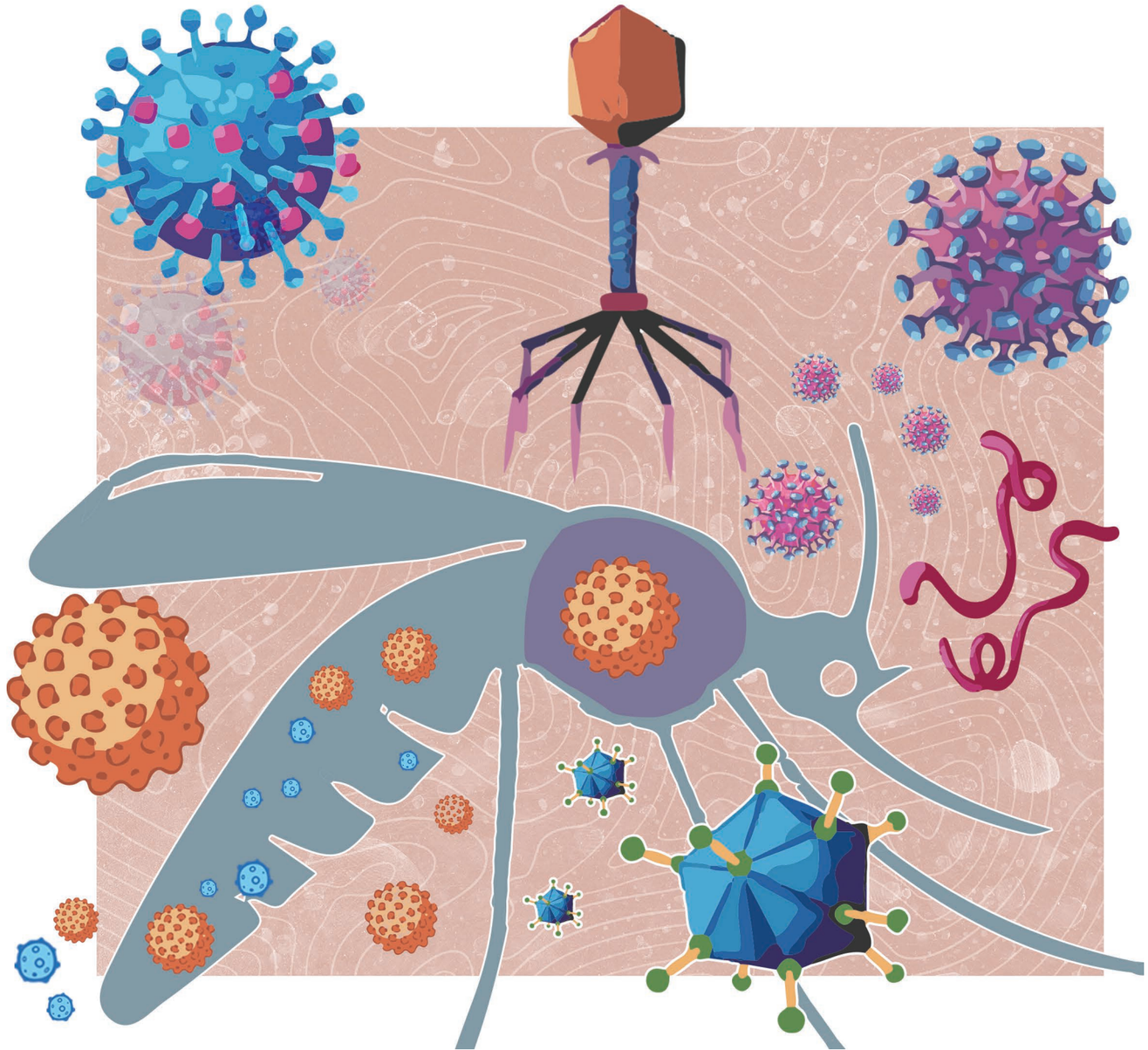
Pista ng Gamutang Pilipino 2
Celebrating the country's diverse resources and capacities for building a healthier Filipino nation

With the theme, "*Mga Lokal na Kaalaman tungo sa Pambansang Kamalayan para sa Kalusugan,*" the second installment of the Gamutang Pilipino was conducted at the Cagayan State University, Tugegarao City on 20-22 November 2019.

Attended by more than 500 participants, the three-day event, composed of two plenary and four parallel sessions, featured discussions on traditional knowledge and practices regarding health promotion. At the end of the conference, set of recommendations for policy and/or program creation to promote Philippine traditional medicine and its role in the healthcare delivery system were proposed. Moreover, event also identified the need to publish a compendium on Philippine traditional knowledge and practices for dissemination.

On the same event, FIlipino healers also recited the *Deklarasyon Tuguegarao sa Gamutang Pilipino* to declare a statement of commitment in delivering healthcare service to the Filipino people.

DENGUE AND OTHER ARBOVIRUSES

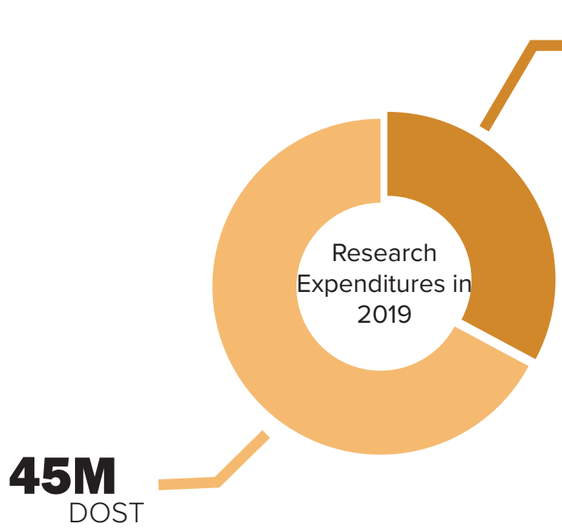


Despite vector control efforts and available vaccine, dengue persists to be a national health concern, even reaching an epidemic status mid-2019. As of July 2019, nearly 131, 000 cases of dengue were reported to the DoH. This is almost thrice higher than the overall cases in 2018. Recognizing the need to strengthen research and innovations to address this the increasing number of deaths due to dengue, the Council undertakes research through the Dengue and other Arboviruses Research Program.

A collaborative research with the Institut Pasteur International Network (IPIN) scientists has established three Work Packages (WPs) which are collectively called the “CLimate and EnvironMENt change on dengue Transmission” or CLEMENT. These projects focus on dengue control and monitoring of viral pathogens in the country.

KEY ACCOMPLISHMENTS

1. *Aedes* Adaptation Genomics Program
2. Dengue mosquito control trials in the Philippines
3. Philippine land use change and arbovirus diversity



WORK PACKAGE 1

Aedes Adaptation Genomics Program

University of the Philippines Diliman and University of San Carlos

Identifying the mechanisms on how mosquitoes survive will enable the development of powerful techniques for vector control. Hence, the ongoing *Aedes* Adaptation Genomics Program investigates the genomic underpinnings of *Aedes* species' adaptation to extreme temperature conditions. To date, the program is the first to publish the full genome of a female *Aedes aegypti* - a piece of data which will be key to understanding vector biology.

The program has also produced a list of designed microsatellite primers for single sequence repeat (SSR) of *Aedes aegypti*. This will provide excellent targets and means of assessing genetic variation in samples. As a result, when the markers mutate rapidly, it will provide differentiation of even closely related samples of *Aedes aegypti*.

At this point, no scientific evidence is found to conclude that the *Ae. aegypti* programs its embryos to delay development in response to a change in photoperiod that signals the arrival of summer.

WORK PACKAGE 2

Horizontal Auto-Dissemination of Pyriproxifen Larvicide (AD-PPF for Dengue Mosquito Control Trials in the Philippines

University of the Philippines Diliman, St. Luke's Medical Center and De La Salle University

The program sought to study how land use change in Barangays Bagong Silang, Lalakay, and Bayog in Los Baños, Laguna, have affected the transmission of dengue within the communities. Viral families that were detected in the area include unclassified, *Flaviviridae, Peribunyaviridae Herpesviridae*, P*henuiviridae, Rhabdoviridae,* and *Solemoviridae* in *Ae. aegypti* and *Ae. albopictus*.

These pools of mosquitoes were subjected to RNA extraction to determine the virus being carried by each type. As a result, two pools of mosquitoes were found to be qPCR-positive for Zika virus, although a series of tests are still being conducted to validate this result.

In 2019, the program started its implementation of the third project where a portable nanoparticle-based sensor for the detection of dengue (all 4 serotypes) and Japanese encephalitis virus in mosquitoes will be developed.

WORK PACKAGE 3

PH land use change and arbovirus diversity surveillance and monitoring of viral pathogens in the country

Unversity of the Philippines Diliman, St. Luke's Medical Center, and De La Salle University

The program sought to study how land use change in Barangays Bagong Silang, Lalakay, and Bayog in Los Baños, Laguna, have affected the transmission of dengue within the communities. Viral families that were detected in the area include unclassified, *Flaviviridae, Peribunyaviridae Herpesviridae, Phenuiviridae, Rhabdoviridae,* and *Solemoviridae* in *Ae. aegypti* and *Ae. albopictus*.
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OMIC TECHNOLOGIES FOR HEALTH

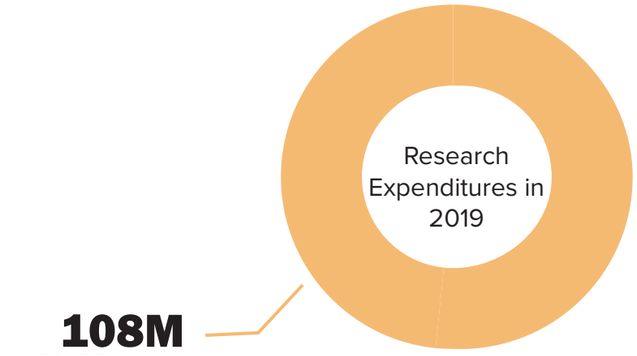
Contrary to popular belief that medical treatment has universal efficacy among all patients, research has shown that there is a disparity in the needs of and responses to medical treatments depending on an individual's genetics and environmental factors.

Despite the advances in personalized and population-based medicine worldwide, majority of the pharmaceutical treatments received by Filipinos are still based on Western medicine. To address this, the Council aims to help researchers in developing personalized medicines, diagnostics, and therapeutics tailored to suit the traits and needs of the Filipinos through the Omic Technologies for Health program.

In 2019, the Council saw the commencement of the Filipino Genomes Research Program and the project which explores the use of Adult Mesenchymal Stem Cells for patients with diabetic foot. Research dissemination activities were also conducted for Omics through Talakayang HeaRT Beat. Inauguration of the Philippine Genome Center Mindanao Satellite Facility was also one of the highlights of 2019, as well as PCHRD's support to this year's Asia Pacific Conference on Human Genetics.

KEY ACCOMPLISHMENTS

1. The Filipino Genomes Research Program
2. Use of stem cells for diabetic complications
3. Treatment, diagnosis, and risk assesment of Type 2 Diabetes
4. Towards individualized diagnostic and therapeutic strategies: Genomic research on cardiovascular diseases



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THE FILIPINO GENOMES RESEARCH PROGRAM

DNA Analysis Laboratory, Natural Sciences Research Institute, University of the Philippines Diliman

REPRESENTING VARIOUS FILIPINO GROUPS IN HUMAN GENOMIC RESEARCH

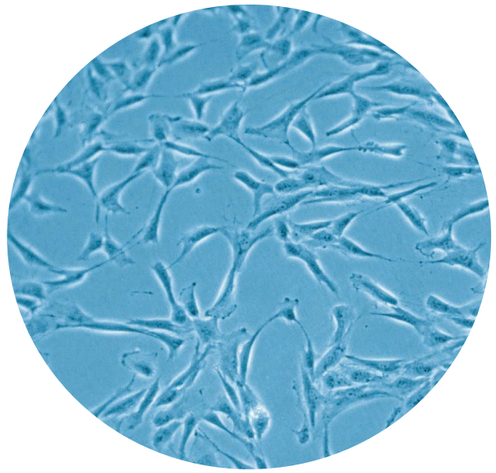
Filipino Genomes Research Program (FGRP) aims to better understand the Filipino population, history, and ancestry through genomics research. The program will involve all Filipino groups to develop better, more personalized medicines and therapies for optimum, individualized treatment tailored for the Filipinos.

The study of the Filipino Genome- which is the entire genetic material of the Filipino- will reveal a wealth of information which can lead to better disease diagnosis, management, treatment, and prevention.

The FGRP will represent and involve all regional center and ethnolinguistic groups in the country, as well as other Filipinos with relevant demographics such as child sexual assault victims in human genomics research to ensure that the focus, output, applications, and benefits of genomics research is relevant, transferable, and applicable to the Filipino population.

Focused on long-term relations between researchers and stakeholders through an iterative and dynamic process, FGRP will be instrumental in the increase of the scientific workforce, expansion of research partnerships, strengthening of capabilities, and the appreciation for human genomics research across the country through research work, training, cooperation, partnerships and appreciation of relevant genetics/genomics concepts, research-ethics, and the research process.

MESENCHYMAL STEM CELLS FOR DIABETIC COMPLICATIONS



Evaluation of the safety and efficacy of intramuscular transplantation of umbilical cord derived mesenchymal stem cells for diabetic foot ulceration

Makati Medical Center

The year 2019 also saw the commencement of one of the first projects that to look at the use of Mesenchymal Stem Cells (MSCs) as therapy for diabetic complications (i.e. diabetic foot ulceration).

The project, which is being implemented by the Makati Medical Center, aims to gather preliminary data on the application and effectiveness of intramuscular transplantation of umbilical cord-derived mesenchymal stem cells as an adjunct treatment for diabetic foot ulceration.

TREATMENT, DIAGNOSIS, AND RISK ASSESMENT OF TYPE 2 DIABETES

Genomic association studies in Filipinos on treatment, diagnosis and risk assessment of Type 2 Diabetes Mellitus (T2DM)and its related medical conditions

Philippine Genome Center

Aiming to discover useful biomarkers that can guide clinicians in providing optimal treatment and risk assessment among T2DM patients, a total of 63,000 participants were already screened in Metro Manila, Bacolod City, and Davao City. Data revealed that there are undiagnosed diabetes (3%) and pre-diabetes incidence rates (6%) which are not yet known in the country.

This project also identified genetic polymorphisms among Filipinos which are not necessarily the same as those found among other ethnic groups, particularly on drug response to commonly-prescribed T2DM medications, T2DM risk, and susceptibility to certain T2DM complications.

TOWARDS INDIVIDUALIZED DIAGNOSTIC AND THERAPEUTIC STRATEGIES: GENOMIC RESEARCH ON CARDIOVASCULAR DISEASES (CVDs)

Utilizing OMIC technologies in health research to identify disease-related genes, proteins, and molecular mechanisms is important in developing better health solutions in the country.

This is effectively seen through the work of the Cardiovascular Genetics Program, which enrolled and examined 2,320 participants to (1) identify genetic markers related to susceptibility to hypertension, high cholesterol, heart attack, and stroke; and (2) identify genetic markers associated with response to commonly used drugs for Hypertension, Dyslipidemia, and Coronary Artery Disease.

Highlights:

- Twelve genetic markers related to drug response have been identified.
- Genetic markers associated with susceptibility to hypertension, high cholesterol, heart attack, and stroke have been identified: 2 SNPs for Hypertension, 4 for dyslipidemia, 2 for heart attack, and 1 for stroke.
- Patents are being filed/planned for filing e.g. biomarkers associated with poor response to beta-blockers, a group of antihypertensive drugs commonly used in the Philippines.
- It is important to note, however, that the markers observed among Filipinos are not necessarily the same as those found among other ethnic groups.

THE FIRST NATIONAL GENOMICS CONFERENCE

Philippine Genome Center (PGC)

Celebrating 10 years since its establishment, the PGC organized its first National Genomics Conference on 10 October 2019 which featured DOST-PCHRD supported projects on CVDs, Diabetes, and Colorectal Cancer. Strategic plans of the PGC in the coming years were presented, including the establishment of the following: Protein Proteomics and Metabolomics Facility, Integrated Laboratory Information Management Systems, and PGC Satellite Facilities in Visayas and Mindanao.

"FILIPINOS' HEALTH FROM AN –OMICS PERSPECTIVE"

An organizational meeting for health research initiatives

Principal investigators (PIs) and health professionals who are working on or interested in genomics, metabolomics, transcriptomics, proteomics, and bioinformatics convened during the organizational meeting for health research initiatives. The meeting served as an opportunity to acquaint target attendees from Luzon, Visayas, and Mindanao on the rationale behind the PGC's research thrusts in health and medicine.

The meeting highlighted the accomplishments and future directions of the Omic Technologies for Health Program of the Council, including the featured works of Balik Scientists involved in genomics research.

LAUNCHING OF THE PHILIPPINE GENOME CENTER MINDANAO SATELLITE FACILITY (PGC-MSF)

University of the Philippines Mindanao

Aiming to support, strengthen, and enable researchers from the regions, capacitate and deepen the talent pool, and facilitate and accelerate collaborations in genomics research, DOST-PCHRD has previously launched the Philippine Genome Center Mindanao Satellite Facility. Currently, the PGC-MSF is temporarily located inside the College of Science and Mathematics (CSM) building at the University of the Philippines Mindanao (UPMin) campus in Mintal, Davao City.

13TH ASIA PACIFIC CONFERENCE ON HUMAN GENETICS

DOST-PCHRD sponsored a session at the 13th Asia Pacific Conference for Human Genetics entitled "OMICS Technologies for Optimized and Personalized Medicine." The session highlighted DOST-PCHRD funded programs and projects in Cardiovascular Genomics, Diabetes Genomics, Systemic Lupus Erythematosus Project, Vitamin D Receptor, and Fragility Fractures Molecular signatures in Leptospirosis presented their initial results.

Other DOST-PCHRD funded projects on X-linked Dystonia Parkinsonism (XDP) and Colorectal Cancer were also presented in the conference.

DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION

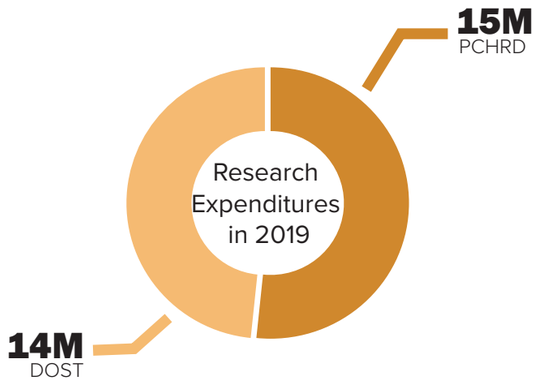
For years, research programs on Disaster Risk Reduction and Climate Change Adaptation (DRR-CCA) for Health have been given special attention through the Council's health research initiatives. This is to complement DOST's HRNDA also developed in support of global initiatives such as the SDGs and Sendai Framework for DRR. Enhanced knowledge, access to information and increased institutional capacities are some of the major outcomes identified under this area.

In 2019, the Council focused on refining the research topics under the NUHRA priority area, DRR-CCA in Health, to align its initiatives to both DOST's and other government agencies' national DRR-CCA programs. These topics eventually led to the development of the DRR-CCA in Health R&D roadmap, aiming for health systems resilience through science-based solutions. Major research topics identified were health information system, health leadership and governance, health technologies, health service delivery, health workforce, and health financing. Research clusters following these priority topics will be formed and organized through the Disaster and Climate Resilience Health Research Network (DCHRN).

The program also continued evaluation and development of proposals generated from the workshops in the regions. To date, 55 proposals were submitted for funding and 12 ongoing projects are already supported by the Council.

KEY ACCOMPLISHMENTS

1. Ensuring a safe drinking water in Marawi Clty
2.mPADS for the Detection of Diarrhea-causing Pathogens in Water
3. Capacity building on health research in disaster



HEAVY METALS ASSESSMENT IN DRINKING AND DEEP WELL WATERS IN MARAWI CITY – POST SIEGE

Mindanao State University (MSU) - Marawi City

Marawi siege caused major humanitarian crises, some of which may pose lasting health effects to the victims. For instance, the dangers on the presence of heavy metals on deep wells and other sources of drinking water may threaten the residents in Marawi.

To address this, the Council supports a study which explores the possible health effects of used bombs and heavy artillery on the safety of the drinking water in the post-conflict areas.

The research reveals information on the concentration of heavy metals (Arsenic, Barium, Cadmium, Copper, Iron, Lead, Nickel and Zinc) in drinking waters and deep-well waters of Marawi City.

The result of the study may assist the Local Government Unit, Marawi City Water District, and DOH in making evidence-based decisions and appropriate actions oh how to supply safe drinking water to the people of the city.

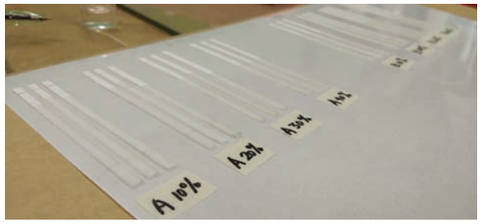
MICROFLUIDIC PAPER-BASED ANALYTICAL DEVICES (MPADS) FOR THE DETECTION OF DIARRHEA-CAUSING PATHOGENS IN WATER

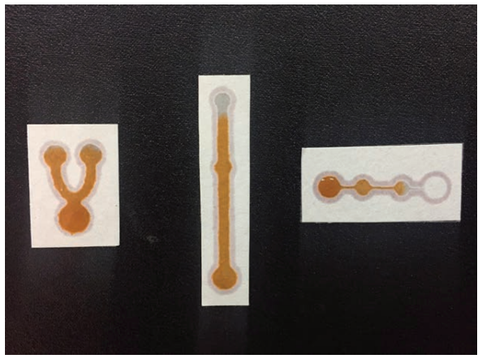
Nueva Vizcaya State University

Access to safe drinking water can easily be jeopardized by a natural hazard. Communicable disease outbreaks can be prevented by ensuring that waters, especially the source of drinking water, are free from potential vectors of infections.

Recognizing the importance of access to safe drinking water, the Council supported the development of microfluidic paper-based analytical devices or µPADs to detect pathogens in water as a disaster-risk preventive tool aiming to mitigate diarrheal outbreaks. The analytical device is a low-cost and easily coated paper.

With reported applications in *E. coli* detection, developing microPADs with the capability to detect target pathogens will mitigate risks of diarrheal outbreaks, common in communities affected by natural disasters.





CAPACITY BUILDING ON HEALTH RESEARCH IN DISASTER

Through the Capacity Building on Health Research in Disaster Phase I (Orientation to Concepts and Principles) and Phase II (Development of a Research Proposal), the Council trained a total of 25 researchers in Region XI wherein seven proposals were generated for possible funding. The program aims to develop the capacity of researchers in generating research proposals and translating and utilizing research findings for disaster risk reduction policies, programs, and services using standard concepts, methods, and frameworks.

REGIONAL RESEARCH FUND

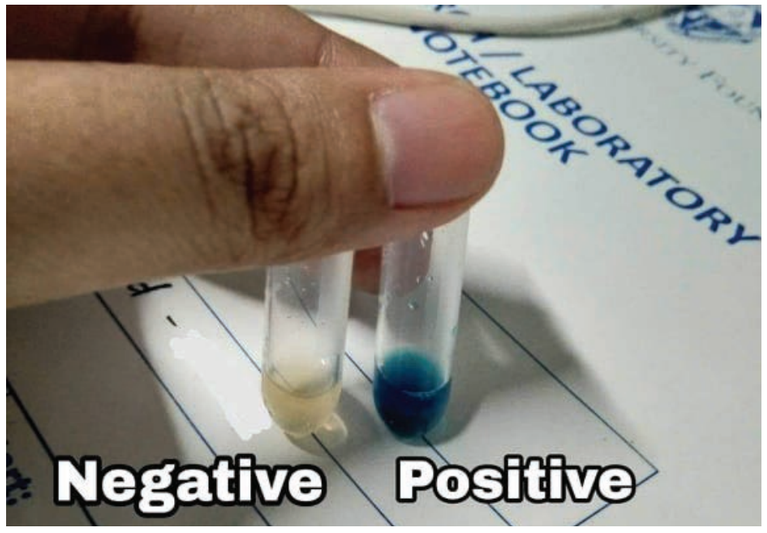
Intended to build up the capabilities of individual researchers in designing, implementing, and managing health research projects in the regions, the Regional Research Fund (RRF) is a strategy to encourage new researchers to be actively involved in health research activities without having to compete with more experienced researchers.

Magneto Immunoassay for the detection of *Entamoeba histolytica* in Stool Samples

Recognizing the importance of early diagnosis as key for early management and intervention of intestinal infectious disease, a group of researchers from Angeles University Foundation developed a new prototype system for the detection of its causative agent, *Entamoeba histolytica*, using immunomagnetic separation strategy.

While the infection is commonly managed with fluid and specific drugs intake, misdiagnosis remains to be the biggest problem when it comes to laboratory results leading to incorrect treatments that sometimes result in severe cases. Currently, several techniques for diagnosis are available but are limited due to the fact that they are expensive, work intensive, less specific, and sensitive.

The Magneto Immunoassay is set to rapidly improve the diagnosis of amoebiasis by enhancing the sensitivity and specificity of isolating and detecting *E. histolytica*. Upon application, this will provide reduced misdiagnosis of amoebiasis and better treatment and clinical management in the Philippines.



Freshwater Copepod Species: Comparative Biological Control Activity Against Dengue-Carrier Mosquitos

The World Health Organization (WHO) reported 115,986 dengue cases including 456 deaths from January to July 2019 alone and among the regions with the highest incidence is in the Caraga region. In an effort to control dengue infection, a team of researchers from Caraga State University looked into the activity of freshwater copepods against dengue-carrier mosquitos.

Copepods are a diverse group of miniscule crustaceans found in great numbers in fresh or salty waters. When they are placed in container habitats, decorative ponds, and pools, they prey on mosquito larvae, thus effectively preventing mosquito development.

The study focused on the predation capacity of three species of copepods found in the Philippines. They found out that the combination of three mesocyclops species namely *M. ogunnus, M. longisetus,* and *M. aspericornis* have the highest larval predation percentage of 92 percent. More importantly, the findings of the study provided accurate data on the effectiveness of Phillipine freshwater copepods as a biological control agents to prevent, if not minimize infections of dengue.

As a policy recommendation, the researchers suggested that local govenrment units may use the three copepod species as biological control for dengue disease-carrier mosquitos in waterlogged areas and ponds. As well, the team proposed a stringent implementation of solid waste management among local government units to minimize increase in population of mosquitos.

Photo grabbed from http://www.ecotippingpoints.org/our-stories/indepth/vietnam-dengue-mosquito-copepod-biological-control.html

CAPACITY BUILDING

DOST ACCELERATED S&T HUMAN RESOURCE DEVELOPMENT PROGRAM

The DOST-ASTHRDP aims to improve the country's global competitiveness and accelerate the production of human resources needed for S&T activities, particularly in the area of R&D. The program offers scholarships for master's and doctorate degrees.

In 2019, four scholars obtained their MS and PhD degrees while six of the MD-PhD Molecular Medicine scholars from the first to third batches successfully earned their dual degrees.

DISTRIBUTION OF SCHOLARS

PCHRD-funded and monitored

	NEW	ONGOING	COMPLETED
MD-PhD	10	74	6
MS	4	95	2
PhD	10	21	2

SCHOLARSHIP PROGRAMS

MD-PhD in Molecular Medicine Program

The MD-PhD in Molecular Medicine Scholarship Program is the first and only dual MD-PhD course offered in the Philippines that trains aspiring physician-scientists. It is a joint initiative of the Department of Science and Technology (DOST), through the PCHRD, and University of the Philippines Manila for human resource development in biomedical research. This program seeks to develop MDs with strong background in basic and applied research. The PhD aspect of the combined program aims to provide students with an advanced graduate education while completing a medical degree.

In 2019, six (6) of the MD-PhD Molecular Medicine scholars successfully earned their dual degrees while ten (10) new scholars were supported.

MS in Molecular Medicine Program

MS Molecular Medicine provides training on basic science and applied biomedical research. The curriculum includes latest biotechnologies such as cell-based therapies, gene therapies, targeted therapies, biomarker technology, molecular diagnostics, pharmacogenomics, and personalized medicine, which is supplemented by background courses on fundamental sciences.

The program is designed to upgrade the skills of the students in molecular medicine in clinical setting, through a unique opportunity for training in the fully-equipped research laboratories of the St. Luke's Research and Biotechnology Division. It will also strengthen the capabilities of the current crop of medical practitioners and allied health professionals towards a new way of doing medicine.

In 2019, four (4) new scholars were supported under the MS Molecular Medicine scholarship program.

PhD in Biomolecular Medicine Program

The PhD in Biomolecular Medicine program is a three-year program which integrates basic research and clinics focusing on the study of molecular approaches to cancer biology, genetics, jaundice, and metabolic diseases. The PCHRD in collaboration with University of Trieste (UNITS) and Fondazione Italiana Fegato (FIF) developed the program to build a pool of high-quality human resources in molecular hepatology who will contribute to the country's global competitiveness and economic development.

In 2019, two (2) scholars were selected to study at UNITS Italy and work at FIF for their PhD program. Noel C. Salvoza, MSc, MD and Loraine Kay D. Cabral, MSc were the first PhD scholars sent to Italy for liver research.

BALIK SCIENTIST PROGRAM

To address the scarcity of science and technology experts in agriculture, industry, and health, DOST initiated the Balik Scientist Program (BSP) in 1975. Through this program, the DOST provides incentives to researchers based abroad to return to the country and share their expertise to local researchers.

The Council facilitates the BSP for health. In 2019, the program has processed and approved 19 Balik Scientist applications categorized into short-term (14), medium-term (4), and long-term (1).

The 19 Balik Scientists were engaged in six DOST-PCHRD research priority areas namely: drug discovery and development, diagnostics, biomedical engineering and health technologies, ICT for health, Omics technologies, and mental health. Thirteen out of the 19 Balik Scientists completed engagement within the year. Other accomplishments of the Program include, the submission of seven manuscripts of Balik Scientist for publication in international journals, application of two patents in collaboration with host institution, conduct of 104 capacity building activities with the local reserachers, and engagement of two new host institutions (Cebu Normal University, Department of Health - Health Human Resource Development Bureau (DOH-HHRDB) into the Program.

BEST MENTOR AWARD IN HEALTH RESEARCH

The Council honors the best health research mentors in the country for their invaluable contribution to advancements in health research. The Best Mentor award is conferred biennially, and the winners are announced during the PNHRS Week. The 2019 winners of the award are as follows:

Winners:

LUZON - Dr. Allan Corpuz, Ilocos Training and Regional Medical Center
VISAYAS - Dr. Doralyn Dalisay, University of San Agustin
NCR - Dr. Nina Gloriani, University of the Philippines Manila

The national winner for the Best Mentor Award 2019 is Dr. Nina G. Gloriani, the former Dean of the College of Public Health in UP and a general practitioner at St. Luke's Medical Center. To her mentees, Dr. Gloriani is a passionate researcher who countinuously inspires her students in pursuing their goals of becoming future academicians and researchers in healthcare.

Awarding of winners during the 13th PNHRS Week

DOST-PCHRD UNDERGRADUATE THESIS GRANT IN NATURAL PRODUCTS

The Undergraduate Thesis Grant in Natural Products aims to increase the number of researchers and experts specializing in natural products. It supports the Tuklas Lunas ™ Program of the Council.

Selected undergraduate students under the program are given PHP 50,000 research grant to conduct their studies on natural products. In 2019, six students were selected to present and defend their research during the PNHRS Week. The following are the winners for the Best Undergraduate Thesis Award:

	NAME	INSTITUTION	THESIS TITLE
1st Place	Ms. Hannah Eunice Laurel, et. al	Saint Louis University	Phytochemical and Pharmacological Screening of Amuet, an Indigenous Preparation of Buho
2nd Place	Ms. Mariel Joy C. Tarlit	Virgen Milagrosa University	Neuroprotective Activity of Lubigan (*Acorus calamus Fam; Acoacea*) in the Management of Alzheimer's Disease
3rd Place	Ms. Mary Anne Esplana	Our Lady of Fatima University	Evaluation of Larvicidal Activity of the Formulated Spray with Semi-Purified Saponin from the Extract *Artemisia vulgaris* (Damong Maria)

Awarding of winners during the 13th PNHRS Week

ETHICS

The Council, in partnership with the Philippine Health Research Ethics Board (PHREB) and its different committees including the National Ethics Committee (NEC), ensures that the country's health research initiatives follow national and international standards in health research ethics.

PHREB is the national policy-making body which promotes and supports the protection of human participants in various research. The NEC, on the other hand, is PHREB's review committee that evaluates the ethical aspects of health research projects referred by PCHRD, DOH, PHREB, and other government agencies. The NEC partners with PHREB in resolving ethical issues to improve ethics review and strengthen health research ethics review in the country.

The PCHRD, as the secretariat of PHREB, supports and assists the board and its committees in conducting trainings, workshops, and consultations with partner institutions to develop trainers and accreditors in ethics in research.

PCHRD, PHREB, and its five committees, are all committed to the development and sustainability of the nation's initiatives in human health research ethics.

NATIONAL ETHICS COMMITTEE

The (NEC) was reestablished on 9 December 2013 because of the pressing need for a national body to review research proposals which are of national importance.

In 2019, five meetings were conducted and 23 proposals were accepted for review. Seventeen were approved while five proposals are still being reviewed.

23 Proposals Accepted for review

17 Approved

5 On going review

1 Exempted

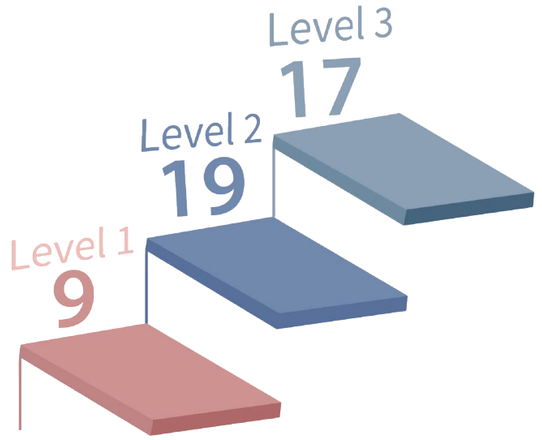
PHREB

The Philippine Health Research Ethics Board (PHREB) is the national policy making body on health and health-related research ethics created under DOST Special Order No. 91, and adopted in the Philippine National Health Research System (PNHRS) Law (RA 10532), which is mandated to “ensure adherence to the universal principles for the protection of human participants in research.”

In 2019, there are 45 newly accredited RECs out of the total 99 accredited RECs across 17 regions. Nine RECs are at Level 1, 19 are at Level 2, and 17 are at Level 3.

PHREB also conducted 51 training programs across 15 regions: Thirty-one Basic Research Ethics Training, eight SOP Workshops, nine Good Research Practice Trainings, one REC Staff training, and five Special Training Programs.

Distribution of PHREB accredited RECs



RESEARCH DISSEMINATION AND UTILIZATION

Support to Research Dissemination

The Council supports projects and activities on research dissemination, including, but not limited to support to publication, paper presentation, and scientific events. This program aims to provide financial assistance to all Filipino health researchers who intends to get their results of research communicated to the public and target stakeholders.

In 2019, a total of 43 support to research dissemination projects (30 scientific events, 12 publications, and 1 presentation) were funded.

TALAKAYANG HeaRT BEAT
HEALTH RESEARCH AND TECHNOLOGY

In 2019, the Council launched its first Talakayang HeaRT (Health Research and Technology) Beat, a media and press conference to disseminate and promote the Council's initiatives, programs, advocacy, and partnerships to the media and key stakeholders. Six Talakayang HeaRT Beat were conducted throughout the year. (*See Annex for details*)

Through this initiative, the Council was able to increase its mileage in various media platforms especially in online news, radio broadcast, and television. Research personalities and project proponents were able to interact with different members of the media to advance the cause of health research in the country.

HEALTHCARE AND SOCIAL MEDIA SUMMIT

As the role of the internet and social media continue to prevail in the social setting, the Philippine Healthcare and Social Media Summit was co-organized by the Council together with the HealthXPh and Alliance for Improving Health Outcomes (AIHO) to discuss strategies, opportunities and setbacks in utilizing the platform as a tool in disseminating information for healthcare issues and solutions. In its fifth installment held at the Waterfront Hotel in Cebu City on 13 July 2019, the convention focused on the theme: "Innovative Leadership in Health in Social Media".

The summit featured the following parallel sessions to encourage researchers to maximize the potential of social media in utilizing research information:

- The Patient as Leader in Shaping Healthcare through Social Media
- Institutional Leadership and Advancement through Social Media
- The Social Media Leader as a Storyteller

"Leaders should master the medium of the era, and the medium of this era is social media."

-Mr. Jojo Fresnedi
Founder, Except One

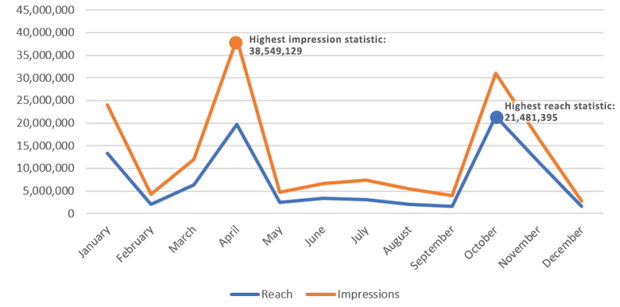
"Today's theme is more than apt for every researcher, and networker. We have to know the innovations in our environment for transformative leadership."

-Dr. Jaime C. Montoya, delivered by Ms. Merlita M. Opena

SOCIAL MEDIA

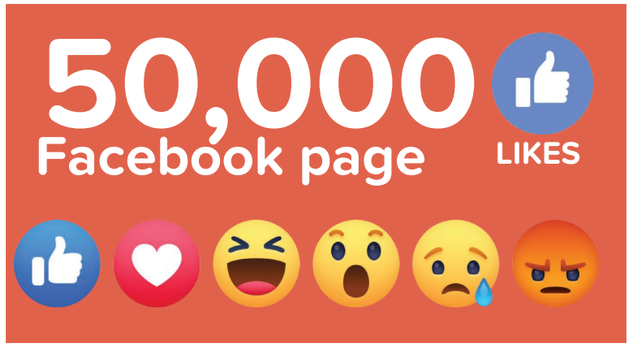
In 2015, the Council utilized Facebook to expand its research dissemination activities in the online community. Two years later, the Council's Twitter page was optimized to increase the reach of research information published on the Council's existing online pages.

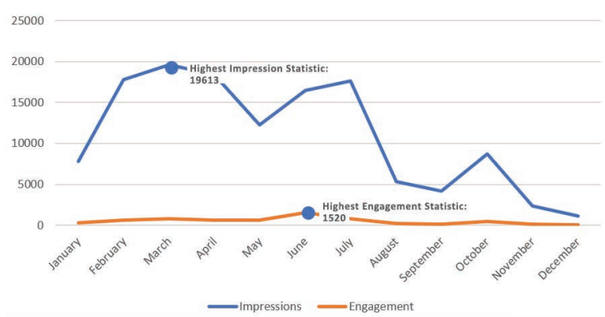
Social Media Statistics



Facebook reach and engagement in 2019

Viral Facebook posts





Twitter impression and engagement in 2019

TECHNOLOGIES TRANSFERRED

The DOST-PCHRD recognizes that R&D does not end with research alone. The goal of research is to reach its end users and benefit the daily lives of our communities. Following the Philippine Technology Transfer Act of 2009 (RA 10055), the Council ensures technology transfer and commercialization by guiding researchers in partnering with potential investors and setting up business development offices. The Council continues to monitor the transfer of the following technologies:

Commercialization

Sambong tablet
(diuretic and anti-urolithiasis)
UP Manila

Lagundi syrup
(cough relief and anti-asthma)
UP Manila

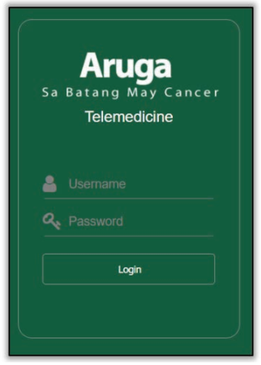
Lagundi tablet
(cough relief and anti-asthma)
UP Manila

eHATID LGU
Institute of Philippine Culture
Ateneo de Manila University

CHITS
Spin-off company was created called Pivotal Peak Digital Solutions, Inc.

Public Good

Battle in the Blood
BitB app
UP Manila



Aruga sa Batang may
Cancer website
UP Open University

Extension

Simulation-based Learning Laboratory on Disaster Response
UP Manila

RESEARCH TO POLICY

DOST-PCHRD acknowledges the role and importance of research translation to ensure that research contributes to evidence-informed health policies and actions. Policy instruments such as policy briefs and position papers were prepared and served as inputs to program development and proposed legislations in Congress.

3-Minute Pitch to Policymakers

Research has significant implications for the community, particularly in health. A successfully completed health research must be communicated to policymakers and key stakeholders to empower decision making.

In 2019, PCHRD launched a policy pitch competition dubbed as "3-Minute Pitch to Policymakers" to cultivate researchers' presentation and research communication skills. In three minutes, the participants should be able to present their completed research and offered call-to-action in front of a non-specialist audience based on set criteria.

The first competition was held during DOST-PCHRD's 37th anniversary celebration at the PICC with Mr. Ray-an Talatala from the Northern Mindanao Consortium for Health Research and Development (NorMinCoHRD) winning the first prize for his pitch, "C.H.E.C.K. Before You Burn." The second competition took place during the 13th PNHRS Week celebration in Cagayan de Oro with Dr. Jed V. Madlambayan from the Central Luzon Health Research and Development Consortium (CLHRDC) winning the first prize for his pitch, "Youth: Know AIDS, Stop AIDS."

	NAME	INSTITUTION
37th PCHRD Anniversay Winners		
1st Place	Mr. Ray-an Talatala	Northern Mindanao Consortium for Health Research and Development
2nd Place; People's choice awardee	Mr. Ryan Labana	Metro Manila Health Research and Development Consortium (MMHRDC)
3rd Place	Dr. Supachai Basit	Health Research and Development Consortium Region IV-A (HRDC-IVA)
13th PNHRS Week Winners		
1st Place	Dr. Jed V. Madlambayan	Central Luzon Health Research and Development Consortium (CLHRDC)
2nd Place	Dr. Norbert Tabo	Health Research and Development Consortium - Region IV-A
3rd Place	Dr. Ginbert Cuaton	Eastern Visayas Health Research and Development Consortium
People's choice award	Dr. Benkassar Abdurajak	Zamboanga Consortium for Health Research and Development

Policy Development

PCHRD participated in the drafting of the following policies:

1. Revision of IRR of the Technology Transfer Act of 2009
2. Revision of DOST IP Policy and related policies (Policy on Contract Research, IP Management Protocol of DOST GFAs, Technology Transfer Protocol of DOST RDIs, Guidelines on the Issuance of FOR and Written Recommendation)
3. Drafting of the IRR of Innovative Start-up Act or Republic Act 1137
4. eHealth Bills ("An Act Establishing the Philippine eHealth System and Services in the Delivery of Health Services with the use of Information and Communications Technology in the Philippines) - House Bill Numbers 3310, 4630, 5810, 7122, 7153, and 7426)
5. Republic Act 10817 and the Philippine National Halal Certification Scheme
6. National Policy on Access and Benefit-Sharing from the Utilization of Philippine Genetic Resources
7. Redistributing and Recycling Food Waste
8. National Health Passport System
9. Inclusive Education to Children with Special Needs
10. Waste to Energy Act

NATIONAL SCIENCE AND TECHNOLOGY WEEK

Leading the "Aging Society, Health, and Medical Care" cluster exhibit, the Council featured various health innovations at the National Science and Technology Week (NSTW) on 17-21 July 2019 at the World Trade Center, Pasay City.

Newly supported health technologies were highlighted in the Council's exhibit, including the Axis Knee Revision, a technology for the replacement of damaged knee, and BOAT, which is an automated gamified balance exercise tool for faster, more improved, and more motivated balance rehabilitation process.

The Council also featured GAIT, which is a standard and objective assessment scheme for evaluating the gradual improvements of Filipino hemiplegic post- stroke patients.

The Health Cluster also housed technologies and products of the Food and Nutrition Research Institute (FNRI), Philippine Nuclear Research Institute (PNRI), Industrial Technology Development Institute (ITDI), and the National Research Council of the Philippines (NRCP).

Participation to Regional Science and Technology Week (RSTW)

To showcase the S&T technologies, programs, and services in the regions, a series of RSTW celebrations were held throughout the country. This activity aims to bring the Department's S&T innovations to the regions to promote DOST's research outputs and aid in socio-economic development of the regions. The Council participated in 11 RSTW celebrations as follows:

Region I
Laoag City, Ilocos Norte
17-20 September 2019

CARAGA Region
Bayugan City, Agusan del Sur
3-5 September 2019

Region IX
Zamboanga City, Zamboanga
9-11 September 2019

Region V
Naga City, Camarines Sur
8-10 October 2019

NCR
Pasig City, Metro Manila
1-3 October 2019

Region VI
Iloilo Convention Center, Iloilo City
21-25 October 2019

Region XI
Lanang, Davao City
28-30 October 2019

Region X
Valencia City, Bukidnon
11-13 November 2019

CAR
Bontoc, Mountain Province
19-22 November 2019

Region 4-B
Puerto Princesa, Palawan
27-29 November 2019

Region XII
General Santos CIty
3-5 December 2019

15TH NATIONAL BIOTECHNOLOGY WEEK

25-29 November 2019

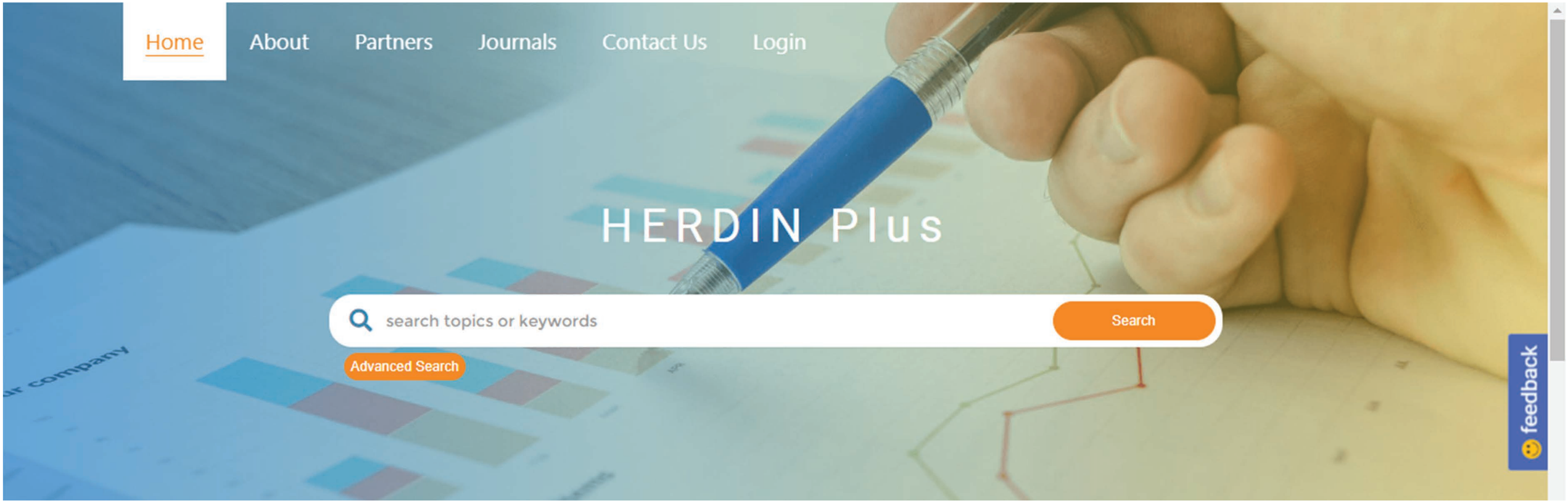
Biotek: Makabagong Solusyon sa Kalusugan

With the theme "*Bioteknolohiya: Makabagong Solusyon sa Kalusugan*," the Council participated in the 15th National Biotechnology Week (NBW) celebration on 25-29 November 2019 at the National Kidney Transplant Institute (NKTI), Quezon City.

The celebration highlighted the responsible use of biotechnology for equitable delivery of health care services, increased production in agriculture, and sustainable environmental management in improving the lives of the Filipino people.

Among the technologies featured in PCHRD's exhibit is the Biotek M Dengue Aqua Kit, a diagnostic kit that can detect dengue virus infection during the first three days of illness developed by Dr. Raul V. Destura of Manila HealthTek Inc. The Council also highlighted the project, "Development of Rapid Diagnostic for Detecting Lamivudine Resistance" implemented by Dr. Edsel Salvaña of the UP NIH which aims to develop an affordable and accurate near point-of-care diagnostic kit for rapid detection of HIV resistance to lamivudine and other antiretrovirals.

The event was organized by the DOH, in partnership with DOST and six other agencies, namely: the Council together with the Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), Department of Education (DepEd), Department of Trade and Industry (DTI), Department of Interior and Local Government (DILG), and Commission on Higher Education (CHED).



HERDIN Plus is a new branding of the Philippine Health Research Registry. It is an integrated one-stop platform for health research information in the Philippines. HERDIN Plus enables users to do the following: access completed Filipino health researches, request full-text of researches, submit and manage proposals and register clinical and nonclinical trial studies.

HERDIN started in 1987 as a repository of health researches in the Philippines, mainly for published articles in Philippine journals, and has evolved from a stand-alone system to a web-based one. In 2012, the Philippine Health Research Registry was launched with DOH-FDA for registering clinical trials as well as newly-approved and ongoing health researches. Then in 2015, the PNHRS Monitoring and Evaluation module was developed for online data collection and report generation. In 2017, the Project Management System was developed as a tool for online submission, review and approval of proposals and monitoring of approved projects.

In 2019, we integrated the four systems into one, now called HERDIN Plus. Talks with CHED started for the adoption of the system of HERDIN Plus in HEIs.

In parallel with these developments, the Council continued its orientation and training sessions, among others, in the following institutions:

- Olivarez College
- De La Salle Health Sciences Institute
- Mariano Marcos University
- Northern Christian College
- San Beda University
- Mariano Marcos Hospital
- Philippine College of Chest Physicians

Ninety partner institutions contributed to the HERDIN databases, adding 1,294 new records. In total, there are 64,347 searchable records in HERDIN Plus.

COLLABORATIONS

The Council establishes and maintains various partnerships with national and international health institutions. Among the national partners of PCHRD in health research are the PhilHealth, DoH, and the Philippine Association of Medical Journal Editors (PAMJE). Internation partners include United Kingdom government (Newton Agham), ASEAN Netwrok for Drugs, Diagnostics, Vaccines, and Traditional Medicines Innovation (ASEAN-NDI, e-ASIA Joint Research Program (e-ASIA JRP), and Asia PAcific Association of Medical Journal Editors (APAME).

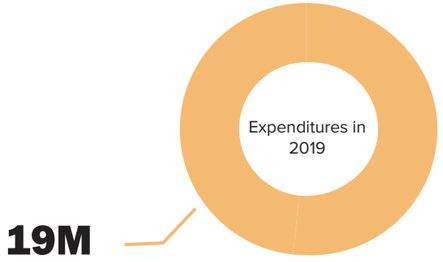
PhilHealth
Your Partner in Health

PhilHealth STUDIES

In 2015, the Philippine Health Insurance Corporation Inc. (PhilHealth) partnered with the Council to implement the PhilHealth STUDIES (Supporting the Thrust for Universal Health Care through Data, Information, and Knowledge Exchange Systems) to advance knowledge in the fields of social health insurance and health care financing. Under the program, 12 research projects were completed, four capacity building activities, and three research fora were conducted. For 2019, two out of the eight projects were completed (2018 PhilHealth Client Awareness and Satisfaction Survey by Novo Trends PH; and Share Ratio Study: A National Survey on PhilHealth's Share on Government Hospitals' Revenues from 2011 to 2017). In capacity building, a six-month training course was facilitated by EpiMetrics from April to September 2019 for selected staff from the regional offices of the Corporation. (Local Evidence to Advance Decisions, LEAD).

The LEAD program produced the following five studies on membership, availment of benefits, and program implementation of the National Health Insurance Program:

- Factors that Influence the Active Membership of the Informal Sector in the National Health Insurance Program - PRO II, PRO XII, PRO CARAGA
- Factors affecting PRO8 and ARMM Public Hospitals' compliance to the provisions of Performance Commitment ensuring Quality of Care - PRO 8, PRO ARMM
- Factors Affecting the Low Availment Turnout of the Primary Care Benefit among the Indigent Members - PRO NCR, PRO CAR, PRO III, PRO VI
- The factors associated with the effectiveness of Ladderized Training Programs in PhilHealth Regional Offices I, IV-B, V and VII - PRO I, PRO IV-B, PRO V, PRO VII
- Factors Affecting the Accuracy of the Indigent Membership Database - PRO IV-A, PRO IX, PRO X, PRO XI



3rd PhilHealth STUDIES Forum

The 3rd PhilHealth STUDIES Forum was held on 27-28 November 2019 at the Citadines Millennium Ortigas Hotel, Pasig City, with the theme "Geared Up for UHC: Generating Research Evidence for Planning and Policy". The two-day forum showcased the results of the PhilHealth-funded projects and highlighted other studies with significant policy implication for Universal Health Care. Dr. Rabindra R. Abeyasinghe, Officer in Charge, Office of the Country Representative, World Health Organization was the keynote speaker.

The event was attended by PhilHealth policymakers, implementers, and other stakeholders. The forum showcased studies on: integrated care systems, informal sector participation in the NHIP, and governance system for financing.

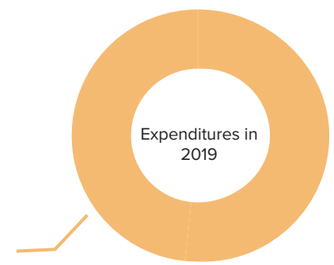
AHEAD-HPSR

Advancing Health Decisions with Health Policy and Systems Research (AHEAD-HPSR)

A partnership between the DOH and PCHRD, the AHEAD-HPSR supports research on Health Policy and Systems. This program is envisioned to contribute to the FOURmula One Plus (F1+) of the DOH which focuses on health reforms for a more transparent and inclusive healthcare system.

There are five institutional projects which focus on refining the Philippine health system and service delivery. The project, *"Assessment of Performance Measures and Indicators of Patient Safety in Select Government and Private Hospitals in the Philippines,"* has completed its quantitative data analysis; ongoing is its qualitative data collection. A project implementation review of the research, *"Analyzing Mental Health in the Philippines: Perception, Access, and Delivery,"* has been completed. Other ongoing institutional projects include Assessing and Designing Evidence Based, Culturally Appropriate and Cost-effective Aftercare Programs and Services for Drug Users in the Philippines; Focused InTerventions for FRAIL Older Adults Research and Development Program; and An Evaluation of the Effectiveness of OPtimising Health Literacy (OPHELIA) Process in Improving Health Literacy Across Chosen Life Stages.

This collaboration also supported the AHEAD-HPSR Fellowship Program. For research translation and policy support, the collaboration has influenced the country's AIDS Medium Term Plan 2017-2022, Health Sector Plan 2017-2020, and Local Strategic Plans, to name a few. 18 journal articles came out of this program.



INTERNATIONAL

Institut National de la Santé et de la Recherche Médicale (Inserm)-FRANCE (French Institute of Health and Medical Research)

The Health R&D Cooperation with the Inserm-FRANCE is the result of the successful visit of the Philippine delegation to several R&D institutions and agencies in France last 2017. As agreed by both parties, the collaboration focuses on enriching research on infectious diseases, genomics, and environmental health.

In 2019, the DOST-Inserm Scientific Collaboration Seminar provided a venue for discussion between Filipino and French researchers to formulate collaborative studies on infectious diseases, genomics, and environmental health. Benchmarking activities were also done in several French research institutes such as the L'Institut de la vision and Imagine (Institut des maladies génétiques) to discuss possible research collaborations and training opportunities for Filipino researchers in their facilities.

Fondazione Italiana Fegato

In February 2019, the DOST-PCHRD signed a memorandum of understanding (MOU) with the Fondazione Italiana Fegato fostering the partnership between two parties. The MOU outlines collaboration on the following:

- establishment of Philippine Liver Network;
- enhancement of the existing clinical research fellowship program;
- PhD in Molecular Biomedicine in University of Trieste, with research training from FIF;
- Sandwich Research Training in FIF for the current MD-PhD in Molecular Medicine scholars;
- post-doctoral trainings; and
- short-term trainings.

As groundwork to the establishment of the Philippine Liver Network, the DOST-PCHRD tapped Dr. Ernesto Domingo, founder of the Liver Study Group in UP Manila. The network will serve as a hub responsible for facilitating the conduct of collaborative research work on liver diseases such as hepatitis B, hepatitis C, hepatocellular carcinoma, delta virus, and other related diseases.

University of Hawaii for the Benefits of its John A. Burns School of Medicine (JABSOM)

A research fellowship program on HIV molecular immunology was borne from the collaboration between DOST-PCHRD, University of Hawaii for the Benefits of its John A. Burns School of Medicine, and Philippine Society for Microbiology and Infectious Diseases (PSMID). In 2019, Dr. Christian Francisco of UP Philippine General Hospital was selected as a research fellow of the program. He was given six (6) months to work on his research on HIV Molecular Immunology.

University of Trieste

In November 2019, two DOST-PCHRD scholars have started their PhD Program in Molecular Biomedicine at the University of Trieste (UNITs) as a result of the collaboration among UNITs, FIF, and DOST-PCHRD. This Fellowship program integrates basic research and clinics focusing on the study of molecular approaches to cancer biology, genetics, jaundice and metabolic diseases. Scholars, Dr. Noel C. Salvoza and Ms. Loraine Kay D. Cabral, are expected to contribute to the discovery of biomarkers and diagnostic tools for liver diseases and related metabolic syndromes in the Philippines. Their work will also support the soon-to-be-established Philippine Liver Network.

United Kingdom Research and Innovation-Medical Research Council

This five-year-old partnership with the UKRI or the "Newton Agham" partnership has brought about over 10 collaborative projects as well as technology transfer efforts, and capacity-building activities between Filipino and UK scientists.

In 2019, the collaboration fostered shared learning between PCHRD and the MRC-UKRI. Under the UK Research and Innovation Newton Fund Staff Exchange Programme, DOST-PCHRD personnel visited the UKRI to understand the research funding and management processes of the agency and vice versa. The UKRI provided an overview of the different grants of their agency, their grant processes, the types of support they can provide, and their impact evaluation processes. This also provided an opportunity for DOST-PCHRD to introduce the Council to different funders as well.

The partnership also supported an institutional visit to the MRC-University of Glasgow Centre for Virus Research, the UK's largest grouping of human and veterinary virologists, for a better grasp on the requirements and considerations needed in establishing, operating, and managing a clinical biobank facility. In addition, possible future collaborations between the CVR and DOST-PCHRD were discussed, particularly on Infectious Diseases and bioinformatics.

In terms of research projects, the Newton Agham partnership focused on the Cycle 2 projects focusing on communicable diseases and diabetes.

FUTURE COLLABORATIONS

Our partnerships are expected to continue growing in the following years. The Council is discussing with Atty. Geraldine Acuña-Sunshine, member of Harvard University's Board of Overseers, augurs well in possible partnership with Harvard University, Massachusetts General Hospital, and other affiliated institutions in the areas of PCHRD research priorities, clinical research and clinical trials, research management, health promotion, post- doctoral program, among others.

Also in discussion are possible collaborations with the Ministry of Science and Technology of the People's Republic of China as part of the 15th Protocol for Philippines-China Joint Commission Meeting on Science and Technology (JCMST) held in Beijing last 27-30 September 2019 in the areas of traditional medicine.

RESOURCE MOBILIZATION

PCHRD Status of Funds for FY 2019

General Appropriation from Government (GAA-RA No 11260)

PARTICULARS	ALLOTMENT	EXPENDITURES	UTILIZATION RATE
General Administration Support	21,692,000	21,580,825.70	**99.49%**
Operations	31,326,000	31,275,800.07	**99.84%**
Locally-funded Projects	5,000,000	4,973,342.99	**99.47%**
Grants-In-Aid			
Research and Development	411,600,000	411,600,000	**100.00%**
Capacity Building	99,500,000	99,500,000	**100.00%**
S & T Services	73,000,000	73,000,000	**100.00%**
Automatic Appropriations (Retirement & Life Insurance Premium	3,099,104	3,096,224.64	**99.91%**
Pension & Gratuity Fund	1,129,350	1,129,348.25	**100.00%**
Miscellaneous Personnel Benefits	1,451,538	1,438,937.69	**99.13%**
TOTAL FUND FROM NATIONAL GOVERNMENT	**647,797,992**	**647,594,479.34**	**99.97%**

Trust Fund

PARTICULARS	ALLOTMENT	EXPENDITURES	UTILIZATION RATE
DOH - 2015 Health System Research Management Program	11,166,308.45	2,923,359.66	**26.18%**
DOH- Advancing Health through Evidence Assisted Decisions with Health Policy Research Management Program	149,163,960.34	134,158,150.92	**89.94%**
DOH - Pharmaceutical Division Project	4,487,608.63	2,514,965.246	**56.04%**
DOST-2019 National Science and Technology Week	950,000.00	688,600.00	**72.48%**
DOST - Balik Scientist Program	15,090,000.75	14,434,141.36	**95.65%**
DOST- Creation of Tuklas Lunas Program Management Team	4,569,393.25	3,638,753.54	**79.63%**
DOST- Dengue Vector Control Research Program	86,275,239.90	63,132,552.594	**73.18%**
DOST- Indirect Costs from various projects	29,979,395.93	12,440,925.40	**41.50%**
Food and Drug Authority - Development of FDA Clinical Trial Regulatory Management Plan Phase 1	2,000,000.00	1,710,438.22	**85.52%**
Philippine Nuclear Research Institute - Indirect Cost	8,000.00	8,000.00	**100.00%**
Philippine Health Insurance Corporation- Strengthening the Thrust for UHC through Data, Information, and Knowledge Exchange Systems	28,457,507.98	19,460,738.99	**68.39%**
Philippine Institute of Tradition and Alternative Health Care - Traditional and Alternative Health Care (TAHC) Research Mgt & Capacity Building Project	3,306,235.56	171,406.40	**5.18%**
Science Education Institute - Accelerated and Technology Human Resource Development Program Scholarship Grant	19,976,530,78	19,976,530.78	**100%**
Total Trust Fund from other Sources	**365,080,306.17**	**279,644,469.107**	**76.60%**

INSIDE PCHRD

Human Resource

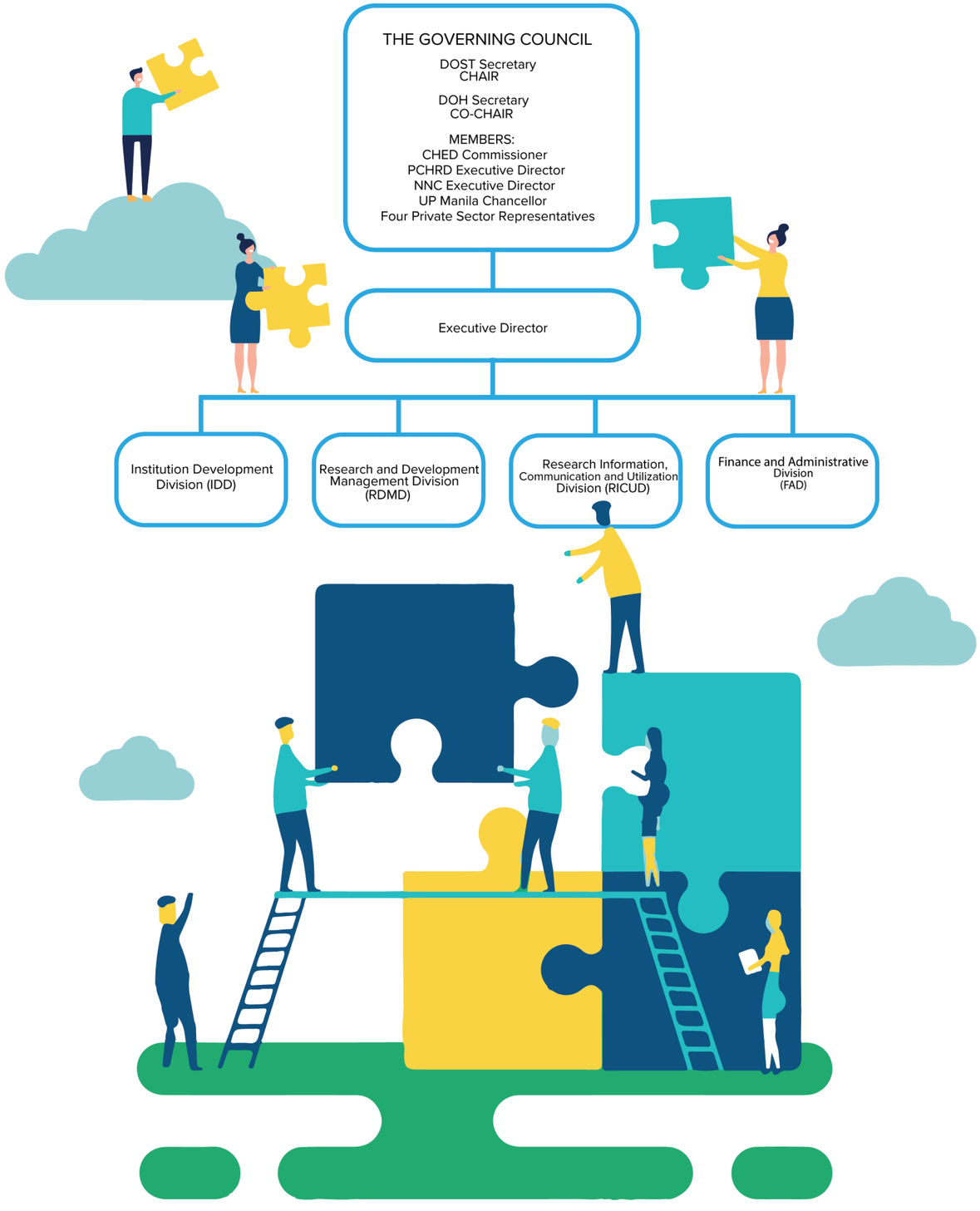
As of 31 December 2019, the Council has employed 105 technical staff and 35 administrative and support staff, 2 with doctorate degrees, 24 with master's degrees, 25 with post MS/MA degrees, 81 with bachelor degrees, 5 with post high school diplomas, and 3 with elementary diploma.

CERTIFICATION INTERNATIONAL
ISO 9001:2015

ISO 9001: 2015

In 2019, PCHRD's Quality Management System has been assessed as conforming to ISO 9001: 2015 and received certification from Certification International Philippines, Inc.

ORGANIZATIONAL STRUCTURE



ANNEXES

Funded projects

COMPLETED

Tuklas Lunas

Phytochemical and In-Vitro Bioactivity Screening of Endemic Medicinal Plant in Albay, Bicol

Extraction, Purification, Cytotoxicity, Antioxidant Potential and Antimicrobial Assessments of the Secondary Metabolites from Marine Sponges Collected off the Coasts of Mindanao

Exploring the Potentials of Philippine Ferns and Lycopods as Therapeutics for Chronic Inflammation and Cancer

Phytochemical and In-Vitro Bioactivity Screening of Endemic Medicinal Plant in Albay, Bicol

Extraction, Purification, Cytotoxicity, Antioxidant Potential and Antimicrobial Assessments of the Secondary Metabolites from Marine Sponges Collected off the Coasts of Mindanao

Exploring the Potentials of Philippine Ferns and Lycopods as Therapeutics for Chronic Inflammation and Cancer

Biomedical Engineering and Hospital Technologies International Workshop in Omics in Infectious Diseases DRR-CCA

Assessment of the Quality of Water, Sanitation and Hygiene Practices of Households in the Province of Quirino: A Basis for Interventions for the Prevention of Flood-associated Diseases and Hazards

ICT for Health

Feasibility Analysis of Syndromic Surveillance Using a Spatio-Temporal Epidemiological Modeler (FASSSTER) for early detection of diseases

A ruga sa Batang may Cancer (ABC) Initiative Program: A Web-Based Pediatric Palliative Care Service Provider in the Philippines

Project 1: Generation of Pediatric Oncology Registry through Baseline Survey and Situational Analysis regarding the availability and extent of pediatric palliative care services in the Philippines and Development of a Web-based Palliative Care Service Platform

Project 2: Development and Delivery of Online Training Materials for Healthcare Professionals on Palliative Care for Children with Cancer through the Web-based Palliative Care Service Platform

eHealth Analytics for Data-driven Decision-making (eHATID2)

eHealth Training on Unified Resources Online (eTURO)

Medical Teleparasitology for Laboratory Diagnosis of Parasitic Infections in the Philippines: Optimization and Expansion of Implementation Towards Policy Formulation

Telehealth Services for the Treatment of Psychiatric Conditions (Telepsychiatry)

Assessing eHealth Technologies' Contributions to Health Governance and Program Management in the Philippines: Component of the Health Technologies for Informed Decision-making of Local Governments (HATID ASEAN) Project in Three ASEAN Countries

Omic Technologies for Health

Profiling and Functional Characterization of novel mutations in the EGFR cellular proliferation and cell survival pathways among Filipino young onset, sporadic colorectal cancers (DOST)

Project 1. Screening and assessment of clinical outcomes of non-familial, sporadic, microsatellite stable young-onset colorectal cancer patients

Project 2. Mutational profiling of KRAS, NRAS, PIK3CA, BRAF and PTEN genes in Filipino young-onset sporadic colorectal cancer patients

Project 3. Functional characterization of novel mutations in downstream effectors of the EGFR Signaling Pathway among young-onset Filipino colorectal cancer patients

Responding to the Philippine HIV Epidemic: An HIV Drug Resistance Surveillance Library and Development of Molecular Diagnostics for Drug Resistance Detection

Project: Analysis and Prevalence of Pre-treatment Drug Resistance (Part 2)

Detection and Functional Characterization of KRAS, NRAS, PIK3CA, BRAF, and PTEN gene mutations in Filipino Colorectal Cancer Patients

Project 1: Mutational analysis of KRAS, NRAS, PIK3CA, BRAF, and PTEN genes in Filipino colorectal cancer patients

Project 2: Genetic Researches on Systemic Lupus Erythematosus Development

Genomic Association Studies in Filipinos on Treatment, Diagnosis and Risk Assessment of Type 2 Diabetes Mellitus and Its Related Medical Conditions
Project 1: Evaluation of Candidate Genomic Variations as Pharmacogenetic Markers for Commonly Used Oral Hypoglycemic Agents among Filipinos

Project 2: Correlation of Candidate Genomic Variations for Susceptibility and Risk Assessment of Type 2 Diabetes Mellitus and its Related Medical Conditions

Project 3: Transcriptional Profiling and Pathway Analyses for Complications of Type-2 Diabetes Milletus

Mutational Analysis of SLC26A4 and Audiological Outcomes among Filipino Cochlear Implantees
Quantitative Molecular Signatures and Predictors of Sepsis and the Development of its Complications using Gene Expression Markers and Pathway Analyses

Genomic Researches on Hypertension, Coronary Artery Disease and Dyslipidemia towards the Development of Individualized Diagnostic and Therapeutic Strategies

Project 1. Pharmacogenetic Studies on some Commonly-Used Drugs for Hypertension, Dyslipidemia, and Coronary Artery Disease Among Filipinos

Project 2. The Prevalence of Genetic Polymorphisms Associated with the Risk for the Development of Hypertension, Dyslipidemia, and Coronary Artery Disease Among Filipino

Functional Food, Nutrition and Food Safety

Potential Presence of Antihypertensive Peptides in Select Philippine Fermented Food Phase 1: Screening of Select Philippine Fermented Food containing Angiotensin I Converting Enzyme (ACE) Inhibitory Peptides

ONGOING

Tuklas Lunas

Integrative Laboratory Animal Testing of Medical devices for Musculo-skeletal Disorders

Project 1: Renovation of Laboratory Animal Surgical Facility
Pre-clinical Evaluation and Chemical Standardization of Moringa oleifera as an anti-inflammatory, anti-hypertensive and anti-hyperglycemic agent`

- Dosage Forms from Philippine Medicinal Plant Constituents
- Pre-formulation and Formulation Studies on Malunggay Tablet*
- Anti-inflammatory Activity of Aqueous and Ethanolic Moringa oleifera Extracts on Sprague-Dawley Rats*
- Anti-hyperglycemic Activity of Aqueous and Ethanolic Moringa oleifera Leaf Extract in Sprague-Dawley Rats*
- Anti-hypertensive Activity of Lyophilized Aqueous and Ethanolic Moringa oleiferaLeaf Extract in Sprague-Dawley Rats
- Acute toxicity Studies of Moringa oleifera Aqueous and Ethanolic Leaf Extracts*
- Chemical Standardization of Moringa oleifera Lam by Chromatographic Finger-printing and Bioactive Compounds Analysis*

Establishment of a human cell culture model as a bioassay for cellular senescence

Compounds Active Against Cancer Cell Lines from Priority Extracts

Promoter-based Drug Screen for Prostate Cancer Therapy

Enzyme Inhibitory Activity and In Vitro Bioactivities and Toxicities of Bioactive Extracts, Bioactive Hits, Drug Candidates and Dosage Forms

Discovery and Development of Health Products: Disease-Specific Bioactive Hits from Terrestrial Organisms (Phase 3) Program

Project 1: Anti-diabetic Bioactive Hits from Priority Bioactive Extracts

Project 2: Anti-Hypertensive and Cholesterol-Lowering Bioactive Hits from Priority Bioactive Extracts

Project 3: Anti-Inflammatory and Anti-Pain Bioactive Hits from Priority Bioactive Extracts

In vitro Toxicity Testing of Plant Extracts with Bioactivity against Diabetes mellitus

Myko-mining and Myko-pharming of Wild Edible and Poisonous Mushrooms in Luzon Island, Philippines for their Medicinal Properties Program

Project 1: Ethnomycology, Mycophagy and Mykopharming of Wild Edible and Poisonous Mushrooms

Project 2: In Vitro Enzyme-based Screening of Mushrooms for Anti-pain, Anti-hypertensive, and Anti-diabetic Properties

Project 3: Molecular Identification, Toxicity Profiling and Anti-Cancer Screening of Mushrooms Luzon Island, Philippines

Program: Clinical Studies for the Development of a Guava Gargle/Mouthwash for Throat and Periodontal Infections

A Randomized Control Trial on the Efficacy of Psidium guajava Gargle versus Normal Saline Solution in Improving Clinical Outcomes among Patients diagnosed with Acute Tonsillopharyngitis*

Tuklas Lunas Consortium in the Cordillera: Documentation, Standardization, and Formulation of Dosage Forms from Indigenous Plants and Microorganisms with Bioactivities

Project 1. Potential activity of indigenous and endemic plant extracts from the Cordillera region against ESKAPE bacteria

Project 2. Mining the fungal diversity of Benguet for epipolythiodioxopiperazine (ETP) biosynthetic gene cluster for the epigentic induction of anti-infective bioactivity

Project 3. Online database system for the medicinal plants in Cordillera region

Project 4. Resistance modifying agents from microbiota and plants of Benguet

Project 5. Standardization of crude herbal formulation from plants indigenous to Benguet for anti-diabetes
Project 6. The formulation & evaluation of capsules containing herbals with antidiabetic activity
Phase 1 Safety and Dose Escalation Trial of Orally Administered Fixed Dose Combination Capsule of E. hirta + L. speciosa + Z. officinale in Healthy Filipino Males under Fasting Conditions

Studies and Correlation Analyses of Chemical Composition and Bioactivity of three (3) common Philippine Botanicals Plants: Antipyretic, Anti-inflammatory, Analgesic Activity of Extracts from Vitex negundo L. and Zingiber officinale Roscoe, and Antimicrobial Activity of Blumea balsamifera Extract

Tuklas Lunas from Endemic/Indigenous Plants in Bicol with Bioactivity against Diabetes, Obesity and Hypertension Program

Screening for anti-diabetic, anti-obesity and anti-hypertensive activities and in vitro toxicity evaluation of plant extracts

Synthesis and Derivatization of Disease-Specific Bioactive Hits and Lead Compound

Project 5: Lead Optimization of Acrylated Cyclopentenone Derivatives with Anti-Inflammatory and Anti-Cancer Activities: Synthesis, Characterization, SAR and ADMETox Studies

Upgrading of ITDI Laboratory Animal Facilities in Support for Tuklas Lunas and Other DOST Programs and Industry Needs

Discovery and Development of Health Products (DDHP): Formulation of Disease-Specific Standardized Herbals for Pre-Clinical and Clinical Development

Project 1: Development and Validation of TLC Methods for Chemical Standardization of Plant Extracts with Anti-Diabetic and Anti-Hypertensive Properties*

Project 2: Chemical Profiling and Standardization of Medicinal Plants*

Project 3: Formulation of Anti-Inflammatory Herbal Drugs for Pre-clinical and Clinical Development*

Project 4: Formulation of Standardized Herbal alpha-Glucosidase Inhibiting Extracts for Pre-Clinical and Clinical Development*

Project 5: Standardized Dosage Forms of Biologically Active Extracts Suitable for Use in Pre-clinical and Clinical Development

Project 6: Evaluation of xanthine oxidase inhibition activity of the formulated tablet from the ethanolic extracts of selected medicinal plants for gout*

Project 7: Formulation of Anti-Hypertensive Standardized Herbal Extracts for Pre-clinical and Clinical Development*

Discovery and Development of Health Products: Disease-Specific Bioactive Hits from Terrestrial Organisms (Phase 2)

Project 3: Anti-Hypertension and Cholesterol-Lowering Compounds From Bioactive Extracts From the Regions*
Project 4: Anti-Infective Agents From Endophytic and Epiphytic Fungi*

Project 8: Isolation and Structure Elucidation of Bioactive Components From Herbal Extracts From Benguet for Anti-Diabetes*

Project 9: Isolation, Purification, and Structure Elucidation of Potential Anti-Cancer Compounds From Bioactive Extracts*

Project 12: Bioactive plant compounds as immunotherapeutic agents for secondary immunodeficiency disorders*

Philippine Biorepository Network (PBN) Program
Establishment of a Philippine Medicinal Plants Garden as a Biorepository Facility

Seed banking for Long-term Sustainable Conservation and Utilization of Philippine Medicinal Plants

Development of Biorepository Facility for Plant Extracts/ Compounds for Drug Discovery
Embarking on the Establishment of a DNA/RNA Repository for Philippine Medicinal Plants

Development of the Sample and Data Management System for the Philippine Biorepository Network
Confirmatory and Orthogonal Assays to Eliminate Artefactual Drug Bioactivities (Phase 2): Expanded Suite of Assays to include Multiple Hallmarks of Cancer

Discovery and Development of Health Products: Extracts from Terrestrial Organism for Bioactivity and Toxicity Assays (Phase) 2 Program

Herbal Extracts From Palawan For Bioactivity And Toxicity Assays

Plant Extracts from Panay Island for Bioactivity and Toxicity Assays
Herbal Extracts from the Sierra Madre Mountain Range For Bioactivity And Toxicity Assays
Metabolomics-Driven Discovery of Antimicrobial Drug Leads from Marine-Sediment Derived Actinomycetes of Iloilo

Myko-mining and Myko-pharming of Wild Edible and Poisonous Mushrooms in Luzon Island, Philippines for their Medicinal Properties Program

Project 4: Development of Mushroom-based Functional Foods

Development of Anti-inflammatory Herbal Products from Iluko Indigenous Plants Program

Project 1: Anti-inflammatory and Toxicity Profile of Ethanolic Extracts from Indigenous Plants of Ilocos Norte

Discovery of Cardiometabolic Bioactives from Plants in Central Philippines:

Project 1: Screening for Cardiometabolic Bioactives from Herbal Plants

Project 2: In-vitro Toxicity and Orthogonal Assays for Cardiometabolic Bioactives

Project 4: Ethnobotanical Survey of Medicinal Plants in Bohol, Masbate, and Romblon

Development of Standardized Anti-infective and Anti-pain Herbal Products from Region 2 Program

Project 1: Non-toxic Bioactive Plant Extracts from Region 2 for Infection and Pain
Discovery and Development of Natural Products from Mindanao Marine Resources Program

Project 1: Anti-Cancer Drug Leads from Marine Sponges Collected Off the Coasts of Mindanao

Project 2: Seahorses and pipefishes with pharmaceutical potentials from selected areas in Mindanao, Philippines

PHARMAFERN: Development of Health Products from Ferns Program

Project 1: Pteri-Nursery: Mass Propagation of Selected Ferns for Development of Health Products

Project 2: OPTIFern: Optimization, Packaging, Technology & Innovation of Functional Food Products from Ferns

Project 3: Development of Topical Anti-inflammatory Formulations from Ferns

Project 4: Chemical Profiling and Standardization of Developed Herbal Products and Establishment of Metabolite Extraction Laboratory

Project 5: Anti-inflammatory Compound/s from Select Ferns in Mindanao

Bridging Efficacy and Safety: IND-Enabling Suite of ADME-Tox Assays

Project 1. Optimization of Physico-Chemical Drug Properties

Project 2. Cell-based ADMET assays

Project 3. 3. HPLC and Mass Spectral Studies to Support Various ADMET assays

Project 4. Metabolite Profiling Using Imaging Mass Spectrometry

Project 5. Determination of Pharmacokinetic Properties
Discovery and Development of Health Products: Disease-Specific Bioactive Hits from Terrestrial Organisms (Phase 3):

Project 4: Anti-Infective Bioactive Hits Against Methicillin-Resistant Staphylococcus aureus and Klebsiella pneumoniae from Priority Bioactive Extracts

Project 5: Potential Anticancer Bioactive Hits from Priority Bioactive Extracts against Breast Cancer Cell Lines
Project 6: Anti-infective Hits from Priority Bioactive Extracts from Indigenous and Endemic Plants of the Cordillera against Staphylococcus aureus and Pseudomonas aeruginosa

Project 7: Anti-infective Hits from Priority Bioactive Extracts from Fungi

Project 8: Anti-diabetic Bioactive Hits from Priority Bioactive Extracts from Plants Indigenous to Benguet

Project 9: Anti-lung Cancer Bioactive Hits from Priority Bioactive Extracts

Project 10: Anti-hyperuricemic Bioactive Hits from Priority Plant Extracts

Project 11: De-replication with LC-MS Based Metabolomics of Philippine Flora

Formulation of Dosage Forms Using Existing and Plant-Derived Excipients Program

Project 1: Characterization of Mango (Mangifera indica) Peel Derived Pectin as Pharmaceutical Binder

Project 2: Pectin Extraction from Passion Fruit (Passiflora edulis) Peel: A Pharmaceutical Excipient

Project 3: Characterization of the Extracted Mucilaginous Substance of Selected Philippine Vegetables and Fruit as Pharmaceutical Binder

Project 4: Toxicological Screening of Plant-Derived Excipients

Discovery and Development of Health Products – Marine Component (Phase II)

Project 1: Anti-Pain and Anti-Neurodegeneration Drug Candidates: Discovery and Development

Project 2: Anti-infective and Anticancer Drug Candidates from Marine Microorganisms and Sponges: Discovery and Development

Synthesis and Derivatization of Disease-Specific Bioactive Hits and Lead Compound

Project 1: Lead Optimization, In Silico Prediction, Molecular Docking and Determination of ADMETox Properties of Small Molecules as Antidiabetic Drugs

Project 2: Lead Optimization, Molecular Docking and ADME-Tox Studies of Imidazole-based Antifungal Agents
Project 3: Synthesis of Deguelin, Rotenone, and Small Molecule Derivatives as Anticancer Agents

Project 4: Lead Optimization, Molecular Docking and Determination of ADMETox Properties of Benzimidazoles with Antihypertensive Activity

Project 6: Computer-aided Drug Design of Natural Products-based, Peptide-based, and Synthetic Antidiabetic, Antifungal, and Anticancer Lead Compounds and Derivatives

DRR-CCA

Development of microfluidic paper-based analytical devices (µPADs) for the detection of pathogens in water as a disaster-risk preventive tool

Loop-Mediated Isothermal Amplification (LAMP) Detection for Schistosoma japonicum in Environmental and Flood Waters: Risk-Based Surveillance of Suspected Transmission Sites
Assessment of the Safety Level of Level 1 Government Hospitals in Region 8 Based on DOH's Hospital Safety Index

Development of Health Index: Vulnerability to Extreme Environmental Events (D-HIVE) for Marinduque Island

Psychosocial Problems of Inter-Agency Disaster Management Responders: The Case of Marawi Siege
Knowledge, Attitude and Practices on Health Consequences related to High Heat Index among the Outdoor Workers in Cabanatuan City

Post Siege Levels of Genotoxic Hazards in Marawi City by Micronucleus Assay

Diarrheal Morbidity and Mortality in the Philippines: Investigating the Spatiotemporal Effects of Climate/ Weather

Public Health Risk Associated with the Marawi Armed Conflict: Assessment of Heavy Metals in Water, Sediments, and Fishes in Lake Lanao
Assessment of Regional and Local Development Outcomes and Health and Health-Related Indicators for DRR in Region 1

Risk Assessment of Common Health Problems in Core Shelters of Tuguegarao City

Heavy Metals Assessment in Drinking and Deep Well Waters in Marawi City – Post Siege

Influence of Habitat and Climate Variables on Dengue Vectors in Cagayan de Oro City

Camfant: Retorted Ready-To-Eat Complementary Food For 6-12 Month's Old Infant

Center for Innovations for Cost-Effective Disaster Risk Reduction and Management in Health (DRRM-H) Outcomes in NCR and the Philippines

Project 1: Creation and Pilot Testing of Disaster Resource Mapping and Damage Assessment Software (Web-based and Android App-based)

Project 2: Mental Health Triaging for Evacuation Center and Camp Management

Project 3: Simulation-Based Learning Laboratory
Water Assessment of Teratogens and Endocrine Disruptors on Fetal-Maternal Health (WATER FeMaH)

Project 1: Microbial Communities as Sentinels of Environmental Pollutants in Metro Manila's Drinking Water Resources

Project 2: mDarT (Zebrafish Danio rerio Teratogenic Assay with Metabolic Activation) for the Screening of Teratogens and Endocrine DIsruptors in Metro Manila's Drinking Water Resources

Project 3: Mammalian Cell Culture Assay for Monitoring Endocrine Disruptors in Metro Manila's Drinking Water Resources

Biomedical Engineering and Hospital Technologies

Development of Posterior Cervical Fixation System
Development of an Insole Pressure Sensing System with Inertial Measuring Unit for the Prevention of Foot Ulcers in Diabetic Mellitus

LAPARA Project: Robotic Articulating Laparoscopic Instrument

TAYO Project (IBEHT Project 1)
PADAYON Project: Capacity Building for S&T Personnel in Biomedical Devices Innovation and Research

Clinical Safety and Efficacy Study of Ginhawa, a Philippine-made ICU Ventilator (Project 1)
Oil-based Thermal Disinfection Technology

ICT for Health

Development of a Data Privacy Toolkit for Research Involving Human Participants in the Philippines: A Participatory Action Research Project

Digital Histologic Image Analysis Software for Hirschsprung's Disease

EMR for XDP Care: Design, development, and implementation of an Electronic Health Information System for X-linked Dystonia Parkinsonism

Project 3: Implementation, Monitoring, and Evaluation of Web-based Pediatric Palliative Care Platform

Roll-out of 1,000 RxBox Telehealth Device in Selected Rural Health Centers in the Philippines

Effects of RxBox on Patient and Health Information Outcomes in Philippine RHUs

Project 2: Development of a Laboratory Information Management System (LIMS) for Biorepository Use of "Omics" Research

Operations and Legal Research and Modelling on the Implementation of Telehealth Services within the Universal Health Care (UHC) Vision

Strengthening Urban Primary Healthcare Service Delivery through the Use of eHealth Programs in China, Nepal, and the Philippines

Omic Technologies for Health

Epidemiology of Acute and Severe Dengue Infection through the Integrated Analysis of Molecular, Virologic and Clinical Factors

Early CANcer Detection in the LivEr of Filipinos with Chronic Hepatitis B Using AI-Driven Integration of Clinical and Genomic Biomarkers (CANDLE Study)

Project 1: Establishing a Clinical and Genomic Profile of Filipinos for Early Detection of Liver Cancer

A Proposal to Establish the Philippine Genome Center - Protein, Proteomics and Metabolomics Facility (PPM)

Installation and Operation of the Philippine Genome Center -Protein Proteomics, and Metabolomics Facility (PPMF)
Enhanced Capability Building in R&D in Genomics

Program Management Coordination
Establishment of Genomics Consortium and Core Facility in Visayas

Establishment of Genomics Consortium and Core Facility in Mindanao

IMP-XDP: Investigations on the Molecular Pathogens of X-Linked Dystonia Parkinsonism

Filipino Genomes Research Program

Filipino Forensic Genomics (Phase I)

Filipino Genomes: History, Evolution, Origins and Applications

Filipino Genomes Region for to Help Resolve Child Sexual Abuse Cases

Evaluation of the Safety and Feasibility of Intramuscular Transplantation of Umbilical cord- derived Mesenchymal Stem Cells for Diabetic Foot Ulceration

Clinical proteomics for cancer initiative: A proteomics-based discovery of non-small cell lung cancer biomarkers and drug targets in the Philippines (DOST)

Project 1: Assembly and archiving of clinical samples for proteomic analysis

Project 2: Sample processing for proteomic analysis and functional characterization and early clinical confirmation of biomarker application

Project 3: Proteomic analysis of aberrant protein expression in Non-Small Cell Lung Cancer (NSCLC) Blood and Placental Gene Expression in Gestational Diabetes Mellitus: Potential Identification of Early Biomarkers

Frequency of Lysosomal Storage Disorders Among Patients Suspected to have the Clinical Features of these Diseases at the Philippine General Hospital Detection and Functional Characterization of KRAS, NRAS, PIK3CA, BRAF, and PTEN gene mutations in Filipino Colorectal Cancer Patients Functional Characterization of Novel Mutations in Downstream Effectors of the EGFR Signaling Pathway among Filipino Colorectal Cancer Patients

Functional Food, Nutrition and Food Safety

Potential Presence of Antihypertensive Peptides in Select Philippine Fermented Food Phase 1: Screening of Select Philippine Fermented Food containing Angiotensin I Converting Enzyme (ACE) Inhibitory Peptides

Philippine Sweet Potato Flour (SPF) as a Functional and Technological Food Ingredient

Oplan Sulong PILIpinas! An Exploration of Promising Health Potentials of Pili

Project 1: Determination of Bioactive Compounds. In Vivo Toxicity Studies and In Vitro assays of Pili (Canarium ovatum Engl.) Pomace and Oils directed at the Metabolic Syndrome and Neurodegenration

Project 2: Development of Ready-to-Drink Pili(Canarium ovatum Engl.) Pomace Drink

Project 3: Utilization of Pili (Canarium ovatum Engl.) as a Source of Antioxidant Dietary Fiber in Burger Patties Angiotensin I-Converting Enzyme (ACE) Inhibitory Peptides from Mangoes (Mangifera indica L. cv. 'Carabao') in Selected Provinces in the Philippines

Dietary Fiber Fermentation Products from Lemon grass (Cymbopogon citratus Stapf) as Inhibitors of Enzymes Associated with Diabetes Mellitus and Cardiovascular Diseases: In vitro and In vivo Studies

Potential Presence of Antihypertensive Peptides in Select Philippine Fermented Food - Phase II: Identification and Quantification of Angiotensin I Converting Enzyme (ACE) Inhibitory Peptides from Select Philippine Fermented Food Products
Reinventing Ice Cream into a Functional Food Matrix
Myko-mining and Myko-pharming of Wild Edible and Poisonous Mushrooms in Luzon Island, Philippines for their Medicinal Properties:

Project 4. Development of Mushroom-Based Functional Food

BerryPinoy: Exploring the Potentials of Philippine Indigenous Berries as Functional Foods

Project 1. Philippine Indigenous Berries: Bioactive components and in vitro biochemical activities

Project 2. Philippine Indigenous Berries: In Vivo Studies on Toxicity and Effects on Biomarkers of Obesity and Associated Metabolic

Disorders (Dyslipidemia, Inflammation, and Oxidative Stress)
PHARMAFERN: Development of Herbal Products from Ferns

Project 2. OPTIFern: Optimization, Packaging, Technology, and Innovation of Functional Food Products from Ferns

Product Development, Validation of Hypoglycemic Effect, Pilot Testing and Assessment of Business Potentials of the Guava Leaf-based Probiotic Beverage Ingredient

Influences of Maternal Dietary Intake and Nutritional Status on the Microbiological and Chemical Composition of Breast Milk from Mother-Infant Dyads from 0 to 4 months Postpartum

Prevalence and Associated Risk Factors of Impaired and High Fasting Blood Glucose among Filipino Adults, 18 years old and over: Expanded National Nutrition Survey, 2018

Dengue and other arboviruses

WP1 - Aedes Adaptation Genomics Program
PROJECT 1: Assembly and Annotation of Aedes Genomes from Philippine Samples
PROJECT 2: Phenotypic and Genetic Adaptation of Aedes aegypti to Hot or Cold Conditions in the Philippines

PROJECT 3: Functional Genomics of Aedes aegypti: Gene Expression and Adaptation to Heat

WP2 - Horizontal Auto-Dissemination of Pyriproxifen Larvicide (AD-PPF) Ffor Dengue Mosquito Control Trials in the Philippines Program

PROJECT 1: Performance of an Innovative Auto Dissemination of Insecticides (InDAI) for Dengue Mosquito Control in the Philippines

PROJECT 2: Efficacy of Auto Dissemination in Reducing Dengue Incidence in the Philippines

PROJECT 3: Factors Affecting the Acceptability of an Innovative Auto Dissemination of Insecticides for Reducing Dengue Incidence in the Philippines

PROJECT 4: Effect of AD-PPF on the Dengue Incidence through the Use of Den NS1, IgG, IgM Rapid Test

WP3 Anthropogenic Landscape Transformation in MAkiling Forest Reserve and its Impact on Debgue Transmission in the Area

PROJECT 1: A Study of Mosquitoes of Makiling Forest Reserve (MFR) Area with Characteristic Land Use and Survey of their Arbovirus Diversity through Vector-enabled Virome Sequencing (VEVS)

PROJECT 2: Detection and Characterization of Arboviruses from Mosquito Samples

PROJECT 3: Development of a Nanodiagnostic Kit for the Detection of Dengue and Japanese Encephalitis Virus in Arthropods

Diagnostics

FIND Project 1: The ArboChip Project: Molecular Arboviral Detection using Microfluidic Chip Technology (FIND Program)

FIND Project 2: Field Integrated Novel Diagnostics for Flaviviruses- Microfluidic Diagnostic Assay (FIND Program)

Volatile Organic Comounds Detection in Active Pulmonary Tuberculosis using Multi-Array Metal Oxide Gas Sensor

Development of Label- Free Novel Detection of Dengue NS-1

Automatic Detection of Initial Caries Lesions in Children Using Dental Digital Photography through Artificial Intelligence

Development of Paper-based Rapid Diagnostic Kit for Malaria and HIV using Recombinase Polymerase Amplification

Aptamer-based Multiplex Detection Assay for the Early Detection of Leptospirosis

Biochemical and Immunologic Characterization and Cross-reactivity Studies of Allergenic Local Pollen Extracts

Responding to the Philippine HIV epidemic: An HIV Drug Resistance Surveillance Library and Development of Molecular Diagnostics for Drug-Resistance Detection Part 3: Development of Rapid Diagnostic for Detecting Lamivudine Resistance

Development of Low Cost Point-of-Care Diagnostics for Simultaneous Detection of Paragonimus westermani and Mycobacterium tuberculosis using RPA Technology

Point-of-Care Detection of Salmonella enterica DNA using Loop Mediated Isothermal Amplification- Lateral Flow Assay

Hepato-Renal Conditions in Wistar Rats under Prolonged Chronic-Binge
Ethanol Feeding: Predictions Using Multi-layer Perceptron Neural Network"

Development of Novel Radiopharmaceuticals for Management and Detection of Early Stage Prostate Cancer (CRADLE)

List of scholars

New scholars of 2019

Badua, Christian Luke
MD-PhD in Molecular Medicine, UPM

Baldo. Karol Ann
MD-PhD in Molecular Medicine, UPM

Bongon, Patricia Ann
MD-PhD in Molecular Medicine, UPM

Bonifacio, Jon Angelo
MD-PhD in Molecular Medicine, UPM

Dela Cruz, Ma. Carmela
MD-PhD in Molecular Medicine, UPM

Llagas, Julia Patricia
MD-PhD in Molecular Medicine, UPM

Marco, Kitz Paul
MD-PhD in Molecular Medicine, UPM

Opiso, Danna Mae
MD-PhD in Molecular Medicine, UPM

Paner, Joseph Romeo
MD-PhD in Molecular Medicine, UPM

Santos, Sean Lemuel
MD-PhD in Molecular Medicine, UPM

Apostol, K-Anne
MS Molecular Medicine

Dabban, Romar
MS Molecular Medicine

Magan, Bernard Dominic
MS Molecular Medicine

Realingo, Adeliza Mae
MS Molecular Medicine

Noel C. Salvoza, MSc, MD
PhD Fellowship in Molecular Medicine

Loraine Kay D. Cabral, MSc
PhD Fellowship in Molecular Medicine

Batch 4 MD-PhD scholars who passed the 2019 Physician Licensure Examination

Cruz, Christian Alfredo

Ona, Kevin Austin

Quebral, Elgin Paul

Relador, Ruth Joy

Santos, Jerico

Velasco, Adrian Jonathan

ASTHRDP & PCHRD Scholars COMPLETED

Abaca, Mark Jose
MD-PhD in Molecular Medicine, UPM
De Paz, Sheriah Lain
MD-PhD in Molecular Medicine, **UPM**

Dungog, Cecile
MD-PhD in Molecular Medicine, UPM

Poblete, Josept Mari
MD-PhD in Molecular Medicine, UPM

Uy, Charles Patrick
MD-PhD in Molecular Medicine, UPM

Zamora, Pia Regina Fatima
MD-PhD in Molecular Medicine, UPM

ONGOING

Abrilla, Aedrian A.
MD-PhD in Molecular Medicine, UPM

Altavas, Patrick D.K.
MD-PhD in Molecular Medicine, UPM

Aquino, Inah Marie C.
MD-PhD in Molecular Medicine, UPM

Asis, Joannes Luke B.
MD-PhD in Molecular Medicine, UPM

Barcena, Allan John R
MD-PhD in Molecular Medicine, UPM

Barzaga, Arnold Dominic A.
MD-PhD in Molecular Medicine, UPM

Bolinas, Dominic Karl M.
MD-PhD in Molecular Medicine, UPM

Cadacio, Jessa Louise C.
MD-PhD in Molecular Medicine, UPM

Callanta, Maria Llaine J.
MD-PhD in Molecular Medicine, UPM

Cando, Leslie Faye Tan
MD-PhD in Molecular Medicine, UPM

Capiroso, Maragaille R.
MD-PhD in Molecular Medicine, UPM

Carampel, Ajina C.
MD-PhD in Molecular Medicine, UPM

Ceriales, Jeremy Aparecio
MD-PhD in Molecular Medicine, UPM

Chua, John Joseph R.
MD-PhD in Molecular Medicine, UPM

Cruz, Criselda Jean
MD-PhD in Molecular Medicine, UPM

Cruz, Christian Alfredo K
MD-PhD in Molecular Medicine, UPM

Cruz, Joana Marie C.
MD-PhD in Molecular Medicine, UPM

Custodio, Christian Jirard Z.
MD-PhD in Molecular Medicine, UPM

De Galicia, Bryan Paul D.
MD-PhD in Molecular Medicine, UPM

De Jesus II, Federico Cristobal C.
MD-PhD in Molecular Medicine, UPM

De Sagon, Scott Dean P.
MD-PhD in Molecular Medicine, UPM

Dela Rosa, Jared Gabriel Lopez
MD-PhD in Molecular Medicine, UPM

Fernandez, Natasha Andrea
MD-PhD in Molecular Medicine, UPM
Gampoy, Eloina Faye S.
MD-PhD in Molecular Medicine, UPM

Girasol, Mark John G.
MD-PhD in Molecular Medicine, UPM

Gordovez, Francis James A.
MD-PhD in Molecular Medicine, UPM

Grecia, Lordom Reno C.
MD-PhD in Molecular Medicine, UPM

Grecia, Mary Nicole
MD-PhD in Molecular Medicine, UPM

Idolor, Maria Isabel C.
MD-PhD in Molecular Medicine, UPM

Josol, Vivien Joyce D.
MD-PhD in Molecular Medicine, UPM

Lintao, Ryan Cristian V.
MD-PhD in Molecular Medicine, UPM

Lopez, Ben Anthony
MD-PhD in Molecular Medicine, UPM

Malabad, John Carlo M.
MD-PhD in Molecular Medicine, UPM

Malaluan, Michael Roy V.
MD-PhD in Molecular Medicine, UPM

Manalo, Rafael Vincent A.
MD-PhD in Molecular Medicine, UPM

Nakpil, Aurora S.
MD-PhD in Molecular Medicine, UPM

Oliveras, Rommel R.
MD-PhD in Molecular Medicine, UPM

Olotu, Mojisola Christine B.
MD-PhD in Molecular Medicine, UPM

Ona, Kevin Austin
MD-PhD in Molecular Medicine, UPM

Ornos, Eric David B.
MD-PhD in Molecular Medicine, UPM

Padua, Ana Joy P.
MD-PhD in Molecular Medicine, UPM
Pasion, Genmar Cyrus S.
MD-PhD in Molecular Medicine, UPM

Perez, Joy Vanessa D.
MD-PhD in Molecular Medicine, UPM

Perias, Glenmarie Angelica Sacurom
MD-PhD in Molecular Medicine, UPM

Pollo, Brian Andrich L.
MD-PhD in Molecular Medicine, UPM

Quebral, Elgin Paul B.
MD-PhD in Molecular Medicine, UPM

Razal, Rozel B.

MD-PhD in Molecular Medicine, UPM

Relador, Ruth Joy L.
MD-PhD in Molecular Medicine, **UPM**

Reyes, John Carlo B.
MD-PhD in Molecular Medicine, UPM

Reyes, Jeremiah V.
MD-PhD in Molecular Medicine, UPM

Reyes, Lia Angela Esguerra
MD-PhD in Molecular Medicine, UPM

Reyes, Michael Sigfrid S.
MD-PhD in Molecular Medicine, UPM

Robles, Joyce Ann H.
MD-PhD in Molecular Medicine, UPM

Rojo, Raniv D.
MD-PhD in Molecular Medicine, UPM

Salvador, Paul Benedic U.
MD-PhD in Molecular Medicine, UPM

Salvan, Maria Rosewynn Anne Roldan
MD-PhD in Molecular Medicine, UPM

San Juan, Florence Gianina
MD-PhD in Molecular Medicine, UPM

Sanico, Thea Coleen F.
MD-PhD in Molecular Medicine, UPM

Santos, Jerico R.
MD-PhD in Molecular Medicine, UPM
Severino, Mary Elise L
MD-PhD in Molecular Medicine, UPM

Sianoya, Abraham Canaco
MD-PhD in Molecular Medicine, UPM

Sison, Simaco Ibuan
MD-PhD in Molecular Medicine, UPM

Solidum, Jea Giezl N.
MD-PhD in Molecular Medicine, UPM

Sumalde, Angelo Augusto M.
MD-PhD in Molecular Medicine, UPM

Tabios, Ian Kim B.
MD-PhD in Molecular Medicine, UPM

Tan, Joanne Jennifer E.
MD-PhD in Molecular Medicine, UPM

Tantengco, Ourlad Alzeus G.
MD-PhD in Molecular Medicine, UPM
Teh, Treena Rica D. A.
MD-PhD in Molecular Medicine, UPM

Tumampo, Cherry Joy F.
MD-PhD in Molecular Medicine, UPM

Uy, Mary Nadine Alessandra
MD-PhD in Molecular Medicine, UPM

Vidal Jr., Manuel S.
MD-PhD in Molecular Medicine, UPM

Villanueva, Annavi Marie G.
MD-PhD in Molecular Medicine, UPM

Velasco, Adrian Jonathan D.
MD-PhD in Molecular Medicine, UPM

Vista, Fatima Ericka S.
MD-PhD in Molecular Medicine, UPM

DOCTORAL DEGREE

COMPLETED

Hipol, Regina Lourdes B.
PhD Botany, UPLB

Bondoc, Jonah L.
PhD Environmental Science, UPD

ONGOING

Ang, Mary Jean C.
PhD Medical Microbiology, UPM
PhD Biology, UPD

Cruz, Rogelio S.
PhD Biological Science, UST

Dimaguiba, Justin Rachelle P.
PhD Biology, SLU

Gregorio, Ernesto Ramos Jr.
PhD Health Promotion, UPM

Galvez, Eleanor J.
PhD Health Promotion, UPM

Lardizaval, Mechelle P.
PhD Biology, SLU

Malecosio, Serafin O. Jr
PhD Epidemiology, UPM
Maramag, Cherry C.
PhD Epidemiology, UPM

Miranda, Sheila De Vera
PhD Pharmacy, UST

Oruga, Myra Dela Pena
PhD Health Promotion and Education, UPM

Ongpoy, Romeo C. Jr.
PhD Pharmacy, UST

Ramirez, Ma. Anna Rita M.
PhD Nutrition, UPD

Sabinay, Stephen G.
PhD Molecular Biology and Biotechnology, UPLB

Sucol, Yusuf A.
PhD Environmental Science, UPLB

Varona, Gracia F.
PhD Parasitology, UPM

MASTERS DEGREE

COMPLETED

Bautista, Eva Ilagan
MS Clinical Epidemiology, UPM

Otero, Ma. Catherine B
MS Medical Microbiology, UPM

ONGOING

Antalan, David III
MS Molecular Medicine, SLCM

Banzon, Joseph Joy G.
MS Medical Technology, UST

Buhain, Rose Mabell
MS PH Epidemiology, UPM

Busog, Aren Maridin M.
MS Molecular Medicine, SLCM

Concepcion, Maria Gracia R.
MS Molecular Medicine, SLCM

Contreras, Patrice Melody C.
MS Molecular Medicine, SLCM

Cruz, Anna Krizzia A.
MS Molecular Medicine, SLCM

David, April Joy G.
MS PH Epidemiology, UERMMC

Delicana, Reuel C.
MS Molecular Medicine, SLCM

Diño, Maria Patricia H.
MS Molecular Medicine, SLCM

Estrella, Emmanuel B.
MS Clinical Epidemiology

Fernandico, Adrian G.
MS Molecular Medicine, SLCM

Garcia, Clarissa Joy C.
MS Molecular Medicine, SLCM

Garcia, Joshua Roberto
MS Molecular Medicine, SLCM

Guzman, Mariane Amparo P.
MS Population Studies, UPD (5)

Intal, Ma. Verna Y.
MS Nutrition, UPD

Lao, Raphaella G.
MS Molecular Medicine, SLCM

Limbaga, Lorenzo Gabriel C.
MS Molecular Medicine, SLCM

Lucero, Jennifer L.
MS Molecular Medicine, SLCM

Malenab, Ma. Christina T.
MS Environmental Science, UPD

Maynes, Tricia L.
MS Molecular Medicine, SLCM

Morales, Lyndon Dc.
MS Biostatistics, UPM

Nana, Julie Anne M.
MS Molecular Medicine, SLCM

Pagarigan, Geraldine
MS Tropical Medicine, UPM

Pataray, Celia Amour B.
MS Applied Physics, UST

Pua, Marvin Adrian R.
MS Clinical Epidemiology, UPM

Resurreccion, Michael M.
MS Clinical Epidemiology, UPM

Romano, Christopher T.
MS Molecular Medicine, SLCM

Romero, Daryl Colanta
MS PH Epidemiology, UERMMC

Rubian, Fjorda Kim R.
MS Applied Physics, UST

San Valentin, Erin Marie
MS Molecular Medicine, SLCM
Sarabia, Katherine Pearl B.
MS Molecular Medicine, SLCM

Solana, MarikkaThaena V.
MS Clinical and Family Medicine, UPM

Teruel, Patricia Lyanne A.
MS Molecular Medicine, SLCM

Valenzuela, Madonna M.
MS Biostatistcs, UPM

Thesis/Dissertation Grantees

ONGOING

Briones, Jonathan Carlo A.
MS Biological Sciences, UST

Javier, Maria Catherine Jane V.
MS Pharmacology, UPM

Maypa, Alfie Dominic A.
MS Medical Technology, UST

ACCREDITED RESEARCH ETHICS COMMITTEES

LEVEL 1

Region 1
University of Northern Philippines – Research Ethics Committee

NCR
Adamson University – University Ethics Research Committee

Mary Johnston Hospital – Ethics Review Committee

St. Luke's Medical Center College of Medicine William H. Quasha Memorial - Research Ethics Committee

Trinity University of Asia - Institutional Ethics Review Committee

Region 3
Bataan Peninsula State University - Peninsulares Research Ethics Committee

Region 7
University of Bohol - Research Ethics Committee

Region 9
Zamboanga Consortium for Health Research and Development - Research Ethics Review Committee

Region 11
Brokenshire College - Research Ethics Committee

Compostella Valley State College - Research Ethics CommitteeXI

Region 12
Mindanao State University – General Santos City Institutional Ethics Review Committee

Region 13
CARAGA Health Research and Development Consortium - Ethics Review Committee

LEVEL 2

NCR
Asian Hospital and Medical Center – Institutional Review Board

Ateneo de Manila University - Research Ethics Committee

National Ethics Committee

Our Lady of Fatima University - Institutional Ethics Review

University of Santo Tomas College of Nursing - Ethics Review Committee

Region 2
Cagayan Valley Medical Center - Riverview Medical Center Inc. Cluster Research Ethics Review Committee

Region 3
Dr. Paulino J. Garcia Memorial Research and Medical Center - Institutional Review Board

Jose B. Lingad Memorial Regional Hospital – Research Ethics Committee

Bataan General Hospital and Medical Center - Health Research Ethics Committee

Region 5
Bicol Consortium for Health Research and Development – Research Ethics Committee

Region 6
Dr. Pablo O. Torre Memorial Hospital - Research Ethics Review Committee

Region 7
Central Visayas Consortium for Health Research and Development - Central Visayas Research Ethics Committee

Governor Celestino Gallares Memorial Hospital – Institutional Review Board

University of San Carlos – Research Ethics Committee

Velez College - Ethics Review Committee

Vicente Sotto Memorial Medical Center – Research Ethics Committee

Region 9
Western Mindanao State University - Research Ethics Oversight Committee

Region 11
Davao Regional Medical Center – Research Ethics Committee

University of Mindanao – Ethics Review Committee

LEVEL 3

NCR
Cardinal Santos Medical Center – Research Ethics Review Committee

Chinese General Hospital and Medical Center – Research Ethics Review Board

National Children's Hospital – Institutional Review Board

Philippine Heart Center – Institutional Ethics Review Board

San Lazaro Hospital – Research Ethics Review Unit

Single Joint Research Ethics Board

St. Luke's Medical Center – Institutional Ethics Review Committee

The Medical City – Institutional Review Board

University of Santo Tomas Hospital – Research Ethics Committee

Region 1
Mariano Marcos Memorial Hospital and Medical Center – Ethics Review Committee

Region 4A
Mary Mediatrix Medical Center Research – Research Ethics Review Committee

Region 5
Bicol Regional Training and Teaching Hospital – Institutional Review Board

Region 6
St. Paul's Hospital of Iloilo – Institutional Review Board

West Visayas State University – Unified Research Ethics Review Committee

Region 7
Perpetual Succour Hospital – Institutional Ethics Review Board

Region 11
San Pedro Hospital – Institutional Ethics Review Committee

Metro Davao Medical and Research Center Inc. – Anda Riverview Medical Center Inc. Cluster Research Ethics Review Committee

Media Mileage

Online

Forum for rare disease patients care held
January 17, Business Mirror
https://businessmirror.com.ph/2019/01/17/forum-for-rare-disease-patients-care-held/

PSOD holds patient's forum for rare diseases
January 19, Manila Times
https://www.manilatimes.net/2019/01/19/business/health-industry/psod-holds-patients-forum-for-rare-diseases/498498/498498/

House panel approves proposed law on national eHealth system
January 23, Newsbytes
http://newsbytes.ph/2019/01/house-panel-approves-proposed-law-on-national-ehealth-system/

House panel approves proposed National eHealth System and Services Act
January 24, Manila Bulletin
https://news.mb.com.ph/2019/01/24/house-panel-approves-proposed-national-ehealth-system-and-services-act/

Patient's forum gathers health adn advocacy leaders to care for rare
January 24, Manila Standard
https://manilastandard.net/showbitz/celebrity-profiles/285992/patient-s-forum-gathers-health

Dads endorses XU's research on dengue
January 25, Mindanao Gold Star Daily
http://mindanaogoldstardaily.com/dads-endorses-xus-research-on-dengue/

SSC, DOST hold traditional health workshop in Lazi
February 1, PIA
https://pia.gov.ph/news/articles/1017826

Local health researches discussed in Ilocos fora
February 26, PIA
https://pia.gov.ph/news/articles/1019044

DOST ventures into genomics health R&D
February 24, PTV4 News
https://www.ptvnews.ph/dost-ventures-into-genomics-health-rd/

DOST ventures into genomics health R&D
February 27, PNA
http://www.pna.gov.ph/articles/1063105

UPOU celebrates 24th year with ABC Initiative website launch
March 2, PTV4 News
https://www.ptvnews.ph/upou-celebrates-24th-year-with-abc-initiative-website-launching/

DOST's 'Omics' program ushers personalized medicine for Filipinos
March 2, Manila Bulletin
https://lifestyle.mb.com.ph/2019/03/02/dosts-omics-program-ushers-personalized-medicine-for-filipinos/

Medical treatments fit for Pinoys'? Omic technology may be the answer
March 3, Business Mirror
https://businessmirror.com.ph/2019/03/03/medical-treatments-fit-for-pinoys-omic-technology-may-be-the-answer/

Medical treatments fit for Pinoys'? Omic technology may be the answer
March 4, FlipScience.ph
https://www.flipscience.ph/health/omic-personalized-medicine-dost-pchrd/

Omic Technologies for health, bagong teknolohiyang handog ng DOST-PCHRD
March 4, Radyo Agila
http://www.radyoagila.com/health/omic-technologies-for-health-bagong-teknolohiyang-handog-ng-dost-pchrd/?fbclid=IwAR0W0gC-OpEyhy8vN90d0PPAVpJL6f_DjD4Bz0AnTa6laoLGgdCfvzYTXi0

Alvarez: Defining mental health research agenda
March 6, Sunstar Davao
https://www.sunstar.com.ph/article/1795339

Why you should avoid staying inside a hot car this summer
March 14, Top Gear Ph
https://www.topgear.com.ph/features/feature-articles/summer-car-heat-stroke-a962-20190314

Now online: Palliative care center for children with cancer
March 20, Laguna Now
https://lagunanow.ph/2019/03/20/now-online-palliative-care-center-for-children-with-cancer/

Philippine Science Centrum is more fun with new health and tech gallery
March 24, Business Mirror
https://businessmirror.com.ph/2019/03/24/philippine-science-centrum-is-more-fun-with-new-health-and-tech-gallery/

Mobile gaming to boost HIV awareness
April 1, Open Gov Asia
https://www.opengovasia.com/mobile-gaming-to-boost-hiv-awareness/

Drug from Philippine plants seen to cure dengue
April 6, Philippine Star
https://www.philstar.com/headlines/2019/04/06/1907694/drug-philippine-plants-seen-cure-dengue

Herbal Medicine From the Philippines a Potential Cure to Dengue
April 8, The Science Times
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Dela Peña eyes partnership to adapt DOST techs
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The challenge of respecting traditional knowledge
July 15, Vantage Asia
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UP beats Harvard in university rankings for health research citation
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DOST-Philippine Council for Health Research and Development Executive Director Jaime Montoya is at the forefront of efforts towards collaborative research
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DOST-Philippine Council for Health Research and Development Executive Director Jaime Montoya is at the forefront of efforts towards collaborative research
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https://www.facebook.com/dfaphl/photos/a.135755319773 2844/1374692792685551/?type=3&theater

DOST-Philippine Council for Health Research and Development Executive Director Jaime Montoya is at the forefront of efforts towards collaborative research
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NegOcc-based producer markets 'anti-dengue' tawa-tawa extract
August 22, PNA
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After lagundi, a new batch of plant-based drugs
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DOST eyes research-based techs to address dengue problem
September 5, UNTV
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Filipino scientists invent kit for early dengue diagnosis
September 7, The Filipino Times
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Paint the town pink
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Tuklas Lunas continues to pursue pharmacological discovery,development
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Pink light shines for breast cancer awareness
October 7, Manila Standard
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October 13, Manila Bulletin
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Join the Pink October Movement at AyalaCenterCebu
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https://cebudailynews.inquirer.net/265042/join-the-pink-october-movement-at-ayala-center-cebu

DOST, Italy to partner on liver research
October 21, PNA
https://www.pna.gov.ph/articles/1083770

De La Salle Medical and Health Sciences Institute Marks 25 Years of Research Excellence
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SUCs, HEIs to participate in Regional Health Research contest
November 6, PIA
https://pia.gov.ph/news/articles/1029801

Coming home and giving back'
November 14, Manila Standard
https://manilastandard.net/mobile/article/310032

DOST-BIST Program supports R&D through funding
December 8
Business Mirror
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Joint seminar between PCHRD and French National Institute of Health and Medical Reseach held in Paris
December 7, Balikbayan Magazine
https://balikbayan.asianjournal.com/global-affairs/europe/joint-seminar-between-the-philippine-council-for-health-research-and-development-and-the-french-national-institute-of-health-and-medical-research-held-in-paris/

Filipino scientists: The world's best
December 19, Business Mirror
https://businessmirror.com.ph/2019/12/19/filipino-scientists-the-worlds-best/

DOST establishes 'Tuklas Lunas' program to produce affordable, homegrown medicine
December 30, Manila Bulletin
https://news.mb.com.ph/2019/12/30/dost-establishes-tuklas-lunas-program-to-produce-affordable-homegrown-medicine/

DOST establishes 'Tuklas Lunas' program to produce affordable, homegrown medicine
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https://tabloid.ph/2019/12/30/dost-establishes-tuklas-lunas-program-to-produce-affordable-homegrown-medicine/

PRINT

Forum for rare disease patients care held
January 17, Business Mirror

PSOD holds patient's forum for rare diseases
January 19, Manila Times

House panel approves proposed National eHealth System and Services Act
January 24, Manila Bulletin

Patient's forum gathers health adn advocacy leaders to care for rare
January 24, Manila Standard

House okays use of medical MJ measure
January 30, People's Tonight

DOST-BIST Program supports R&D through funding
December 8, Business Mirror

World's 1st dengue drug, made by Pinoys
December 17

RADIO

Axis Knee (Dr. Bong Guloy)
March 16, DZRB

TV

Axis Knee and Biotek-M
March 23, Salamat Dok

HIV Gaming Engaging and Testing, "Battle in the Blood"
May 30, Future Perfect, CNN

Siyensikat Ep. on Axis Knee System
July 7, GMA News TV

Siyensikat Ep. on Sexual Assault Investigation Kit
September 1, GMA News TV

DOST-PCHRD may alok na pondo para sa mga kwalipikadong research proposal
October 16, Newsroom Ngayon, CNN
Siyensikat Ep. on eHATID LGU
November 3, GMA NEws TV

Tuklas Lunas Program, naglalayong makabuo ng mga epektibo at mga murang gamot mula sa kalikasan
December 19, Mata ng Agila, Net25
https://media-meter.net/client/#/media-single/video/283e382b6f7d7587ccb5edee43124827/1
Tuklas Lunas Program
December 19, Pambansang Almusal, Net 25
https://media-meter.net/client/#/media-single/video/1b888a379d568e0abd6f875a95898779/1

Talakayang HeaRT Beat Media Mileage

Axis Knee System

The Axis Knee System
PTV4 News

Siyensikat to feature Axis Knee System
360 Media

OMIC Technologies for Health

DOST ventures into genomics health R&D
PTV4 News

DOST ventures into genomics health R&D
PNA

DOST's 'Omics' program ushers personalized medicine for Filipinos
Manila Bulletin

Medical treatments fit for Pinoys'? Omic technology may be the answer
Business Mirror

Medical treatments fit for Pinoys'? Omic technology may be the answer
FlipScience.ph

Omic Technologies for health, bagong teknolohiyang handog ng DOST-PCHRD
Radyo Agila

Biomedical Engineering and Health Technologies

PCHRD Anniversary/Biomedical Devices
Bandila

Health Research in Industry 4.0
PTV4 News
Axis Knee (Dr. Bong Guloy)
DZRB, DZBB

PCHRD Biomedical Devices and Industry 4.0
PNA

Diagnostics Program

HIV Resistance Drug Detection Kit
PTV4 News

Biotek M (Dr. Raul Destura)
DWBL

Diagnostics (Dr. Edsel Salvana)
Radyo Agila

Tuklas Lunas Program

World's 1st dengue drug, made by Pinoys
Business Mirror (Print and online)

First Dengue Meds
Business Mirror

Tuklas Lunas Talakayang Heart Beat
Dyaryong Tagalog

Filipino Scientist: The world's best
Business Mirror

Tuklas Lunas Program
Net 25

Tuklas Lunas Program, naglalayong makabuo ng mga epektibo at mga murang gamot mula sa kalikasan
Net 25 Primetime

Tuklas Lunas
Philippine News Agency

Kauna-unahang gamot kontra-Dengue sa mundo, gawang-Pinoy at posible nang ilabas sa merkado matapos ang mahigit 7 taong pagsusuri
24 Oras (GMA 7)

Unang gamot kontra-Dengue na gawang-Pinoy, ''very promising'' ayon sa DOH
Saksi (GMA 7)

Tuklas Lunas Program, naglalayong makabuo ng mga epektibo at mga murang gamot mula sa kalikasan
Agali Balita Alas Syete (Net 25)
World's first anti-dengue drug made by Pinoys may soon be available
GMA News Online

DOST develops anti-dengue drug
Tempo

Anti-dengue drug developed by Filipinos may be available by 2020
Manila Bulletin Online

DOH welcomes development of possible anti-dengue drug by Filipino experts
Manila Bulletin Online

Gamot sa dengue na gawang Pinoy, ilalabas na
Bagong Sagad

GAMOT SA DENGUE, NALIKHA NG PINOY
Remante

Filipino science researchers develop World's first anti-dengue medicine
Good News Pilipinas

Gamot laban sa dengue, posibleng ibenta na sa merkado
DZRB

INILUNSAD ng Department of Science and Technology-Philippine Council for Health Research and Development (DOST-PCHRD)
Pilipino Mirror

Kauna-unahang gamot kontra dengue sa mundo, nilikha ng mga Pinoy
Aksyon TV, Radyo 5

Mayroon ng gamot laban sa dengue
DZRB

Gamot kontra-dengue na nilikha ng mga Pinoy, kauna-unahan sa mundo
Kami Online

Tuklas Lunas for Accessible, Affordable and Reliable Drugs
WazzupPilipinas

DOST establishes 'Tuklas Lunas' program to produce affordable, homegrown medicine
Manila Bulletin

Pinoy scientists develop medicine from local plants to heal hypertension, gout, and other ailments
Good News Pilipinas

Technology Transfer

Support for IP protection

Prior art search reports for 10 Tuklas Lunas Disclosures

Patent application for anti-dengue drug formulations

Copyright assistance for 13 Basic Research Methods modules

Copyright application for internal IPs

Technology transfer support

Preparation of valuation reports for PCHRD-funded technologies

Assistance in the preparation of research collaboration agreements (RCA)

Assistance to RITM in drafting their own IP Policy

Launched the first Philippine Health Research Innovations Matching Event (PHRIME)

Capacity-building activities

The Patent Licensing and Tech Transfer Playbook of Dr. Gerardo M. Castillo

Seminar-Workshop on Invention Disclosure

Diagnostic Innovation from Lab to Market: Translating Good Ideas into Lasting Impact

Academe and Industry Stakeholders Forum on Technology Commercialization

Seminar-Workshop on RA 10055 and IP Policies

Follow-up Workshop on IP Policy drafting

Training on Subscription to Patent Search Solution: Derwent Innovation by Clarivate Analytics

Capacity Building for DOST Employees on Intellectual Property Rights (Patent Drafting, Patent Information Search, Industrial Designs)

Knowledge and Technology Transfer Offices (KTTO) Development Training Program

In-house seminars

In-house seminar on TRL and IRL
In-house seminar on DOST IP Policy
In-house seminar on Basic Prior Art Searching

Technology promotion

Yerba Buena (Analgesic drug formulation)
UPManila

Ulasimang-bato (Anti-inflammatory drug formulation)
UP Manila

eHATID (Android-based electronic medical record system for LGU)
Ateneo De Manila University

Tsaang Gubat for Biliary and Intestinal Colic Pains
UP Manila

Akapulko Lotion as Antifungal
UP Manila

BSP Awardees

SHORT TERM

Dr. Christian T. Gloria
Mental Health
USA
Angeles University Foundation

Dr. Annabelle P. Villalobos
Biochemistry, Analytical Biochemistry, Cell and Molecular Biology, Biopharmaceutical R&D
USA
Central Mindanao University

Dr. Alfredo C. Acosta
Device Innovation, Surgery, Surgical Research
USA
National Institutes of Health, UP Manila

Dr. Gerard G. Dumancas
Chemometrics, Mdecial Bioinformatics
USA
University of San Agustin - Iloilo City

Dr. Fidela L. Moreno
Clinical Trials
USA
Food and Drug Administration

Dr. Mark Ihrwell R. Petalcorin
Molecular Biology, Biochemistry, Genetics, Genome Editing and DNA repair
Singapore
University of San Carlos

Dr. Michelle D. Regulacio
Nanotechnology, Functional Nanomaterials, Chemistry
Singapore
University of the Philippines Diliman

Dr. Emilyn U. Alejandro
Placental and Islet Biology
USA
University of Santo Tomas

Dr. Rose E. Constantino
Psychiatry, Mental Health Nursing, Forensic Nursing, Family Law
USA
Cebu Normal University

Dr. Melvin L. Munar
Biomaterials and Bioceramics Engineering , Dental Science
Japan
Centro Escolar University (CEU)

Dr. Benito O. De Lumen
Drug discovery and development, Agricultural Chemistry-Biochemistry, Food Science
USA, UP Mindanao

Dr. Angelo Josue M. Lubag
Chemistry, Biomedical Magnetic Resonance Imaging (MRI) and Industrial Chemistry
USA
Asian Hospital and Medical Center (AHMC)

Dr. Ferdinand E. Amarillo
Human cytogenetics, laboratory genomic medicine,plant molecular cytogenetics
USA
National Institutes of Health, UP Manila

Dr. Andrea Roxanne J. Anas
Environmental material science
Japan
Angeles University Foundation

MEDIUM TERM

Dr. Thomas Neil B. Pascual
Nuclear Medicine
Austria
Philippine Nuclear Research Institute

Dr. Arnulfo C. Rosario Jr.
Medical Informatics
USA
Philippine National Ear Institute, National Institutes of Health, UP Manila

Dr. Romulo J. de Castro
Biomedical research and informatics
USA
University of San Agustin

Dr. Harvy Joy Liwanag
Epidemiology, health systems and policy, public health
Switzerland
Department of Health - Health Human Resource Development Bureau (DOH-HHRDB)

LONG TERM

Dr. Jesus Felix B. Valenzuela
Computational and AI-assisted Health Bioinformatics
Singapore
Analytics, Computing and Complex Systems Laboratory of the Asian Institute of Management (ACCeSs@AIM)

HERDIN Plus on Tour

Visited Institutions

Olivarez College

De La Salle Health Sciences Institute

Philippine College of Physicians

Philippine College of Physicians 49th Annual Convention

San Beda University

Ateneo De Manila University

Mariano Marcos Hospital

Mariano Marcos University

Northwestern University

Northern Christian College

Divine Word College of Laoag

Philippine College of Physicians

West Visayas State University

University of St. La Salle

PCHRD Personnel

PCHRD Officials

Jaime C. Montoya, MD, MSc. PhD, CESO III
Executive Director

Division Chiefs

Paul Ernest N. De Leon
Research and Development Management Division

Carina L. Rebulanan
Institution Development Division
Edgar F. Ortiz
Finance and Administrative Division

Merlita M. Opeña
Research Information, Communication and Utilization Division

Office of the Executive Director

Laureano, Eric B.

Manalo, Eliza D.
Martinez, Gerlie P.

Ramos, Angelene B.

Tumlos, Vincent John H.

Research and Development Management Division

Alcala, Jose Lexy G.

Almonte, Andrea Mae L.

Balbedina, Janine Marie B.

Bartolome, Jay Vee C.

Buan, Raizsa Sharmi E.

Bueno, Christopher Jones B.

Bulao, Melissa C.

Cajigas, Ma. Elizabeth R.

Carolasan, Ric Millicent R.

Crisostomo, Mer-va F.

Cruz, Ervinna M.

De Jesus, Ana Jessa A.

De Mesa, Nheka Louise D.

Depatillo, John Philip P.

Dilla, Emerson Bryan DJ.

Dumol, Cecile G.

Eugenio, Maica Ann A.

Galinato, Mark Gabriel M.

Gelera, Guidditta L.

General, Jojana Christine P.

Gepanaga, Jose Joy J.

Guaring, Rogelio V., II

Hipe, Alyanna Maachah P.
Laya, Marianne Joy G.

Leyva, Lea Samantha M.

Lozada, Lemuel D.

Macasinag, Angeline S.

Medina, Jewel Arianne M.

Mendoza, Ana Veronica C.

Mogol, Evita Linda M.

Nacario, Alyssa Gail G.

Pacho, Mary Ann I.

Parena, Aeron Jade S.

Pia, Earl Clyde Matthew A.

Rocamora, Neptune C.

Sabellano, Janel A.

Sanchez, Claridel H.

Soria, Marie Claire A.

Sornillo, Bianca Joyce T.

Taguiang, Ma. Rosella L.

Tamayo, Kathleen B.

Tumlos, PearlKathleen C.

Verano, Aldrick B.

Research Information, Communication and Utilization Division

Alvarado, Karen Joy B.

America, Joana J.

Bacarra, Alyana Kaye M.

Bahala, Renante G.

Balangat, Julie Anne G.

Cagatan, Erikka Armyn M.

Cantos, Desiree Ann P.

Cenon, Grace Ann A.

Cornea, Hector Neil B.

Daulat, Grace Ruth T.

Dimailig, Catherine Joy C.
Espiritu, Fatima G.

Gabriel, Ross Gerald T.

Garcia, Ullyann C.

Gonzalez, Christine Jane M.

Gumbao, Princess Jane M.

Hasta, Marc Enrico O.

Intia, Maria Violeta G.

Itulid, Ana Ciaren H.

Lagrimas, Faye Margaret S.

Lavapie, Neil Jerome P.

Lolong, Ronald Ryan D.

Macan, Jwynne Gwyneth P.

Manaig, Magdalena P.

Marco, Mylene B.

Martonito, Roselle L.

Molina, Ronel D.

Pariño, Renzell Ann M.

Piamonte, Samuel Brando H.

Principe, Jeverly Ann S.

Quintana, Joanna Celeste M.

Reyes, Clarissa B.

Soldevilla, Kevin Leonard D.

Solibaga, Nathaniel Joseph R.

Suarez, Jenny Lyn V.
Sumague, Marie Antoniette V.

Tiamson, John Henry B.

Trinidad, Janine Rose E.

Zamora, Kristine Dominique M.

Institution Development Division

Abad, Angeline P.

Abrera, Nikki Rose V.

Aguila, Dean Ryan C.

Baculina, Renalyn H.

Bagayao, Sheena Mae A.

Balbuena, Maria Belen A.

Berroya, Marie Jeanne B.

Cambonga, John Marc R.

Castro, Brett Emerson T.

Catameo, Anicia P.

De Leon, Paula Jane A.

Gozun, Ian Hannah C.

Labonite, Laila M.

Pedraza, Alysya Marie D.

Picones, Judith A.

Refuerzo, Reichel Ann P.

Roja, Lucila E.

Suerte, Jessica Marie R.

Tabi, Rochelle May G.

Finance and Administrative Division

Agsaoay, Donna Mae J.

Atienza, Michelle V.

Belizar, Joan B.

Bosi, Judith T.

Buclatin, Jessamyn M.

Cajigas, Reinier S.

Cuevas, Fe S.
Dasmarinas, Glaiza C.

Dayao, John Jefferson G.

Esquejo, Benedict Leondro V.

Flores, Donavie D.

Francisco, Arsenia R.

Go, Lorainne Joy M.

Guimba, Irish P.

Hernandez, Diego O.

Inciso, Genesis C.

Inocencio, Kristine N.

Marabe, John Jave D.

Milante, Earvin James P.

Oclarit, Shiryl L.

Ocon, Sylvia N.

Olatan, Buenalivia N.

Pangan, Cirio D., Jr.

Pedrezuela, Ronaldo P.

Reodica, Maria Teresa C.

Sacro, Louie Vic N.

Taborda, Wilfredo T.

Velo, Diodine Love B.

QUALITY POLICY

“We are committed to provide research-based solutions and innovations in health, based on the balance scorecard set by the Council, within the highest standards of professionalism, within our core competency and available resources, in accordance to customer requirements, and in adherence to ethical standards, applicable regulatory and statutory requirements.

We commit to continually improve the effectiveness of our QMS to enhance customer satisfaction.”

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